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***Remarkable Experiences in a Narrative Memoir of a Student of Portuguese/English Teaching Practicum from the School of Education at UFRJ***

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**Abstract**

From a sociointeractional perspective of discourse, this research aims at investigating the written narrative of a student of English and Portuguese Teaching Practicum from a Letters undergraduate Course at UFRJ (Federal University of Rio de Janeiro), in which she displays some of her remarkable experiences in the supervised apprenticeship at school. Through an analysis that considers the production of narrative as a discursive, dialogical and ideological process, this research may help us understand some of the experiences described in light of expectations and frustrations of the student in the supervised practicum course. It can also help us reflect upon strategies that can contribute to the education of future language teachers for acting in different areas of teaching and learning. This research points to the need for a dialogical construction of knowledge, for the development of bridges between the university and the school in order to cater for the open dialogue with all subjects involved in the teacher training process.

Keywords: Foreign Language Teaching Course, Teacher Education, Education, Narrative Studies, Discourse Analysis.

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## **1. Introduction**

A central objective of the research developed here is to produce reflections upon the work of teacher education developed in the course of Letters at the School of Education of the Federal University of Rio de Janeiro (UFRJ, henceforth). The analysis of these experiences can help us develop approaches related to the construction of teacher knowledge that constitutes a more comprehensive teacher education process, one of more humanistic character and one that enables undergraduates to better prepare themselves to deal with the challenges of our times and future.

This research has as one of its tenets the perception that teacher education is something that should be constantly reflected upon in interface with multiple teacher education contexts. As pointed by Goodwin (2000) and Bastos (2010), we understand that the process of teacher education can only occur in an interaction in which there is a dynamic and reflective collaboration. Undergraduate teacher education is then configured as a complex area that encompasses the construction of different knowledge necessary for teaching practice, so the narrative analysis brought here seeks to address different experiences of a student-teacher, trying to understand the different elements at work in her education process. In this research, we seek to better understand these experiences that work as major milestones in the teacher education process. A remarkable experience, however, cannot be understood outside its larger narrative, as posed by Josso (2004). Thus, a discursive and socio-interactional approach to narrative studies in interface with studies on teacher education, can contribute greatly to the development of a proposal for extensive training.

## **2. Teaching degree and supervised apprenticeship of language students at the College of Education at UFRJ.**

The undergraduate teaching degree in Languages at UFRJ is a partnership between the College of Letters and the School of Education, where the latter is responsible for the pedagogical training. This training consists of the study of several courses, including a Teaching Practicum component and supervised apprenticeship. In the practicum course, we work specifically with the Special Didactics of Foreign Languages and Brazilian Portuguese as a first language and their respective Practicums and supervised apprenticeship in regular schools.

## **3. Memoir as a narrative genre of personal experience.**

In this work, we deal with the memoir of formation, which is constituted of a written narrative about a particular process of constitution of someone's professional trajectory. In this research, the memoir is part of an extensive work on teacher education in which the memory of the teacher in training is valued and promoted as something important in his/her education, just as pointed out by Reis in previous research,

Memory plays an essential role in the construction of autobiography, since the narrator and protagonist not only "reconstructs" the facts of his/her life story, but also justifies them with meaning and coherence that provide a specific meaning to his/her existence in the world. (2012, p. 41)

The memoir is a discursive genre composed of narratives that have characteristics which approximate it to the canonical narrative as described, for example, by the seminal studies of Labov & Waletzky (1967) and Labov (1972). It is accurate to say that the memoir is composed of a chain of events that relate to a specific theme (the experience of a person in a supervised apprenticeship), since the author revisits several events that contribute to the construction of meaning of his/her trajectory within a particular profession. The memoir is constituted as an array of choices and constructions of meaning.

We consider that the production of narratives, either oral or written, is configured as a discursive, ideological and dialogical process (cf. Bakhtin [1929] 1997), which comprehends that its production is always related to social issues. It is therefore a text interwoven by social positions that are constructed from the perspective that the narrator has to account for the task of writing and reflection on his/her own experiences.

#### **4. Perspective of analysis**

This research can be characterized as a case study. We privilege narrative studies tenets to develop the analysis. In a previous research, Santos (2013, p. 24) had already pointed to the importance of narrative studies in developing understandings about various aspects of social life since one of the central elements in narrative studies is

(...) the perception that people use narrative not only to (re) construct past events, but, among other objectives, to ensure that such events are interpreted in accordance with the desired representations. We narrate so that the stories are appropriate for certain goals.

This work of (re)construction, made possible by the narrative, is a work to promote the memory of experience, and also it is a work of construction of the identities that the narrator wants to assign to him/herself and to those with whom s/he interacts. Thus, constructing narratives is a situated performance since, under Mishler's view (1999, p. xvi)

(...) narratives and other discourse genres, are social acts. In speaking, we perform our identity (Langellier, 1999) making a "move" in the field of social relationships (Labov, 1982). This pragmatic view of language highlights what we are doing as social actors in selecting and organizing the resources of language to tell our stories in particular ways that fit the occasion and that are appropriate for our specific intentions, audiences and contexts.

Supported by the perception brought by Mishler, our data analysis is based on a methodological approach that considers narrative studies as the study of action, and the study of an individual's performance and its circumstances.

#### **4.1 Context of the research**

We use material produced by a student-teacher (whom we shall call Beatriz) as one of the final requirements of the course of Teaching Practicum of Portuguese and English.

The Teaching Practicum is one of the final subjects of the course for the undergraduate degree in Letters and it is a subject offered by the School of Education, covering both weekly meetings with the professor responsible for the Teaching Practicum at the School of Education, as well as meetings with the classroom teacher in the schools.

It is important to note that the school in which she developed her apprenticeship is a state vocational school for preparing teachers at secondary level to work with children in primary schools in the city of Rio de Janeiro. The school has 85% of its student body made up of girls and 15% of boys. The report shows that the school has similar difficulties to those described by other students in other memoirs which reflect on their apprenticeship experiences in other contexts of Brazilian public school.

### **5 Analysis of a written narrative<sup>1</sup>**

We divide this section into four parts in which we analyze different excerpts of a single memoir. In our analysis we focused, mainly, on the question of expectations brought by the student-teacher in her memoir, her description of the coexistence with colleagues, students and teachers, her view of the work done in the classroom at school, her evaluation of the apprenticeship process and her perception of the realization (or not) of her initial expectations.

#### ***a) expectations and first impressions.***

In this section, we analyze two initial excerpts of the student-teacher memoir in which she first writes about her expectations at the apprenticeship at school and then with the contact with her mentor teacher at school.

#### **Excerpt 1: “Before beginning.”**

Before beginning my apprenticeship, my expectations about the experience were not very good. I had never attended a class, nor been in a public school before. I imagined I would find a school that would confirm the stereotype I had of public education; a precarious school, in a bad state, no limit and bad-behaved students, dissatisfied absent teachers. I found some of these elements and felt difficulty in dealing with them, but I can affirm a good part of those and of my preconceptions were put down from the start by their welcome.

In the passage above the narrator describes her expectations about the beginning of the apprenticeship, placing it under the congruence of the most common stereotypes reflected in our society and reconstructed in the micro context of discursive production (“*I imagined I would find a school that would confirm the stereotype I had of public education; a precarious school, in a bad state, no limit and bad-behaved students, dissatisfied absent teachers.*”). Beatriz recognizes her difficulty in reframing these stereotypes, but in repositioning them from the starting point element of the “welcome”, she initiates an important experience, which will help in her discursive construction of her initial professional positionings. This evaluation is important, so

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<sup>1</sup> We made no changes in the original text and, in order to provide anonymity, we assigned an alias for the narrator and omitted the names of institutions.

that Beatriz can start constructing new perspectives for her supervised apprenticeship. Her willingness to revise stereotypes seems already to provide for the construction of a new perspective on the apprenticeship, not one in that she already knows the outcome, but one in which she is still constructing meaning.

It is important to note here that in the micro context of writing, her statement about the “welcome” (“*but I can affirm a good part of those and of my preconceptions were put down from the start by their welcome*”), is extremely important to mark the initial turning point, and transformation of her perception, which is an interesting evidence of the narrator, who demonstrates her willingness to make the apprenticeship into a significant moment, and a benchmark for the construction of meanings and diverse reflective positionings that are still to come.

Her statement that her preconceptions were put down, is also important because it points to the final outcome of her memoir and shows how its textual construction is governed by its sense of ending (cf. Ricoeur, 1980, p. 180). We work here with the perception that, in the analysis of a narrative, we should perceive more than a sequence of events. In this regard, Mishler (2002, p. 98) has shown that, for example, in a narrative

“(…) the temporal order is not enough, especially if we want to make a greater distinction between sequences of events that are merely lists and sequences that are stories. That is, a narrative should be more than one thing after another.”

Another important element is that this claim is often in sharply contrast with the initial disposition with which many undergraduates arrive in our course: complaining and generally unwilling to undertake a course that demands time and attention for them to become teachers.

### **Excerpt 2: “English teacher vs. Portuguese teacher”.**

My contact with the English teacher was excellent. She was very understanding, flexible and friendly. She was always willing to learn something with us – trainees and to listen to what we had to say. She asked for our opinions for many times to solve some problems in the classroom and asked questions about the planning of lessons. I felt very satisfied I could help her. I realized that the apprenticeship did not have to be that boring moment in which we sit in the back of the room, making notes and then you home with the feeling that your presence there made no difference. The Portuguese teacher was always very helpful, but not as flexible and accessible as the English teacher. I believe that because the English teacher was almost as old as I was, it made it easier for me to get closer to her.

In the above excerpt, Beatriz thematizes her contact with her mentor teachers at school. Here, what stands out is the contrast between the English teacher and the Portuguese teacher. The student describes her relationship with the English teacher as satisfactory and positions the Portuguese teacher as being “*always very helpful, but not as flexible and accessible as the English teacher.*”

Beatriz evaluates the first contact as “excellent”; then she relates the professional contact of a personal identification (*She was very understanding, flexible and friendly*). She also features elements of collegiality (positioning her and the teacher as fellow teachers who learn together), even if she mitigates her initial position as an “apprentice”.

Then Beatriz evaluates this dual positioning, not only regarding the relationship between apprentice and teacher-mentor, but also with regard to her own apprenticeship (*I realized that the apprenticeship did not have to be that boring moment in which we sit in the back of the room, making notes and then you home with the feeling that your presence there made no difference*), redimensioning her previous conception of the apprenticeship from a new identity construction presented here.

She also reshapes the co-construction of positioning from the small age difference between herself and the English teacher mentor. Her positive evaluation of the age proximity demonstrates that she discursively constructs that a relationship with another person of the same generation is something that exerts a positive influence on the construction of a professional position that combines personal relationship and professional identity.

On the other hand, she positions herself being farther from the Portuguese teacher, (*“The Portuguese teacher was always very helpful, but not as flexible and accessible as the English teacher”*). Here, the question of personal relationship is constructed in a distance and the positioning is not similar to the previous one. It is worth adding that this is not an element that can be ignored, since it is the only reference to the Portuguese teacher in the whole memoir, showing a performing positioning towards the construction of a professional identity that leans towards the teaching of the English language.

**Excerpt 3: “The students scared me in the beginning.”**

The students scared me in the beginning. There was no limit for their behavior. They often disrespected the teachers and rules and regulations of the school about the uniform. As the girls wore skirts well above their knees, the boys’ ties disappeared. The language among students was full of swear words and name-callings.

The experience described reaches out to her former beliefs, which leads Beatriz to confront them with a reality that seems to confirm her initial predispositions. This confirmation, however, does not generate a naturalization of the negative aspect of the school; on the contrary, her narrative seems to point to an estrangement, a non-conformism with the reality that presents itself. Her initial strangeness (*“The students scared me in the beginning”*) does not block her; it instead takes her to an exercise of trying to understand the complex behavior of the students.

**b) The students.**

In this section, the narrator talks about her relationship with the students. Both the narrative construction of the relationship of the student-teacher with the school students, and her descriptions are characterized by being important elements for an

understanding of her experiences as an apprentice and her experience of professional training in a broader sense.

**Excerpt 1: “they respected me a lot.”**

Some teachers seemed pleased with their work and others did not. However, everyone complained about the behavior of the students. My contact with the students, unlike the one with teachers, was very good. They respected me a lot and I tried to answer questions that arose in class, but which, due to their shyness or the end of class time, were not clarified.

In the above excerpt, the student-teacher describes her contact with the students as being good and positions herself as a person who supplied them with information that was not provided by the teachers. In this construction, Beatriz takes for herself an autonomous and authorial positioning. The construction of her relationship with the students based on the mutual respect gives her “authority” in the context of the classroom, even if, institutionally, she was positioned as an apprentice.

**c) “the most remarkable situation in the school”**

**Excerpt 1 “The new students rebelled against the teacher”**

“The most remarkable situation in the school happened in the English class. The English teacher was new at the school and that was her first semester with the classes. The problem arose during the first test. The new students rebelled against the teacher when they realized there was no translation for the test questions. There was a lot confusion, including scenes of disrespect and swearing. The students attacked the teacher saying they didn’t know English and questioned how they could do a test only in English. Some shouted: “This is an absurd. How come? Now I’m gonna have to enroll in an English course to understand English at school. You kidding!”

In this extract, Beatriz describes the most remarkable moment of her teacher apprenticeship, a conflict in the classroom, between the English teacher and the students, due to an apparent change in the evaluation undertaken up to that moment. She uses both the reported speech (*The students attacked the teacher saying they didn’t know English and questioned how they could do a test only in English*) and the direct speech to give life to the voice of the students (“*This is an absurd. How come? Now I’m gonna have to enroll in an English course to understand English at school. You kidding!*”).

The conflict demonstrates a very complex issue about foreign language teaching in many schools in Brazil, which reflects the undervalued position of the foreign language in the curriculum of the schools. This is a fundamental issue of foreign language teacher education in our country, with complex, ideological, political, economical and educational background. It is worth stressing that these are common issues raised and reflected by several students enrolled in our courses at the School of Education, in memoirs, as well as in oral discussions in class.

**Excerpt 2: “there was no reason for such a lack of respect and politeness.”**

The coordinator received numerous complaints from the students and set up a meeting with the teacher to understand the situation and the problem that had been established. I was with the [English] teacher when the coordinator addressed [her] in the staff room referring to what had occurred. I defended the teacher confirming that there was no reason for such a lack of respect and politeness. The students had no reason to act that way, because, even if they say that they were accustomed to translations because that was how the teacher of the previous year used to work, every exercise and test proposed by the current teacher never showed translations and the students never complained about this fact (neither to the teacher nor to the coordinator). Additionally, all commands of the questions had been worked previously. Commands like “write true or false”, “answer the questions”, “complete”, “fill in the blanks” were much worked upon during previous exercises. I realized that the students wanted to destabilize the teacher and create turmoil. Unfortunately, they succeeded. The teacher was very upset with the reaction of the students and decided to take a radical and inflexible fighting stance, which ended up by intensifying the feeling of rebellion of the students.

Beatriz describes the intensification of the instituted conflict positionings, showing in detail the issues that led to the conflict of the actors (teacher and students) in that context. She shows how the situation intensifies, which makes the classroom to be framed as a battlefield (*“the students wanted to destabilize the teacher and create turmoil. Unfortunately, they succeeded.”*). The narrative describes how students positioned themselves in “rebellious”, which is antagonistic to the positions assumed by the teacher (*“The teacher was very upset with the reaction of the students”*).

In this excerpt, it is important the construction which the narrator makes of herself as someone who interacts with the coordinator in defense of the teacher (*“I defended the teacher confirming that there was no reason for such a lack of respect and politeness”*). This attitude demonstrates her construction as someone who is active in her processes of professional formation and that aligns herself with the perspective of the teacher and of the institution.

**Excerpt 3 “(...) it seemed we were entering a battlefield.”**

Every time we entered a class, in fact, it looked like we were entering a battlefield. The students didn't collaborate with anything, not even with silence or with a willingness to do the activities. I slowly talked to the students and explained the attitude of the teacher and questioned them. The coordinator then listened to the teacher and stood by her. I also talked with the teacher and told her that if she also kept that irreducible stance saying that she would never change and that they would have to get used to it, the students would rebel even more. It was necessary for her to initiate a position of conscientization of the students (if she really wanted to continue with the tests without translation). It was important to show that if they were able to perform an exercise without the aid of the translation of the sentence they would also be able to take the test.

In this extract, amid the conflict, Beatriz begins to construct to herself another positioning, an in-between space. When she describes herself talking to students and, later, also with the teacher, she constructs her action as conciliatory, trying to reframe the conflict and restore the order in the institutional location of the school sphere. She positions herself as an experienced professional who observes the events, reflects on the need for changing and acts to resolve the conflict.

#### **d “It was worth it!”**

In this last section, we analyze excerpts in which the author evaluates her experience at the apprenticeship at school. As a canonical element, the final chapter of a narrative seeks to bring back to the moment of production of writing a positioning that is often singularly positive about the experience on focus. The narrator here also takes this approach to construct a position in accordance to her expectations and reflections on the process of learning and apprenticeship.

We analyze the two extracts below jointly, since they seem to denote elements of the evaluation of the experience in a complementary way. The two passages bring, however, peculiarities. While in the first excerpt, the narrator evaluates the apprenticeship experience and how it became “rewarding”, in the following excerpt, she seems to adopt a more holistic perspective on the apprenticeship (“*The apprenticeship is a very valuable opportunity, because it is the moment we have to face the classroom with a different perspective*”), projecting the experience as something important for her professional future.

#### **Excerpt 1: “My experience in the apprenticeship was very gratifying”**

My experience in the apprenticeship was very gratifying and productive. I learned a lot with the teachers and also with the students. What I liked most was the sensation of being able to help and somehow make a difference in the teacher’s classroom. Still, in this sense, I could also undo certain myths and preconceptions regarding public schooling. The union of the students, and their sense of friendship called my attention.

#### **Excerpt 2: “The apprenticeship is a very valuable opportunity”**

The apprenticeship is a very valuable opportunity, because it is the moment we have to face the classroom with a different perspective. It is possible to analyze the relationship of the students from a different perspective and understand the environment of the classroom and its specificities which, sometimes, from a broad perspective, goes unnoticed.

These two excerpts have important evaluations from Beatriz, since she reflects on issues that she considers important for the development of the challenge that constitutes the teacher education and the construction of knowledge enabled by this experience. She constructs her apprenticeship as a space in which she had the opportunity to exercise her creativity to transform experiences and specific events (some negative) in some kind of formative learning for life. In this sense, the two extracts bring a new perspective on the experience constructed by Beatriz. They reflect an end already pointed out at the beginning of the story. They are also part of

the positionings constructed along the story for the existence of her own act of narrating her process of apprenticeship. It is the story in its configurational sense, as mentioned by Ricoeur (1980); it is the double arrow of the time Mishler (2002) as tells us; it is the reportability of experience with its outcome, as indicated by Labov (1972); it is the embodiment of the training, as points out by Goodwin (2000) and Bastos (2010).

## **6. Final considerations and limits of the present research**

By analyzing the experiences of a student-teacher in her apprenticeship through the narrative construction present in her memoir, we had the opportunity to see how she discursively constructs her own student-teacher identity amid different experiences of her supervised apprenticeship. We have seen that her experiences are constructed in order to give coherence to a formative process that makes sense to the reader, but mostly to herself.

In proposing the use of the memoir of teacher practicum as part of a project of initial teacher education and supervised apprenticeship, we realize that this hybrid genre reveals important contributions. It can provide a qualitative shift in teacher training, since it provides the student-teacher the reflection about the significant moments of this experience, while contributing to a more humanistic process of the teacher apprenticeship. The narrator brings into the training her own historicized perspective, her own identity positionings put into action, not only in the micro context of written production, but also constituted from the very performance at the macro institutional context of the shared action among the various actors. The memoir also provides the necessary reframing between theoretical reflection and reflection from the practice, as we could perceive from the analysis undertaken here.

The narrator was able to put into action a link between theory and practice, at different moments, when she reflects perceptively about the events reported and positionings constructed to solve the dilemmas of her expectations, stereotypes, beliefs, teacher-student relationship, conflicts and the very positioning of the teaching and learning of foreign languages in the space of the public school in Brazil.

In a much relevant way, the narrator demonstrated her own initial construction of identity and career choice in providing elements for reflection in action and about the action (cf. Schön, 2000) and positionings of change and social transformation (cf. Giroux, 1997). Her textual production leads us to the perception that the memoir of training is not just an interesting object of research to better understand the work of teacher training, but can be mainly an important tool in a teacher training that encompasses both practical (which refers to the content) as well as humanistic dimensions (referring to how to construct knowledge about the content) of the teaching profession.

As this paper is methodologically configured as a case study, the final considerations reported here should be considered from the perspective of the interpretative limits of this methodological apparatus. In this sense, it is important to emphasize that, although we present a comprehensive analyses, it should not be taken as the only interpretative possibility. Thus, this research has a procedural characteristic that

should be further developed in order to contemplate different data and categories of analysis.



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## ***Learning Skills in Journalistic Skepticism while Recognising Whistleblowers***

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### **Abstract**

This paper explains a didactic program of blending provocative teaching method with experiential learning - at third year of the *Bachelor of Journalism and Bachelor of Communication and Media Studies - University of Wollongong, Australia*. There are pedagogical imperatives today for developing the professional 'self' in respect to citizenship, journalistic values and practice. The challenge is to acknowledge ethics and principles of human rights, while simultaneously embracing the transforming online, open-source Internet technologies. This can be achieved through a learning combination that exposes students to 'provocative' counter news, often whistleblower generated, while setting experiential learning assignments to engage volunteer journalism sites and their aligned aspirational values. The approach first acknowledges Chomsky's propaganda model of news then it presents participants with a judicious and provocative news-flow with verifiable, current and yet alternative stories - otherwise misrepresented or omitted in mainstream news. Participants are then asked to write and publish news of their own, through the *Wikimedia Foundation* project, *Wikinews*. In association with regular 'editor' volunteers, *Wikinews* develops news-writing, increases appreciation of editorial processes and encourages respect for accuracy and due-diligence. Exposure to 'provocative news-flow' alerts participants to propaganda and assists in identifying actionable news stories. In combination, these processes connect the emerging journalist to a sense of belonging to a professional 'newsroom'. A network of volunteer practitioners, including their student colleagues and their tutor as 'chief of staff', may also develop a sustainable pool of future *Wikinews* contributors and accredited editors.

Keywords: pedagogical imperatives, *Wikinews*, Chomsky, provocative news-flow, newsroom, chief of staff, slotter, experiential learning.

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## Introduction

A University of Wollongong journalism subject, *Newsroom Practice*, offers learning in news writing through the open-source Internet site *Wikinews*. Like the quality mainstream newsrooms, *Wikinews* accuracy and writing-standards are rigorous. This *Newsroom Practice* learning process first involves a carefully selected and provocative news flow, being distributed via *Facebook* by the tutor (the chief-of-staff). The news flow provides ideas, angles and potential sources for quotation; from which students may then research, write and submit fresh stories for *Wiki*-reviewers who reject or publish, after thorough fact checking and newsworthiness determination.

This chief-of-staff generated news flow was conveyed via *Facebook*, over the last 3 years, because of its prominent thumbnail images and convenient summaries at the top of each story, which serve as leads for students' initial selection. These contrary, provocative and often whistle-blower generated initiators: consist of reliable information arising from mainstream news, verified photographs and video clips, *Wikileaks* documents, scientific research papers, court transcripts, source statements, freedom of information applications, and their responses.

Extreme caution is applied at this editorial node and in the subsequent newswriting. This is because Internet based verifiable news, contrary and provocative, from outside Australia, may be subject to court suppression orders, national security laws or other restrictions, within Australia. Careless posting of such stories on *Facebook*, may constitute a serious crime, punishable by jail (Cooper 2014). Given the risky nature in publishing such news items, they are likely to be poorly represented or omitted from mainstream news.

While *Newsroom Practice* students are bombarded with these clearly verifiable stories, they are also provided occasional sprinklings of material that has less reliable, even dubious veracity. This emphasises the necessity for thorough research and fact checking, which must be enacted before students embark on their actual news writing. Care is again applied at this point, as overly politicised news or dubious origin conspiracy theories are likely to leave students feeling they should defend pre-ordained positions and values, and this is counterproductive.

The daily leads (introductions) on the *Facebook* Timeline, provide a specific news frame, like reported rebel activity in Ukraine. Students then follow up on that story in detail in both *Russia Today* and the *New York Times*, or in the US based *Foreign Policy Magazine*. Students first check newsworthiness, then determine if there is conflict of fact, or whether omission or skew is evident. They then angle the story and write neutrally oriented fresh news: with balance, completeness and detachment - for posting up for review on *Wikinews*.

The process brings realisation of the ethical imperatives of accurate and verifiable news-writing. Students start to contextualise the role of mainstream news in international affairs. They begin to see propaganda for what it is and when confronted by obvious omissions from mainstream news services, they ask: why do mainstream news media fail to run these stories? Noam Chomsky's *Hegemony Or Survival*:

*America's Quest for Global Dominance* is used at this juncture, as an early benchmark in the learning schedule (Chomsky 2003).

The *Facebook* news flow delivers stories that are deliberately polarising, like the ever-worsening war in Syria. The news items are arranged to exemplify how news media disseminate propaganda in carefully constructed campaigns, helpful to elite interests and often on the path to war (Jones 2014). *Newsroom Practice* students are reminded that while the Internet provides world superpowers their global surveillance capability, it also provides voice and research capabilities for the second superpower – world public opinion (Chomsky 2003).

On this chief-of-staff generated *Facebook* Timeline, where even hackers may contribute, the student-citizen-journalists observe the editorial node and note the contrary news flow. Working in such a learning schedule, students develop a range of professional literacies and values, including those informing citizenship (Reece & Blackall 2007). By researching, writing and interacting with the tutor (chief-of-staff) and then with the *Wiki*-reviewers: students begin to habitually adhere to rigorous standards of accuracy, originality and source checking. Our previous research in the context of a television newsroom for high school students, also demonstrated that such a peer review and collegial process, develops multiple literacies and values that uphold ethical journalism and notions of citizenship (Blackall, Lockyer & Harper 2011).

For *Newsroom Practice*, the minimum assignment requirements are five news stories over thirteen weeks, all thoroughly researched and written for publication on *Wikinews* - a difficult task, because students must firstly negotiate the protocols of the open source networked site. Simultaneously, students must edit at least five colleagues' stories, with every edit being transparent on *Wikinews* 'History' - ideal for assessment purposes. The final combination of both the attempted, and the published stories, are posted with a 1000 word reflection on a blog.

### **Rationale - learning news production under emergency conditions**

The pedagogy in *Newsroom Practice* assumes that mainstream journalism is failing to expose the big deceptions of our time. Learning is situated in a newsroom, where the systematic behaviours and performance patterns of global newsroom production are evident. Such an enabling-environment positions students to interpret the political issues around framing in the mainstream news. The chief-of-staff *Facebook* feed is the central element for the fresh perspective on the 'must run' news imperatives, otherwise unreported, omitted or misrepresented in the mainstream. By choosing stories this way, in the public interest and ideally, beyond the propaganda interests of the power elite, students shape journalistic values and professional skills and credentials - as required by mainstream news agency employers.

To set the context of the emergency, students are recommended online films like *Shadows of Liberty*, which reveal the extent of news censorship, obfuscation and corporate control. *Shadows of Liberty* in particular, examines global corporate influence, of totalitarian dimension, which distorts journalism and compromises values in truth telling. Interviews with prominent journalists, activists and academics, show the dysfunctional nature of the English language news media. The documentary

asks a basic question: “why have we let a handful of powerful corporations write the news?” (Tremblay 2013).

In 2010, the G20 countries aimed to have effective legislation and policy by 2012, for the protection of whistle-blowers, a necessary measure for the free flow of information in democratic processes. This would provide safe and reliable avenues for whistle-blowers to report fraud, corruption and other illegal behaviour. The reality, however, is that new laws in national security and anti-terrorism, with non-disclosure provisions, are tending to override any attempts at whistle-blower protection. A case in point is Australia.

The series of bills enacted since September 11 2001, the culmination of which is the Anti-Terrorism Bill (No. 2) 2005, removes many of the freedoms and rights that Australians have for many years been able to take for granted. In particular, the detention and control orders degrade the importance of the role of formal trials and the production of credible evidence by the prosecution in the administration of justice in this country (Rix 2006).

In such a regime, “whistle-blower protection laws fail to meet international standards, and fall significantly short of best practices” (Wolfe et al, 2014). The future for press freedom is therefore most likely to be in an inverse relationship to the aspirations of the G20. Instead, national security measures will override considerations of democratic process, with secrecy becoming the norm (Blackall & Tenkate 2008). This means that many state initiated human rights violations, such as those carried out in Australian asylum seeker detention centres, will be impossible to expose. Similar trends are observable in most first-world English language nations. In 2014, *Newsroom Practice* students examined recently proposed Australian national security legislation, and they noted commentators’ saying it “is dangerously imprecise and does not take account of the public interest in any shape or form, . . . is a threat to freedom of information and a violation of international standards,” (Ismail 2014).

This chilling effect on journalism and transparency brings new pedagogical realities for journalism educators: we must encourage students to use new media platforms and provide journalistic information in the public interest. Such a strategy should also advocate for the return of traditional press freedoms, once enjoyed by citizens of Western democracies. In his analysis of a case study about the process of invigorating public opinion to counter corporate totalitarianism, Ahmed examined the ruling elite and its neoliberalism tendency to “press upon” the people: to preside over them, to influence, to convince, to propagandise, to force upon them social change to the advantage of multi-national corporations. Ahmed focused on the corporate power of Enron, which in 1992 ran the Indian Maharashtra State-Electricity-Board, known as the Dabhol Power Project. The venture was the largest in India’s corporate history.

The presence of power that “presses upon” does not negate the possibility of subaltern counter-politics. In fact, the presence of power that presses upon also gives rise to productive power, or the power to resist and transform (Foucault 1979). The power of those adversely affected by neoliberalism is dependent on their alliances, relations, networks and counterhegemonic discourses. The nexuses, alliances, social relations, accessibilities or networks that facilitate the subaltern counter-public (Fraser 1990) in creating a more transcendent and

universal politics (Harvey 1996) and empowering them to put up a viable challenge or alternative to neoliberalism, is captured relatively well by the idea of rescaling. This is because the vertical or hierarchical conceptualization of scale encapsulates a pragmatic understanding of power (Ahmed 2012).

Enron's production of spin was inevitable, for the purposes of framing the Dabhol Power Project to the corporation's advantage, but India's diverse news media industry can at times run contrary to corporate agendas. India's huge audiences and the competition amongst news media to attract them, delivers the potential for vigorous and independent journalism. This is a moment of power and an opportunity for more of the daily news decisions to be rendered in the name of neutrality and civil liberties. Ahmed argues that we must undertake a rescaling of public information: "through alliances, relations, networks and counter-hegemonic discourses". This, he says, is itself a process of empowerment. It is a moment when hegemonic discourses may be scrutinised with fresh perspectives; providing opportunities to shift the frame towards a freedom of expression that is underpinned by universal civil and human rights.

### **Framing**

Entman's cascade activating model of framing is useful here, where it is a given that the news frame is manipulated by the power elite. This is demonstrable, through the power elite's control of selected sources, its misusing quotes, data and footage, while hiding other information from view. A journalistic activism, coupled with meticulous accuracy, can be a strategy to help get students published, while simultaneously providing truthful and accurate information in the public interest. Framing theory proposes that the extent and rate of framing is proportional to inequity and power, which motivates the selection and highlighting of certain narratives over others. Therefore, journalism learning schedules must be designed so students are encouraged to make "connections among them [news narratives] so as to promote a particular interpretation, evaluation, and/or solution" (Entman 2004). In such a context, a truly free news media sources official information from government and multi-national corporations, while simultaneously balancing each news point with wide ranging views from the public. This enables the public to deliberate independently in democratic processes. Instead, and increasingly, news media narratives are political contests within pre-determined agenda setting news media frames (Entman 2004), many of which, after investigation, are found to be commercially oriented.

For journalism students, thinking about frames is useful when demystifying a range of news related information: across science stories, political stories, and stories about the media itself, or other key public institutions. 'Frames' situate the interpretative story-lines that will communicate the facts in an issue. Framing research can be used to explain how protagonists define certain issues in politically strategic ways. Framing is also a first step in determining the angle in a news story, and this may be done unconsciously. Once aware of this, journalists are able to consciously use framing to select the news of the day, and this may improve their independence and judgment, so they might be more responsive to a diverse range of public discourse. Frames can help simplify complexities, by weighing up certain details and news angles over others, to assist in determining why an issue is newsworthy and who or what might be responsible.

Nisbet (2012) acknowledges how shifting, or "breaking 'the frame' so to speak is very

difficult". For journalism education however, it is critical to present dynamic and challenging case studies that develop strong news judgment and values for independence and press freedom, necessary for skeptical and whistleblower generated journalism. Such values bring awareness of propaganda, while writing journalism that is encouraging of public dialogue, public interest and the exchange of perspectives.

The chief-of-staff *Facebook* feed provided a number of science related stories, that were absent from mainstream news, and these usually were sourced from scientific papers. Critical in science-based news-stories, are understandings on the principles of scientific method - the process of testing and retesting for validation.

. . . there has been a growing recognition that scientific knowledge alone does not compel public perceptions or policymaker decisions. Instead, these innovators understand that effective communication involves addressing an intended audience's values, interests, and worldviews (Nisbet 2012).

Students delving into science news-writing must understand that scientific conclusions crucially depend on verifying and repeating the experiment for the same results. This must include the successful simulation of recent observations, to test for validity. In finding a suitable pedagogical approach to these considerations, we need to hold that "science communication is no longer defined as a process of transmission, but rather as an active and ongoing conversation with a range of stakeholders", including journalists (Nisbet 2012).

The chief-of-staff *Facebook* Timeline, as discussed here, actively included a science frame and this was made available to a range of University of Wollongong journalism subjects. The Timeline is tuned to show how science related stories are misrepresented in news and current affairs. Subsequently, news stories are deconstructed in tutorials, so students notice well-trodden and easily approved storytelling templates where journalists depart from the required fact checking and triangulation.

A radio story broadcast by the *Australian Broadcasting Corporation* in 2012 carried the news trigger of a serious bacterial outbreak after floods in Queensland. Instead of a bacteriologist as the concluding expert source to the story's crisis point, a climate scientist is sourced instead, bringing a different frame to the conclusion, in a story about a looming public health emergency. The inaccuracy in the choice of this source is that climate change was not the cause of heavy rain in the La Niña event of 2012; rather the record floods were similar to the even wetter La Niña cycles in Australia in 1974, 1975 and 1976. In the interest of public health, and therefore public interest, this story should have concentrated the frame, and therefore the interviewed source, on leptospirosis and the cautionary public health procedures, instead of the irrelevant climate frame in the final section of the story.

RACHEL CARBONELL [ABC radio journalist]: With climate scientists predicting more extreme weather events, some experts *say* [SIC] outbreaks of leptospirosis are likely to become more of a problem. Philip Weinstein is professor of ecosystem health at the Barbara Hardy Institute at the University of South Australia.

PHILIP WEINSTEIN: We're likely to be seeing more and more of these events as more extreme climate events occur more frequently and as urban populations grow (Carbonell 2012).

Traditionally, free speech and journalism (with accuracy and impartiality) go hand in hand with the principles of transparency in Western democratic societies (Steel 2012). However increasingly, news media editorial decisions are under pressure with a range of likely editorial directions and truths, which leads to confusion. At the editorial node, journalists are more likely to be inaccurate and responsive to spin and hidden corporate directives (Schulte 2014). In such a climate, journalist's news decisions are likely to be cautious, conservative and self-serving for career survival, rather than for commitment to the ethical imperatives of accuracy and free speech.

Similarly misrepresented in mainstream news, and regularly conveyed to *Newsroom Practice* students, are stories on the extent of wealth being increasingly transferred to a handful of globally elite families. A case in point, and omitted from mainstream news, was the recent USA Senate Bill, 2277, directing the Agency for International Development to guarantee loans for the mining of oil and gas in the Ukraine.

Vice President Biden's son [Hunter] has become the head of the biggest fracking company in the Ukraine. And what's not usually known is that the armies from Kiev that are marching into the Eastern of Ukraine have been basically protecting the fracking equipment (Hudson & Desvarieux 2014).

In *Killing the Host: How Financial Parasites and Debt Bondage Destroy the Global Economy* (in publication for 2015), Michael Hudson, Professor of Economics at the University of Missouri, observes how the financial crises will continue unless there is complete overhaul of the global system. Inaction, he says, will increasingly enable elite families to get control of the most influential of the multinational corporations. This private sovereignty, which also presides over government, the news media and multi-national corporations generally, will ensure that inheritance is the only means by which power transmits from one generation to the next. This is now also being coupled with record salary rises for the highest earners, thus amplifying world income inequality and increasing poverty (Piketty 2013).

### **The chief of staff or 'slotter'**

When journalists determine the angle for news, or they omit a frame, their decisions are based on learnt values and these continue to shape journalistic practice. Such determinants 'govern each stage of the reporting and editing process' (Cotter 2010). Unless the professional practice in a news agency is impartial, with rigorous professional safeguards to maintain neutrality, it is likely that internal processes may at times produce poorly researched journalism that amounts to propaganda. A learning schedule designed to build decisive and skeptical 'coal-face' journalism, which aims to publish for *Wikinews*, holds pivotal the chief-of-staff active role at the early editorial node. The strategy aims to shift the usual frame on which stories receive the 'must-run' grading and which ones do not.

Clearly, this is an important point in newsroom decision-making, and the USA Federal Communications Commission thinks so. In 2013 the FCC announced it was

planning to place a federal agent inside newsrooms across the country and this prompted “media watchdogs to accuse the government of trying to restrict press freedom”.

The FCC first announced the plan, known as the 'Multi-Market Study of Critical Information Needs,' (CIN) last year. It presented vague notions about how FCC officials would observe “*the process by which stories are selected,*” including notions of “*perceived station bias*” and “*perceived responsiveness to underserved populations*” (Russia Today 2014)

When considering news production in the Propaganda Department (Xuan Chuan Bu) in P. R. China, or the methods of Stasi police in East Germany around 1974, students can note how ‘other professionals’ alongside journalists play pivotal roles within the editorial and gatekeeping processes. Today, newsrooms of many democratic nations are enduring cost cutting measures, which force lawyers and other professional associates from the usual editorial processes. This lack of experienced legal advice, that traditionally found ways to enable a story to run, now brings caution, even self-censorship - especially to those stories related to national security (Blackall 2013).

Similarly, bloggers without legal support or adequate professional preparation are also likely to be reactive and so risk libel, breach of national security laws, contempt and a raft of new laws restraining publication (Cooper 2014). Consequently, journalists, students and bloggers are likely to stay clear of these stories, for fear of prosecution or humiliation. This results in neglect of stories that may disagree with the dominant narrative, bringing attenuation and an overriding effect of non-disclosure and secrecy.

Boyer examined the role of news agency journalism, and specifically, its mechanics at this editorial node: “an increasingly important node in circuits of news communication across the world”. He studied a medium-sized news-agency office in Germany, focusing on ‘slotwork’, where one editor is responsible for coordinating incoming news streams and determining ‘must-run’ news.

The terms ‘slotter’ and ‘slotting’ are material metaphors themselves. They reference a pre-digital division of labour in newsmaking in which an editor distributed writing assignments by putting sheets of paper into wooden boxes, pigeonholes or ‘slots’. In print journalism this was a relatively low status form of editorial activity often lumped in with copyediting. And, in the digital era of print and broadcast journalism, ‘slotting’ has dwindled into a terminological archaism. But, in news agency journalism, the role took on greater significance because of the pressure to manage breaking news on a fast-time basis. Slotters operated as coordinating editors whose job it was to survey incoming news, to assign tasks to their shift’s writers, to edit their draft Meldungen (reports) and to send these out on the agency wire.

. . . slotwork exists in a complex of technologically - and organisationally enabled practices that is evolving between professional tradition and contemporary influence, between technological automaticity and human agency, between attention and distraction, between *O’ffentlichkeit* (publicity) and

market, between producer and client, between praxiological and mediological modes of understanding (Boyer 2011).

As discussed, this ‘slotwork’ with a contrary and strategic frame, established by referring to *contrasting sources*, enables students of *Newsroom Practice* to find alternative, yet truthful and verifiable news perspectives in international affairs. This also provides benchmarks for thinking about the forces at work that qualify and subvert impartiality. Simultaneously sourcing angles from either side of important world news stories across the agency spectrum, ranging from *Russia Today* to *The New York Times*, enables students to see that the news media depend heavily and uncritically on elite information sources that are most likely to be politically aligned.

In *The Birth of Tragedy*, Nietzsche wrote how contradiction is universal and absolute; it is within the developmental processes of everything. For *Wikinews* writing, in deciding what must run and what is excluded, contradiction in news is offered on *Facebook* so that it permeates the process, from beginning to end (Nietzsche 1872). Similarly, Mao Tse Tung’s *On Contradiction* (1937) discussed how paradox comprises and absorbs power from this totality of opposites. Such disunited, or dialectical, opposites drive the interdependence of the contradictory politics and so can be acknowledged in the interplay when learning the cognitive processes of decision making that determine news angles.

### **Whistle-blowers, value development and local contacts**

When students of *Newsroom Practice* were repeatedly exposed to news emanating from human rights advocates, and whistle-blowers, their appreciation of the role of The Fourth Estate was accelerated. Exposure to such stories stimulates value development, and can demonstrate how international stories may have potential to be written with local relevance. This ‘linking’ by way of the ‘slotter’, simply provides contacts, with opportunities to interview locally relevant sources. Of mild interest to mainstream news in 2014, except within the general news frame of illegality, were disclosures by Edward Snowden of massive government and corporate surveillance of the public by the NSA (Macaskill & Dance 2013). This brought the public realisation of the new global Orwellian reality (Katz 2014). Where possible, such international whistle-blower stories can be angled by the ‘Slotter’ and then saturated with local relevance, human interest and original reporting opportunities.

Locally angled human-interest news-writing builds self-esteem and interpersonal skills for students. The realities of local practice, through such organisational procedures, brings heterogeneity, instead of the global homogenisation that scholars generally say applies to mainstream news. Clausen (2003) suggests that globalised news production, is really an amalgam of localised inputs and production processes, which initially occur through framing and the organisational imperatives of local news production: hindrances, availability of sources for interview and the cultural practices that make up the brand of the particular news agency.

One instance of this localisation and human-interest angle for Wollongong based students of *Newsroom Practice*, was the ongoing story about *WikiLeaks* lawyer Jennifer Robinson, who was stopped in transit in 2012 at Heathrow (London), on the basis that she was on an “inhibited fly list”.

Upon arriving at Heathrow airport to catch a flight back to Australia, Jennifer Robinson tweeted "just delayed from checking in because I'm apparently "inhibited" – requiring approval from Australia House @dfat to travel." She was referring to the Australian Department of Foreign Affairs and Trade (Russia Today 2012).

The 'Slotter' (chief-of-staff tutor) introduced to students the idea of them conducting an email interview with the human rights activist Robinson, who was initially from the Wollongong region. Students were encouraged to contact and quote her, thus increasing proximity and currency in their stories and so the potential of their successful publishing. The Jennifer Robinson story continues to provide news-writing opportunities, especially on occasions when she returns and is interviewed by Australian mainstream news agencies (Jones 2014).

Another localised case study, with ongoing international ramifications, was provided to *Newsroom Practice* in 2014. The tragic disappearance of Malaysian Airlines flight MH370, also had a local Wollongong expert source, and students were encouraged to interview him with the view of publishing the news story on *Wikinews*. *The New York Times* wrote:

Adam Dolnik, a professor at the University of Wollongong in Australia who has studied terrorism in Southeast Asia and other parts of the world, said that, judging from the information disclosed so far, there was no evidence to suggest involvement by a terrorist organization (Bradsher & Buckley 2014).

Dolnik was regularly meeting with the 'Slotter' at the time, an arrangement that increased source agreeability and accessibility to students.

## Conclusion

Mainstream news agencies engender values through the day-today practice of news production, and these are essentially impacted through informal training, by way of emulation. Young professionals, as Levy puts it, are often 'enculturated' into the use of certain behaviours: of deception, of agenda setting as determined by safe and unchallenged writing, or by way of the lazy use of one source. These are all culturally inculcated in a gradual and experiential manner. "The situational pressures which characterize journalism, at least as it is structured today, are therefore likely to overwhelm the resources of character, no matter how good our education, no matter how virtuous our students" (Levy 2002). Journalism students therefore need habitual best practice in their learning schedules. This develops alongside multiple literacy abilities, skepticism with open-minded perspectives, and enables students to habitually function truthfully as they see that journalism should only be executed this way.

This also encourages a belief that Fourth Estate journalism requires adherence to higher principles of justice and may require occasional moments of civil disobedience to achieve such a standard (Kohlberg 1986). This is executed with cautionary strategies for reasons of survival in the workplace. For journalism, justice is the fundamental perspective through which competing claims around publishing truth are mediated. The *Wikinews* site structures accurate writing conventions as a process of

this justice resolution, and the process is transparent in the online 'History'. Such a framework, like the *Wikinews* site, is based on a conception of justice and is linked to codes of ethics that are underpinned by international covenants on civil and human rights.



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## **Educational Practice and Professional Identity Among Volunteer Correctional Educators: Becoming a Teacher Behind Bars**

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### **Abstract**

This case study examines the experiences of eight volunteer educators working in a rural county jail in the northeastern United States of America (U.S.). More specifically, it explores the challenge of developing a critical educational practice and nascent professional identity in a context otherwise alien to them and on the 'borderlands' of contemporary educational practice.

It is well-documented that while the U.S. is home to only five percent of the world's population, it houses some 25% of the planet's inmates (Ratigan, 2013). And while the challenges posed by the U.S. corrections system are vast and somewhat unique, the challenge of creating and sustaining rehabilitative programs in a largely punitive 'correctional' environment remains a global concern.

To that end, this case study, utilizes in-depth interviews, participant journals, and classroom observations to explore the experiences of eight volunteer teachers working in a rural county jail in southwestern Pennsylvania. County facilities provide a unique site for this work—facilities where relatively short lengths of incarceration and limited opportunities for support create complex educational challenges. These challenges (in the areas of second language instruction, basic literacy, high school equivalency preparation, and career planning) are often addressed by local volunteer educators who, while committed, typically struggle to negotiate their educative roles in a context offering little practical, theoretical, or collegial support.

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## Background

Over the past thirty years, the U.S. has developed a ‘culture of incarceration’ (Wilson, 2014, p. 1). From 1980 through 2008, the U.S. prison population grew from some 500,000 to 2.3 million (*NAACP Criminal Justice Fact Sheet*, n.d., para. 1). Prisoners are housed in a system of both federal and state facilities (determined by the type of crime committed, i.e., a federal or state offense) which are typically divided according to level of security (minimum security to maximum security facilities) based on the likelihood of inmate violence and attempted escape (Thomas & Thomas, 2008, p. 12).

In addition to these typically large facilities housing inmates sentenced to significant periods of incarceration (greater than two years), there are also a multitude of county jails typically overseen by local government officials and housing inmates either 1) convicted of offenses carrying short-term sentences (less than two years) or 2) awaiting trial and subsequent sentencing. In large, urban areas, these facilities can appear similar in size and scope to state prisons; nevertheless, there are also numerous county jails in rural locations that house smaller populations and struggle with the resources to offer their inmates the educational and counselling services necessary to facilitate their successful transition back into the community.

In the Commonwealth of Pennsylvania, there are 44 jails in rural counties (Zajac & Kowalski, 2012, p. 5). From 2004 to 2010, these facilities saw a four percent increase in their overall population, with an annual average total population for all rural jails of just over 7,500—a group that was overwhelmingly ‘young, white and male’ (p. 4).

During the same period, some 43% (19) of these rural jails engaged in some form of large capital improvement or restoration project (p. 4). This was not only to address the need for improvement in aging facilities, but also as a response to the increase in inmate populations noted earlier. As a result, since 2009, state prisons have transferred hundreds of inmates to rural county jails to relieve their own population strain, thereby providing additional funds to support county jail capital expenditures. Furthermore, many county facilities have met criteria to house inmates incarcerated by the U.S. Department of Homeland Security, many of whom have entered the U.S. illegally and are awaiting deportation.

The facility serving as the site for this study meets many of the general characteristics of rural county jails noted above, principally housing a mix of male and female inmates incarcerated for relatively short periods of time. Furthermore, the county recently engaged in a major capital investment, constructing a new facility on the outskirts of the county seat, allowing it to house inmates from a nearby state correctional facility. In key variables (such as staff-to-inmate and corrections officer-to-inmate ratios, budget, and inmate population), the site is typical of other rural county jails in the Commonwealth.

## Education in Rural County Jails

At the state and federal level, where inmates are incarcerated for longer periods of time, both resources and oversight are more abundant and correctional education is typically well integrated into the fabric of the correctional facility (although its usefulness and capacity continue to be debated). Nevertheless, at the county level,

educators face specific challenges that typically marginalize their work in favour of more punitive measures.

Educational programming at rural county jails (GED preparation, adult basic education, special education, general education courses, or specific vocational training) is typically offered through local school districts and/or intermediate units (Zajac & Kowalski, 2012, p.17). While the facility may have full-time personnel responsible for educational program oversight, actual instruction is generally carried out by non-prison staff and various volunteers. Such is the case at the site of this study.

In this case study, volunteers worked with male and female inmates, teaching in both gender-segregated and gender-mixed classes. Classes focused primarily on basic skills in reading and mathematics, with some volunteers incorporating this work into a career planning curriculum and others explicitly preparing their students for the General Educational Development (GED) test.

Classes were offered for two hours, twice per week, over a three month period using a traditional classroom arrangement with rowed seats and a white board at the front of the class. Students were not permitted to use electronic devices of any kind, including computers or calculators, and items such as pencils and paper were closely monitored and accounted for.

### **Teacher Identity and Communities of Practice**

Smit, Fitz, and Mabalane (2010) define identity as ‘lived experience in the context of educational change’ (p. 1). As such, identity is constructed within the various contexts that make up both professional and personal life. As noted by Smit, Fitz, and Mabalane (2010), ‘identity is negotiated, shifting and ambiguous, the result of culturally available meaning and the open-ended power-laden enactment of those meanings in everyday situations’ (p. 95).

While recent work has addressed professional identity development among teachers in traditional settings (Gee, 2001; Sachs, 2001; Evans, 2002; Marsh, 2003; Beauchamp & Thomas, 2009; Smit, Fritz, & Mabalane, 2010) there have been few explicit examinations of teacher professional identity in correctional settings (Zaro, 2007; Geraci, 2008). Various studies have documented the reflections of new correctional educators (Cole, 2001; Olcott, 2004; Muth, 2008) or discussed identity from the framework of professional development programming (McGee & Wolford, 1998; Matthew, Clark, & Schoenfeld, 2009), but little has been said regarding the more nuanced interactions of teachers working in jails and prisons. Communities of practice social learning theory provides a useful framework for better understanding the complex nature of learning and identity development inherent in the interactions of those teaching and learning behind bars.

#### *Communities of Practice*

As noted above, social learning theory provides a helpful lens through which we might better understand the ‘socially embedded nature of learning—insights that, in

turn, can be systematically utilized to enhance adult learning in various social contexts' (Merriam, Courtenay & Baumgartner, 2003, p. 171).

One such social learning framework, the notion of communities of practice, was first presented by Lave and Wenger (1991) and popularized in the areas of business and industry. 'Communities of practice are groups of people who share a concern or a passion for something they do and learn how to do it better as they interact regularly' (Wenger, n.d., p. 1). In such groupings, learning is often not the intent, but results as an incidental part of the groups' interactions.

In addition, such socially imbedded learning serves as the basis of identity construction. This appears very much the case in the teaching and learning process where practices are profoundly embedded within specific contextual and historical settings.

Three aspects of Wenger's social learning framework can shed light on the process of identity development as an outcome of social learning.

The first is participation. Wenger notes that learning 'takes place through our engagement in culture and history. Through these local actions and interactions, learning reproduces and transforms the social structure in which it takes place' (Wenger, 1998, p. 13). Such a process includes engagement in the practices of communities and 'constructing identities in relation to these communities' (p. 151).

The second is meaning-making. Participation in communities requires the possibility of mutual recognition among members—the ability 'to recognize something of themselves in each other' (p. 56)—and mutual meaning-making—the social negotiation of meaning that 'is at once historical and dynamic, contextual and unique' (p. 54) and that makes our individual and collective lives meaningful. It is in this mutuality that participation becomes a source for identity development.

And last is reification, or 'the process of giving form to our experiences' (p. 58) through the development of 'tools, symbols, stories, terms and concepts' (p. 59). Like participation, reification is both product and process—a thing that shapes and is shaped by the social interactions inherent in communities.

According to Wenger, communities of practice share:

**A Domain** - Communities of practice are not simple affiliations—clubs or networks of friends—but require a shared domain of interest to which members specifically identify. As a result, this interest 'implies a commitment to the domain, and therefore a shared competence that distinguishes members from other people' (p. 2).

**A Community** - As members are pursuing competence within their domain, they engage with one another, sharing information, collaborating and discussing their mutual pursuit. These relationships enable and encourage learning.

**A Practice** - Communities of practice are not simply 'communities of interest'. Members are engaged in developing 'a shared repertoire of resources: experiences,

stories, tools, ways of addressing recurring problems—in short, a shared practice’ (p. 2).

Wenger makes clear that practice involves ‘doing in a historical and social context that gives structure and meaning to what we do’ (1998, p. 47). As such, it is emergent, involving the whole person and not limited to ‘traditional dichotomies that divide acting from knowing, manual from mental, concrete from abstract’ (p. 47).

## **Methods**

As noted earlier, this case study utilizes in-depth interviews, participant journals, and classroom observations to explore the experiences of eight volunteer teachers working in a rural county jail in southwestern Pennsylvania. These volunteers were all participants in a program coordinated by a local school district during one of the last three years (2011-2012, 2012-2013, and 2013-2014). Of the eight, 63% were white females, 25% were black males, with a single black female volunteer. Ages ranged from 23-35 and all had completed their bachelor’s degree (although none were in education).

As noted earlier, data were collected through volunteer journals, participant observations, and debriefing sessions, with follow-up interviews held with each of the participants in fall 2013 and spring 2014. Where possible, interviews were audio recorded, transcribed, and analyzed using the constant comparative method (Glaser & Strauss, 1967; Strauss & Corbin 1998). Participant journals (as transcripts of their reflections) and observation data were assessed in much the same way, weaving the three data sources into a thematic examination of participants’ experiences teaching in a correctional setting.

## **Findings**

The process noted above resulted in the emergence of four themes relevant to teacher educational practice and professional identity formation among the study’s volunteers.

### *Experience and Expectation*

None of the eight participants had experience working or teaching in a correctional facility. Nevertheless, all had engaged in some form of non-formal educational practice, ranging from pastoral work to corporate training and development.

From the outset, however, several of the participants perceived that these past experiences were ‘not relevant’ to their correctional work. All indicated a feeling of unpreparedness that they perceived was affirmed by conversations with supervisory staff from the public schools and prison personnel. Said one volunteer educator, ‘I felt like teaching in the jail was something completely new, and it was. But the message was that I needed to keep my guard up; that my students were unlike anything I’d ever experienced and that I couldn’t understand it. That my prior teaching just wasn’t going to be anything like this’.

Moreover, their expectations were profoundly shaped by the current crop of reality television shows that depict prisons as highly violent, extremely dangerous contexts

for teachers and rehabilitative staff. And while county facilities do, indeed, house violent and dangerous inmates, the majority are incarcerated for non-violent offences with all of those participating in educational programs earning their inclusion through good behavior over a period of time. Participants noted that they rarely interacted with prison rehabilitative staff or the administrators responsible for this work. Their primary point of contact was security personnel who only reinforced the perception of looming danger and distrust. Said one participant, 'I admit that I love shows like *Lock-up and Jail*. And that was really what I thought the jail was going to be like. And I think the CO's [corrections officers] must like those shows too since they seem to act a lot like the guards I see on TV. It's really contagious...that feeling of danger. But after a while, you see that the students aren't much different than anyone else—they just got caught. But the sense of danger is hard to leave behind...even in class'.

### *Mixed Messages*

There was also a sense of confusion among participants concerning where their focus should be while working in the facility. Some of this came as a result of the orientation process and the mixed messages sent during what was a brief but powerful process of orientation.

Both the school district and the jail conducted their own orientations—each lasting approximately one hour. As would be expected, school personnel focused more on pedagogical and interpersonal issues (keeping lessons focused, maintaining professional distance with students, utilizing the white board to provide clear examples). Jail personnel, on the other hand, focused almost exclusively on the facility and its processes (procedures for entering and exiting the facility, how to call for assistance in the case of an emergency, proper attire and maintaining safe/appropriate distances with students).

The result was that many volunteers left with a strong perception that they needed to be extremely careful in their work—careful of their physical safety, careful to not alienate or 'set off' their students, careful not to expect too much given their students' short sentences and limited abilities. Said one participant, 'I went into this because I really felt like I could help someone see their own abilities and possibilities. What I heard was that I couldn't trust anyone and they were only killing time. The messages were really mixed—these people need a chance...but they'll likely be back here anyway'.

### *Goals and Objectives*

As a result, the two broad goals mentioned by all participants as their primary reasons for engaging in correctional education—to help change students' perceptions of themselves as learners, and to stretch their own skills and abilities as teachers—were left unchallenged and exchanged for modest programmatic objectives and the important but unsatisfying outcome that everyone went home safe and prison processes were undisturbed. The result was that many of the participants found the experience powerful, but not profoundly so.

'I'd volunteer again,' said one participant, 'but not at this jail. Maybe it's the same everywhere but here everyone seemed most concerned with things completely

unrelated to the learning...things like what we wore, how we stood, the stories we told. I understand the need for control, but for me, teaching is about having a connection to the students as well, and what that was supposed to look like was hard to understand’.

### *Power and Control*

Furthermore, all of these themes were experienced under the ever-present specter of issues related to power and control—over curriculum, classroom management, physical appearance and behavior, and expectation. Participants universally expressed that they believed their teaching abilities remained constricted by both spoken and unspoken forms of control. Said one, ‘just coming in the place lets you know you’re not in a normal situation...I get that. But you have to put a great deal of effort into making it feel normal—relaxed, collegial, friendly even. Even the inmates can’t believe that there’s not something in it for me other than the experience. Everyone seems unwilling to take a flier and really commit. Past failures...past mistakes...not sure what it is but everyone’s kind of holding back...or being held back’.

This sense of power and control is clearly related to other themes identified in this work; nevertheless, it seems significant enough to explicitly note. While the very nature of jails is control, the correctional classroom seems a place where a conscious effort should be made to minimize displays of power and their subsequent impact. Furthermore, this effort is essential to the development of a critical teaching practice—a process that appears to be impeded by the priorities expressed in most (if not all) correctional settings.

### **Discussion and Recommendations**

As was mentioned earlier, the complexity of county jails creates some unique challenges for correctional educators—short periods of incarceration mean that students come and go relatively quickly; the economics of corrections makes the housing of state inmates (generally convicted of more serious crimes and facing longer sentences) and federal prisoners (typically illegal aliens awaiting deportation) something many county facilities have embraced.

In addition, rural county jail administrators and educators have shared with me their sense that the rural residents they serve do not see the rehabilitation of inmates as the facilities’ primary role. Rather, the focus remains punitive, with incarceration a form of retribution for criminal behavior.

Lastly, the site for this research does not include any professional staff exclusively responsible for inmate education—basic or otherwise. While explained-away as being economically infeasible, it also speaks to a larger challenge faced by correctional educators worldwide—the challenge of developing correctional education into a viable profession, valued by the system’s myriad constituents and the public at large.

When examining the themes expressed in participant interviews, journals, and actions through the lens of communities of practice, a recognizable ‘practice’ seems evident;

nevertheless the field's domain and community are difficult to identify. Participants expressed little connection to a broader group of like-minded educators who could foster the type of connection inherent in a domain and necessary for the development of a strong professional identity. This is not to say that correctional educators have not and cannot create communities of practice, but that rural county jails present specific educational challenges that make their creation difficult—particularly for those serving in volunteer capacities. These challenges include the part-time nature of educational work in county facilities, the geographic remoteness of rural county jails, and the transience of the prison population.

To facilitate the development of a more robust domain and vibrant educational community in such a context, groups providing educational services must better utilize existing professional organizations, exploit aspects of social media, and integrate themselves more intimately into local non-profit and governmental networks to develop sites for shared information, creative collaborations, advocacy initiatives, and the development of a unique and recognizable competence.

Such work will require that participants negotiate both subject competency and a critical educational practice that recognizes and challenges repressive attitudes, policies, and practices restricting educational opportunities and limiting teacher creativity in correctional settings.

Professional educators working in correctional settings (i.e., full-time correctional educators or volunteers who work as professional educators in non-correctional settings) often find the punitive, controlling environment of prison a challenge to their identity as a caring teacher whose practice is intimately linked to creating and sustaining close relationships with their students (Geraci, 2008). In these instances, the challenges noted above arise in the face of established collegial relationships, involvement with education-related social networks, affiliations with professional organizations, and a strong sense of what it means to be a teacher and mentor. But in rural county facilities, where well-intentioned volunteers often serve as a primary resource as classroom instructors, these supports typically do not exist and must be cultivated and supported by jail administrators and educational program coordinators alike—support that will ultimately result in greater commitment among volunteer educators and more creative, productive, successful educational programs.

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***Collaborative Becoming: Engaging in 'Guided Reflexivity' to Develop Teaching Practices in the Post Compulsory Education and Training (PCET) Sector***

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**Abstract**

Based on the journeys of transformation towards becoming teaching practitioners in the Post Compulsory Education and Training (PCET) sector, this paper discusses ways in which interactions between trainee teachers and established teaching community members may be utilised as opportunities for collaboration and development. Beginning with a brief critical reflection on trainees' accounts of their experiences during placement training, which show trainees experiencing marginalization, blocking and unsolicited interventions at the hands of established community members, I discuss the tensions of being situated temporarily and as novice within an established community of practice. I demonstrate that while situated as occupying roles of both learner and tutor simultaneously, trainees' emergent teaching identities are 'pressed' between conflicting demands and expectations. I argue that such negative experiences may be used positively to support development through a model for practice that I introduce as 'guided reflexivity'. Central to guided reflexivity are shared explorations of possibilities for developing teaching practices through collaborative reflections. These are formulated through mutually challenging but, supportive conversations between established teaching staff and trainee teachers. This approach shifts the sole responsibility for supporting trainees becoming members of, and belonging to, specialist teaching communities from designated mentors; it has the potential for crossing institutional boundaries and creating holistic cultures of collaborative professional development.

Keywords: (Reflection, Reflexive Practice, Teacher Education)

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## Introduction

Increasingly, it has become incumbent on teacher educators in Post Compulsory Education and Training (PCET) to support trainees towards developing 'excellent' practices in preparation for employment in the sector. About half of the Initial Teacher Training (ITT) curriculum involves trainees negotiating and engaging in teaching practices in placement communities. Situated throughout the PCET community, placement training is intended to support trainees to develop their own teaching style and to become familiar with community practices. Placement training provides openings beyond the simulated experiences of micro-teaching in teacher education classrooms; it offers trainees work-based experiences. In the context of working teaching and training communities, placement practices provide trainees with opportunities to test the application of skills and theories discussed in ITT classrooms. In this respect, placements provide spaces where theory-practice and practice-theory dualities are mediated, negotiated and may be co-constructed with established teaching community members. To facilitate these work-based development opportunities, teacher educators rely on the communities offering placements to identify staff designated as 'mentor' to provide support and guidance for trainees.

Currently, post-compulsory sector literature relating to ITT placement practices tends to focus on roles, activities and relationships with and between mentors and trainees (Cunningham 2007; Lawy and Tedder 2009; Cullimore and Simmons 2010). While studies such as Lawy and Tedder's (2009), investigated approaches to mentoring and trainee-mentor relationships, roles and activities, less is known about the remainder of placement training experiences; those parts where mentors are not necessarily present and trainees negotiate their own course through placement community practices with other, established community members. In this paper, drawing on some findings of a qualitative study that explored trainees' experiences during placement training (see Jackson 2012), I introduce a conceptual model of 'guided reflexivity'. I argue that interactions between established community members and trainees present development possibilities for both trainees and established placement community members; engaging in guided reflexivity would enhance development opportunities made available through placement interactions.

The term 'established community member' is used to identify placement community members that are not designated mentors. Established community members occupy a range of roles and are not always or necessarily tutors; they can be administrators, support or managerial staff: anyone (other than a mentor) established within the placement community that trainees interact with. The use of this term avoids sexist connotations of the term 'mastery' used by Lave and Wenger (1991 p.94) and broadens its scope of to encompass all placement community staff, irrespective of their seniority within the community, expertise, role or length of service. In my research, established community members were found to be impactful figures responsible, though not necessarily deliberately, for shaping the way trainees negotiated placement practices. For some trainees they provided sole points of contact with the placement community – more so than mentors. They were shown to be sources of information regarding institutional pedagogies, structures and cultures, as well as providing performative directions during teaching delivery and practices.

Despite being influential in trainees' journeys towards becoming and belonging to the community of PCET practitioners, the significance of interactions between established community members and trainees passes largely unremarked in ITT curricula. Teacher education and professional standards pay little attention to the importance of such interactions. Yet, as my research has shown, interactions with established community members are pivotal experiences and for some trainees they overshadow placement experiences in an unhelpful way. This is not to say that all engagements with established community members are adverse, nor do I suggest that established community members approach trainee interactions with negative intentions. Rather, my research has shown the outcome of such interactions to be reflected on by trainees in a potentially destructive light. Trainees' reflections indicate that by being unguided in how to respond, reflect and react to seemingly unsupportive, obstructive and demeaning interactions with established community members, opportunities for developing competence are being missed. In this paper, I argue that with some different thinking there are opportunities to utilise trainee and established community member interactions positively. By working collaboratively and reflexively both trainees and established community members have opportunities to create learning and developmental bridges. These bridges serve to support individuals to cross borderlands between being and becoming teaching practitioners, in a mutually beneficial way.

### **Outline of the research**

The research was carried out across four cohorts of trainee teachers undertaking Initial Teacher Training (ITT) in the Post Compulsory Education and Training (PCET). Located in the South West of England, the ITT programme was delivered by a Further Education (FE) college validated by a partner University. Data was generated from information provided by women trainees through their private personal journals and follow-up interviews. Participants were training to teach in a wide range of Lifelong Learning and Skills (LLS) sector practices such as, FE, Higher Education (HE), Adult and Community Education and Work Based Training.

In an effort to reduce the influence of (my) researcher's voice on information collected, a narrative reflective approach that utilised individual personal journals for the primary sources of information was adopted. Private journals offer a means of accessing individual's personal reflections yet, despite the opportunity for rich insights (Chambers 2003; Chase 2005), this was a risky strategy. From the outset, the approach meant that the quantity, nature and quality of information contained within forthcoming journals was unknown; therefore utility and usability of content was not guaranteed. Participating trainees had not received prior guidance regarding journal keeping. This was a deliberate choice on part to reflect feminist methodologies that advocate enabling individuals' voices to be heard (see Schutz 1970; Sá 200; Ramazanoğlu and Holland 2002; Hesse-Biber and Leckenby 2004; Keating 2005). I was aware of the limitations in adopting such an approach and cognisant that private journals would only provide snapshots of engagements in placement training; that these would relate to specific contexts and would not necessarily provide a full picture (Cohen et al 2000; Punch 2009). Therefore, trends and threads of information from journals were explored further by way of follow-up interviews. This secondary data collection method took place post analysis of journal entries and served to unpick

some of the personal meanings that were being made from experiences recorded and reflected in the private journals.

Participants self-selected from within ITT cohorts after attending an introductory session to introduce the research project. Additional one- to-one meetings with volunteers were undertaken for the purposes of discussing details, gaining consent and addressing emergent ethical issues. This resulted in 18 journals being volunteered for analysis. Post journal analysis, 12 journal volunteers took part in follow-up interviews. Participant names were changed for the purposes of reporting and dissemination.

### **Situating placement interactions**

Within the scope of this paper the terms competence and competencies are used to reflect Wenger's (1998) notion of developing expertise and Rogoff's (1990, 1993; 2008) concept of 'participatory appropriation' (p.65), where, as a result of experiences in practice, individuals transform. Transformations are situated as active processes of change from which, individuals take forward new knowledge, new skills and understanding to future practices. Thus, in this sense, competence reflects a shifting personal position, one that is transient and transforming, emergent through collective actions, negotiation and new understanding: personal skills, knowledge and expertise are developed through practice with others and, as individuals move deeper into practice, so competence develops.

Taking forward these notions of competence I propose critical reflections and reflexivity as ways of utilising participatory experiences to support identity transformations towards becoming community members. Engaging reflexively, as Bolton (2005) argues, offers a way of supporting personal transformation (of teaching identities) through the appropriation of experiences by examining those experiences from different perspectives. Bolton describes reflexivity as, 'making aspects of the self strange' (2005 p.10). This approach (to reflection) goes some way towards overcoming current technical rational methodologies that have hijacked for their own ends practices of reflecting-in, -on and -for actions, as advocated by Schön (1987). The assimilation of reflective practices into standardized protocols to be monitored, measured and assessed was not unanticipated. Parker (1997) noted that through acts of legerdemain, dominant discourses would swallow reflective practices, which would serve to render reflective practices as critical conversations 'mute' (p.30). In 2014, these warnings from Parker concerning the mediocritisation of reflective practices have been realised. The formalisation and thus reduction of reflective practice to simple statements describing one's experiences are evident in the requirements of current ITT curricula, performative standards (ET Foundation 2014) and Ofsted inspections (Ofsted 2014). Therefore, the benefits of critical reflections that were identified by Boud et al (1985) and Schön (1987; 1991; 2002) and that have been developed by others (such as Brookfield 1995; Loughran 1996; Bleakley 1999; Larrivee 2000) have been reduced to a set of performative actions. Thus, opportunities for using reflexive practices, such as those described by Bolton (2005; 2010) are not being utilised effectively in teacher education.

Yet, employing reflexive practices in a guided way could support trainees and established community members in negotiating interactions. My research (Jackson 2012), identified two kinds of experience, knowledge, skills and understanding at work in the trainee-established community member relationship. Both parties have expertise albeit differently situated. Trainees have currency in their teaching subject specialism, which may be derived from experiences within practices outside of the academy. They also have subject knowledge, which affords them a degree of competence in the specialist subject; sometimes this is new knowledge from recent studies both relating to the subject specialism and in teaching, sometimes it is work-based and sometimes it is a combination of recent study and work-practice experiences. Established placement community members on the other hand, have contemporary experiences linked to working within the institution; most have current experiences of teaching within that community but, some have experiences that reflect the administration, management and resourcing of teaching community practices. In addition, both parties have levels of qualifications that afford eligibility to teach their subject. Therefore, between both parties there are points of difference in individual's competence. These reflect competences relating to knowing about and practising the subject and competences developed from knowing about (sometimes practising) and teaching the subject.

Albeit at different levels of expertise and practice, this means that both trainees and established community members have opportunities for developing competence through their activities and interactions in practice with one another. However, as my research showed, such opportunities are not being recognised or acted on. Therefore, I propose 'guided reflexivity' as a means of identifying, acting within and reflecting on trainee and established community member practices. Guided reflexivity works conceptually and practically to develop competence through collaborative reflexions between trainees and established community members.

### **Making a case for Guided Reflexivity**

The research findings showed trainees in different sectors shared similar experiences that centred on interactions with established community members. Rather than positive experiences through 'legitimate peripheral participation' (Wenger 1998 p.100; also Lave and Wenger 1991) trainees' inclusions in community practices were marginal and dependent on relationships and interactions with established community members. Regardless of personal aims and expectations, trainees were unable to traverse 'inbound trajectories' as Wenger (1998 p. 154) describes. Despite being assigned a mentor from within the placement community and being afforded access to the community's practices, trainees' experiences of practice were marginal rather than peripheral. Although trainees' identities as becoming teaching practitioners were transforming as a result of their experiences of placement practices, without the prospect of becoming full members of the place community, one that would eventually engage fully in the (placement) community practices, trainees were marginalized. Opportunities for establishing inbound trajectories were blocked. For example,

## November

I feel a bit stupid because I don't have a key to the classroom I'm using so I have to hang around in the corridor until someone comes down with it. I can't go to the staffroom to get it because I haven't got a key to get in there either.

(Trisha)

## January

I have asked for, on numerous occasions, the female staff toilet key... After the weekend I went to see my mentor. I asked him if I could have a key to the female toilets & he said, "you only have to ask & someone will open the door for you". Find a male member of staff with a key and tell them that I need the toilet? I will not lower myself to that!

(Sarah)

## February

I asked Kerry [*established staff member*] about getting some photocopying done to hand out to the group. Kerry said that I would need a code and that she could not give me that code because the department was already massively over budget = the result I had to pay to get all the photocopying done myself...

(Michelle)

The journal examples (above) illustrate some of the kinds of blockages trainees experienced. These experiences highlight some of the murky pathways that criss-cross trainees' journeys towards becoming PCET teaching practitioners. From a developmental perspective, such examples show that becoming a teaching practitioner and experiencing teaching practices requires more than being enabled to attend the physical space of a community of practice; trainees need full-access to the community. This means gaining entry into the physical space, community resources and structures, and to placement community cultures and ways of working. Findings from my research show that even with mentors, trainees were not treated as peripheral participants in the way Wenger (1998; also Lave and Wenger 1991) describe. For example,

## December

Went into college but no one was there. It turns out they had all gone on a field trip – even my mentor! I wonder she didn't invite me?

## Later entry

I asked Polly [*mentor*] why she hadn't told me about the trip and she said it was because she didn't think I would be interested!! I can't understand why she would think that. I am worried I might be giving off a wrong impression.

(Rose)

As the excerpt (above) shows and later interviews establish, trainee Rose did not pursue the incident further either reflexively on her own or collaboratively with either her mentor or ITT tutor. Yet, the experience and subsequent interaction presented an opportunity for discussion and critical reflection on events and the meanings made for both parties. Working together reflectively at first and then more critically and reflexively, both mentor and their trainee was in a position to guide one another towards developing personal competence. The division of experiences, knowledge

and expertise between parties is not evenly or neatly divided but, that does not mean that neither could benefit from working together to guide one another towards deeper understanding of practice. Participating in collaborative reflecting and understanding is what guided reflexivity calls for; where through reflections on their (inter)actions both parties are enabled to work reflexively towards making new meanings and developing individual practices.

Journal entries showed examples of opportunities for engaging in guided reflexivity during practices relating to teaching delivery. For example, a recurrent theme emergent from the data reflected instances of unsolicited intervention during trainees teaching practices by established community members.

October

The nightmare group again, only this time Babs [*established tutor*] is sitting in. Double nightmare. While I was trying to get them to discuss different kinds of play she suggested I write up their ideas on the board. When I did, she told me my writing was too small. I hate doing this because my spelling isn't brilliant and once I start, I end up writing everything on the board and they just copy it down. I tried to talk to Babs about this afterwards but she just said I didn't do enough different activities and they got bored. I've only got an hour! I'm worried about my observation now, not sure what to do.

(Amy)

December

I was aware that I made some mistakes during the lesson due to the type of preparation that I used. The usual teacher corrected me and suggested as there was a lot on the syllabus not to concentrate on the bones as the students could take responsibility for themselves. He did this in front of the students and I felt undermined and nervous.

(Beth)

In both examples, trainees experience unsolicited interventions from established community members during classroom teaching practice with students. The reasons established community members had for making the interventions are not clear to trainees, nor do journals (or follow up interviews) example any follow-up discussions with between established community member and trainee. Yet, at the time, interactions were of significant importance to trainees to be recorded in their private personal journals. These are reported as negative experiences in journals and I argue if guided reflexivity were introduced as a way of working in PCET communities, this need not be the case. Rather than a negative interaction, such experiences could be utilised to serve both parties beneficially. For trainees such interactions could serve to develop their teaching skills and practices; understanding reasons for such interactions through critical, supported discussions with established community members would provide rationale for the interventions. Similarly, given opportunities to discuss their own approach to teaching could provide established community members with insights into alternative ways for thinking about teaching delivery and together both parties could negotiate new ways of teaching.

Working collaboratively with established community members is not restricted to classroom performances though. Journal entries showed the range of opportunities for mutual development is wide and varied, which means all interactions between established community members and trainees offer possibilities for further development. For example,

September

First night working with Bev [*established community member*] at LIL. She is frantically trying to set up computers and I am conscious of several people milling around waiting for LIL to set up shop. I try to help but I am unsure where everything goes...I feel sympathetic towards Bev but ultimately she has left herself with too little time to set up...The upshot of this chaos is that many people were left stranded waiting around the centre looking uncomfortable and nervous. I feel awful, like I'm wasting people's time.

(Michelle)

As the excerpts above shows, when working with established community members, trainees can find themselves in the middle of things. The example highlights how tensions between trainees' previous experiences and/or expertise and their current role as student manifest. The journal entry, and later interviews confirmed that Michelle had prior experience of organizing training events (she previously worked in Human Resources), yet her prior competences as an experienced manager and provider of training were set aside during interactions with established community members. Although there were further accounts retelling similar disordered experiences, there was nothing in Michelle's, or indeed other journals showing opportunities being taken by trainees or established community members to discuss and reflect critically on recent practice episodes. I argue these are wasted opportunities because collaborative reflections following joint activities would serve to enhance both participants, trainees and established community members (future) practices. Both participants have something to offer the other in terms of guiding the development of their practice.

Therefore, guided reflexivity is not a one-sided proposition. Rather, my aim is that both established community members and trainees would benefit from mutual, collaborative reflections to co-construct future practices. Each participant would contribute and take away different things from working together reflexively and through their interactions each would be guided by the other party's inputs to develop their own (future) practices. This situates guided reflexivity as an active process where individuals work together collaboratively to understand and develop practice. I argue that by working together to reflect critically on performative actions, both trainees and established community members might identify ways of developing their own teaching practices. These practices take forward contemporary ideas about mentoring trainee teachers (Lawy and Tedder 2009; Cullimore and Simmons 2010) and propose a shift from trainee's development being anchored to a nominated mentor to encompassing and involving the entire placement community. In this sense, guided reflexivity calls for whole placement community engagement with trainees to be acknowledged as a possible site of development for all. Receiving a trainee tutor into a placement community should not be situated as a one-sided interaction between expert and novice. Rather, both parties stand to develop their professional practices as a result of their encounters. This calls for rethinking the way that professional development and teacher education are practised.

To establish a guided reflexive approach would require some forethought and groundwork. Ultimately a cultural change in the way trainees are integrated into placement communities and the ways that all members of placement communities interact with trainees is being advocated. Such thinking challenges current practices and the present business model focus. Initially, both placement and teacher education communities would need training in effective reflective and reflexive practices, which is both necessary and problematic. It is necessary because to be effective, critical reflections and reflexivity require practice; such activities, as Bolton (2005; 2010) argues, means moving beyond a merely descriptive process of reflecting on a mirrored remembering of events and engaging reflexively. This, as Bolton explains, requires developing and embracing an active, questioning approach to reflection. She argues, 'reflective practice lays open to question our own and others' daily actions and those of the organisations in which we work' (p.34) and I argue, based on my research findings, that if trainees and established community members were to adopt a similar approach collaboratively then more meaningful insights could be negotiated: training opportunities for both trainees and established community members would be realised.

However, such an approach is problematic because developing effective reflexive skills takes time and practise. Current business models, particularly for FE where teaching contact hours range around 750 -800 hours per annum (Jackson 2012), do not allow much space for thinking time. The opportunities for developing practice conceptually and in-between spaces as Solomon et al (2006; 2008 also Boud et al 2009) define, is substantially reduced and often not possible in some PCET contexts. Therefore, to implement guided reflexivity as practice ontology would require rethinking current practice norms. As Coffield (2008; 2009) argues, [re]turning education away from business models to thinking just about teaching and learning is a particular but, necessary challenge. In this paper I add my voice to the debate and, somewhat ironically, my proposals for [re]thinking current approaches to teacher education in a way that sees continuous professional development opportunities linked to trainee teachers development (during placement practices), could be cost effective in the long term.

Rather than engaging reflexively in isolation, guided reflexivity argues for a collaborative approach, where both established community members and trainees reflect informally and formatively together. All parties engaged in a period of collective action undertake meaningful, critical conversations to question mutual actions with an eye to exploring and understanding why decisions were made and actions were taken in those circumstances and in that context. Both established and trainee practitioners work together to understand their (own) ways of working. Working together reflexively facilitates insights into how current ways of working impacts on, influences and are experienced by others.

By working with together both parties are enabled to develop new and shared meanings and to take mutually negotiated ideas for different ways of working forward into future actions. Therefore, I envisage guided reflexivity taking place between trainees and placement community members as a collaborative and negotiated activity. Reflecting critically on performances with established community members would serve to support trainees and established community members in their continuing journeys towards becoming practitioners and belonging to the PCET

community. It is anticipated that emergent from mutual engagement in critical conversations between trainees and established community members there ensues collaborative becoming involving reflection and forward thinking. In this respect, the journey of becoming takes place across different layers and at multiple levels. Both trainee and established community member are at different places and stages of their becoming and belonging to a specific community of practice. Therefore both parties are situated as providing guidance for each other. Established ways of working become enmeshed with newer, up-to-date teaching pedagogies; both and all parties stand to benefit from the process.

### **Concluding thoughts**

When trainees join a placement community they are immersed in a period of transformation and, as my research shows, this is a period of challenges. Trainees undergo an array of emotional responses such as excitement, fulfilment and hope contrasted with anxiety, depression, self-doubt and anger. These experiences are an integral part of trainees crossing the borderlands between being outside the community of education practitioners, where their status as 'student' situates them subordinate to tutors, to becoming practitioners, where their subordinate position shifts from (in some cases) one-time student to current colleague (in training) and (eventual) colleague and peer. This is a difficult period of both trainee and established community members because the established boundary between tutor and student is blurred. The division between tutor and student is redrawn as a fluid boundary that facilitates both sides to come together as one but, that expects a degree of separation between the two to remain. As my research indicates, some established community members are either unsure how, or are unable to accommodate and work with the modification in their own positioning that receiving a trainee creates. The temporal, impermanent nature of their own identify as an established community member is highlighted when (un-waged) trainees enter the community and engage with its practices.

In some PCET contexts, where security of tenure is uncertain, the acceptance of a trainee on placement, places established community members in a tenuous position; the instability of their own position is foregrounded. The arrival of a trainee serves as a reminder of what established community members are not. As Wenger (1998) noted, identities are defined as much by practices engaged in as those not undertaken. In the context of placement trainees, they can represent something of what established community members have perhaps not engaged with for some time, which is training – teaching practice training. Therefore, the currency of trainees training can create an awareness in established community members of what they are not, which is current in teaching strategies, methods and methodologies. Thus, on some occasions, interactions between established placement community members and trainees are not positive experiences because established community members are working to protect their own position rather than to support the development of a newcomer.

It is recognised that this would not always be practical, certainly during fleeting and passing interactions. Further, I acknowledge that the shifts in placement practices I call for will require additional time to be effective; something that established community members may have little of. Yet, this should not create a barrier to mutual engagement in guided reflexivity. I acknowledge that in recommending the

borderlands between becoming a teaching practitioner and belonging to a community of teaching practitioners should be traversed as a mutual endeavour, a shift in organisational culture is needed. My proposals to rethink the way that established community members receive and work with trainees would require commitment from senior management, perhaps even the State through shifts in policy and curriculum. However, the focus of this paper is on transformation, which could begin at a local level. I am advocating changes to the way that placement provision is viewed, enacted and experienced as a route towards becoming and belonging teaching practitioners. This would require cultural change along with shifts in the ways that resources such as time within institutions is organised. A guided reflexive approach proposes the need for some difficult conversations; it is not certain that current PCET practices are ready yet to traverse borderlands for thinking about teacher education and development quite so differently.

The logo for the International Association for the Advancement of Pedagogical Research (iafor) is centered on the page. It features the lowercase letters 'iafor' in a light blue, sans-serif font. The text is surrounded by two large, overlapping, semi-transparent circular arcs. The upper arc is a light red color, and the lower arc is a light blue color, matching the text. The arcs are positioned such that they appear to frame the text from above and below, creating a sense of depth and focus.

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***Developing a Reflective Teaching Practice Based on Student Voice: Some Changes Experienced from the Point of View of Teachers***

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**Abstract**

Overcoming certain perspectives of teaching that have interpreted teachers as technician, now we consider the teacher as an agent that makes decisions and judgements, does research on his practice, etc., where reflection is an integral part of his daily work (Marcelo, 1987). Thus, situations that influence educational practice are complex and genuine and teachers should reflect on them in context and implement ad hoc strategies to address them (Schön 1998; Zeichner, 2010).

Under these assumptions we have constructed a proposal for teacher reflection that takes into account the movement of student voice as a driver of change in school. We understand that setting spaces for dialogue in classrooms and in schools in which voices of students are heard are important in order to understand what vision this group has regarding their education (Oliveria -Formosinho, 2008; Fielding, 2011). This can be established as a powerful tool to encourage reflective processes focusing on transforming and improving.

We present some of these thoughts, which come from a number of interviews carried out in some schools in Cantabria (Spain) with teachers who participated in student voice experiences. We've organized these reflections into three major areas: school level (how the collaborative project has helped build a more democratic school culture), their role as teachers (how listening to the student voice caused changes in their teaching; how they transformed the image of their students seeing them as critical partners in the process of change), changes in students (improvements of their self-perception, sense of belonging...).

Keywords: reflective practitioner, student voice, educational improvement.

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## Introduction and some theoretical pointers

The present communication introduces the partial results of a research project developed within the R + D + I project directed by Teresa Susinos<sup>1</sup>, whose main objective is the improvement and transformation of schools through the opening and empowering of areas of student participation: special focus is placed on those groups that have traditionally had greater difficulties to both be heard and achieve academic success.

Against the background of this principal objective, in this research we present we have tried to combine the movement of student voice, on which the said project is founded, and the movement of reflective teachers. Both of these concepts have nuclei of different performance but a common purpose: breaking the status quo questioning the secondary role that students, primarily, and teachers, secondly, have had when it comes to participating in decisions of educational relevance and promoting changes and improvement in schools.

The reflexive movement thrives/feeds on the influences of works such as Dewey (1989), Schön (1992, 1998) and Zeichner (2010) and calls for the need to promote the training and development of " reflective teachers ", ie professionals who think from the action and become researchers of their own practice. This approach seeks to overcome certain technical perspectives of teaching who have conceived the teacher as a technical applier understanding that the definition of clear and precise objectives, and by means of the mere application of technical expertise, produced by academic experts, any problem of practice is mechanically solvable (Schon, 1998). Professional practice is interpreted ultimately as a problem of selecting the appropriate media and educational reforms are always designed and implemented from the top downwards.

The consequences of these approaches point directly to a devaluation of the teacher as a reflective and deliberative agent, not to mention an exorbitant routinization of teaching processes. Beyer and Zeichner (1990) furthermore perceive the danger of a scientific discourse that simplifies reality and masks the struggles for power and control that make up our reality, stripping any educational issues of political and social resonance.

In contrast to these approaches , the reflective tendency understands that teachers occupy a privileged position in the educational and socialization process that represents the school : they are the main mediators of school culture and knowledge and , as leading actors of these processes have specific knowledge that they mobilize and produce in the area of their daily practice (Tardiff, 2004). The reflexive movement advocates the agency of teachers when making decisions, researching into their practice, passing judgments and producing legitimate pedagogical knowledge, where reflective activity is integral to their daily work (Marcelo, 1987). In short, a teacher who ultimately plays an active and decisive role in defining the means and ends of their work (Zeichner, 1993).

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<sup>1</sup> Schools that work towards inclusive education: working with the local community, student voice and educational support for promoting change. (Director: Teresa Susinos. EDU 2011-29928-C03-03)

The student voice movement, on the other hand, attempts to rescue the voices of students to understand what viewpoint this collective group holds on the educational situation. It recommends the agency of students in decision-making on vehicular elements of school life, such as the curriculum, and which are aimed at transforming and improving school (Oliveria - Formosinho, 2008; Fielding, 2011). In order that these voices may be heard it becomes vital to build spaces where students can feel safe to express their opinions, speak or stand up and be counted, and spaces where the said voice is considered to be authoritative in education and transformation processes (Arnaiz, 2004; Susinos, 2009). This makes it necessary to rethink the areas, be they physical or metaphorical, of school participation as well as power issues about whom has the right to make decisions, how that power is to be used and those who are condemned to remain silent.

Under the umbrella of these theoretical assumptions we construct a proposal for teacher reflection that takes into account the student voice movement as a driver of change in school. We understand that setting up dialogic spaces in classrooms and in schools in which the voices of students are heard can be constituted as a powerful element when it comes to promoting reflective processes in teachers and other education professionals aimed at transforming and improving education as well as their professional development. We present some of these thoughts, which come from a series of interviews with teachers after participating in experiences of student voice in schools in Spain.

### **Methodology**

From the methodological point of view, this research is based on the pillars of the qualitative tradition and is clearly influenced by the ethnographic approach (Hymes, 2006). In order to do this, we use a variety of collection tools such as classroom observations, field notes, photographs, diaries and interviews. In this work we analysed data from seven semi-structured interviews carried out on various professional educators (tutors from Infants and Primary, the principal, the counsellor, and a specialist in Therapeutic Education) working in two schools- one Infants and the other Primary in the Spanish education System, and more precisely in the community of Cantabria. These interviews were carried out after completing their participation in different experiences of student voice for school improvement and transformation school, in collaboration with a number of professionals from the University of Cantabria.

In order to conduct the interviews a script was drawn up with great topics for discussion and some questions that worked at all times as a guide, rather than as a closed set of proposals. Thus, the script became a tool for relating the topics with the responses and for accessing new information in their theoretical space, facilitating the development of an interview that would promote the explicit thought processes of the participating professionals (Díaz de Rada, 2007).

To perform the data analysis we used a thematic coding system in which we define the analytical categories and codes (Huber, 2003). Likewise, in order to define the coding system we employ strategies of an inductive and deductive nature to the extent that, although we started with an initial scheme of variables to analyse, the work done

with the data made it necessary to redefine some of these categories and codes during the analysis process.

The categories that emerged during the process of framing analyses allow the reflections of teachers around the following areas:

- Changes in students: learning that they have developed and skills and personal variables that have been enhanced; transformations of their role in the classroom / school.
- Changes in the teachers: changes in relation to their conception of the student; perceived improvements in their professionalism.
- Changes at the school level: improvements and perceived changes at a school level and in terms of school culture.
- Proposals for further improvement: the concept of student voice and its relation to new participation suggestions over the coming years.

## Results

The reflections made by the professionals are varied in relation to the different areas we have identified. Similarly disparate are the consequences that these discussions will have on the educational practice of each teacher and professional participant. It is essential to clarify that each category is not independent of the others, revealing that the way of conceiving each of them will impact, directly, in the way that we understand each other. So, for example, what one teacher understands by student participation will shape the conclusions they have drawn about the learning experiences developed by students and/or by themselves and, of course, this will determine future courses of action arising from such reflections.

### 1. Changes in students:

Many of these professionals think that promoting the role of students in managing the classroom and the school thus making them feel important and responsible when deciding to participate, has resulted in the development of a series of positive feelings and attitudes in the students. Especially, the group of participant teachers recognised that the participation experiences that they have carried out in the classroom have helped improve the personal qualities of the students in terms of motivation, interest, attention, confidence, self-esteem, and so on, generating, in this way, a sort of private benefit or welfare.

Furthermore, a smaller segment of our sample underscores the relevance of this experience as a learning enhancer related to curricular skills such as the ability to communicate: organizing their opinions, taking turns to speak, respecting the ideas of peers, and so forth.

*"In such young children you see how they gain in confidence, self-esteem, all the tools of expression, and communication suddenly take off, literally take off" (Tutor Elementary).*

Beyond the individual level, teachers also reflect on the benefits that voice pedagogy has when it comes to improving relations between students and to building

collaborative cultures that link all school stages and cycles: all learn that any student of any age can contribute something, developing a competent image, not only of themselves but also of their peers. More precisely, the Infants teachers emphasize the inter-level value implied in this project, emphasizing the benefits that these experiences have meant for younger students at the school:

*"When you hear 'University project', any of us will say, 'Well, that must be for the 5 year-olds onwards'", but look how well it went down, it has included the 2 year-olds and gone right up to the final year ... it has been wonderful ... "* ( Infants Tutor ).

In relation to the role now occupied by the students in the classroom and in the school itself, most professionals agree that the students are now active agents when it comes to deciding and taking actions in school, in contrast to the traditionally passive role. Some professionals even claim that the process of empowerment has helped students learn that there is another way of working and being in school, and a way that they now claim and demand.

*"Let us just say that they participate in a more active way and now have power over areas that previously they did not have. They were only agents, let's say, passive elements there, thinking well, I'll study what I'm told to, today I'll do what they tell me to, now I will do the exercises that they set me . Now they have say, as to how the groups are organized, how they worked, when they presented things, when they didn't ... "* (Elementary Tutor).

Needless to say, the interpretation of the concept of participation and agency is different for each of the professionals, as we will underline when we analyse the semantic field generated by teachers around the concept of student voice.

Finally, it is a small number of professionals who reflect upon the significance of creating democratic proposals in schools to help form *"little citizens who can give their opinion"* (Head-teacher of one school) and to exercise critical citizenship starting today.

## **2. Changes in teachers:**

Within this category we must distinguish two types of reflections associated with learning that teachers believe they have made as a result of participation in this experience. Firstly, those related to the direct act of listening to the voices of students and, secondly, those connected with the learning experienced as a result of participation in a project that has interwoven the school world and university.

Having made this clarification, we proceed to analyse the various reflections that teachers have made about gains and learning, both in personal and professional terms, that participation in this project has given them, starting with those that deal directly with student voice and ending with those that are more related to the collaborative project with the university.

The teachers are of the practically unanimous opinion that the image they had of the students has been substantially modified to understand them now as being competent agents whose reflections it is possible and desirable to learn from. Many of them

realize the loss accrued by devaluing the knowledge and concerns of children in favour of adults and they begin to consider them as change agents capable of generating relevant proposals to be examined collaboratively.

*"We were wrong, we think that the older we are the more we know whereas in fact we do not know so much"* (Elementary Tutor).

They have learned, in short, that student voice deserves to be heard and by listening more carefully much more can be learned than we imagine. This is illustrated by one of the teachers when he says that *"they have changed me a lot"* (Elementary Tutor).

Among other things, the change in their conception of the students, have brought about other significant changes in the way they consider themselves as teachers and their practice in the classroom.

One teacher stresses how she, who characterized herself as authoritarian and fairly rigid, has learnt to become more flexible and more tolerant of the opinions and ways of doing things that differ from hers.

Another group of teachers also suggest how much listening to student voice has sparked changes in their teaching leading them to become more dialogic and inclusive professionals:

*"And it's something we have to learn as professionals, that we are not independent from our class, but rather there comes a time when we are all together as one there, and they interact and we answer them respond and they answer this response with another, and hence we create a very interesting dynamic circle among everyone in the class, and this is something we should take great care of"* (Elementary Tutor).

In line with the movement of reflective practitioners, many of them also explain that listening to student voice, on the one hand, and participating in a collaborative project promoted by the university, on the other hand, has facilitated the development of reflective processes that have led to a questioning of the practices and routines that they were conducting as teachers and / or education professionals. They realize the need to stop and think and reflect, at certain times, on daily practice, analysing what else can be done differently from their normal practice or what alternatives exist compared to the solutions given to a particular situation. They have learned to discern that, many times, many things become routine and not because they have pedagogical sense. However, in contrast to the reflexive theory of Schön (1992, 1998), understand that they have not been able, on their own, to break with practices that, they now consider as excessively routinized. They feel the need to consider other perspectives (the university and students) to be able to deploy these reflexive processes aimed at transforming and improving school.

*"For me the reflection has in my case, made me myself, stop a moment to think about what education is all about, how we go about things and how we can do it"* (Infants Tutor).

*"It has changed because it has forced me to reflect upon my daily practice and see that right now as a representative of the management team, I can do things that*

*maybe from a Tutoring session cannot be done. Then within these confines of 'power' that I have been given by the community well I can direct my activities, seek funds and organize things according to ideas that are good for everyone, that maybe at some other time if we do not think about things, the day-to-day takes over. We need to think from time to time, but we live so fast that you have to stop and try to say, let's see how I can improve this"* (Head-teacher of one school).

Finally, as for the reflections related to participation in this project in collaboration with the university, we found that some consider the mediation by external agents has helped them work in an organized and more collaborative way with other educational professionals. In only a few cases, some interpretations we feel worth mentioning, as being reductionist and dangerously related to the applicationist teaching perspective to which we alluded to in previous sections, that deal with some technical learning such as how to hold an assembly or a counselling process or, more generally, *"how to teach, which methodology"* ( Infants Tutor) .

### **3. Changes in the school:**

The student voice movement seeks to enhance the participation of students in the decision -making of all areas of school life, rather than limiting it to the classroom level only. That is why many of the reflections of the professionals participating have been about the improvements and changes that they have perceived at a school and concerning school culture.

The main value that they identify at a school level is the planting of seeds for change. While most think that more time is needed to consolidate some proposals that have begun to take shape, all also agree that participation in this experience has restored a will that had previously been lost, to develop new projects. Above all, it has shown them that much can be achieved if all work collaboratively.

*"But I think there is on a very subtle level, a feeling of 'hey, this is really good, let's keep it going ...', where at first there was more scepticism"* (One school counsellor).

In this regard, it is interesting to see the infectious nature of how the participation of these professionals in the project has stirred others previously undecided as to whether to participate. Many teachers have shown curiosity and interest in the initiative, which has resulted in reflective processes shared with those who were participating. Some have even tried working in a similar way.

*"Yes, I have seen my colleagues from my cycle asking me ... with some fear actually, 'hey this thing the kids are doing and you believe in, but you will still keep doing checks, and you still have to check their progress in Environmental Awareness Classes, right?', I see them at the first stage of approaching the project and wondering how the project has turned out"* (Elementary Tutor) .

*"Then people have been joining the project and what's more , colleagues have come up and congratulated me, the kids have gone to school, how happy they are, and then they in turn are working similarly taking advantage of this dynamic approach"* (One head-teacher) .

Many reflections estimate ultimately that to develop a collaborative project that has involved the whole school or different classes of the same educational cycle has helped them build a more democratic and respectful school culture that in turn has allowed them to start to communicate better. They consider that the school climate has improved and the school begins to function as a community.

*"Well, we have worked as a team for a start. For example, they have respected people's new ideas, in a project whereby all are involved... when we used to talk about a project we would say. Just extra work, but when you see that it makes sense and that it may be of interest to the coexistence of the entire educational community then for me that is what I think has changed the most" (Head-teacher of the school ).*

#### **4. Proposals for further improvement:**

In this final section we analyse the reflections that teachers made after participating in this experience, as to what they understand by student voice and how this concept can be related to suggestions to be put into practice over the coming years.

As noted in previous sections although all the teachers have developed ideas and discourses in which they begin to consider involving students in decision-making in school life as essential to implementing school improvement, we found significant differences in the level of involvement that they define and to the type of decisions over which the students should have authority.

Some professionals reduce the concept of student voice and opening spaces for participation as merely sporadic proposals in which students can express their opinions. Assemblies, meetings, and so on, but ultimate responsibility for the decision rests with the teacher.

*"What I've learned is that it is possible to give voice to students and I have seen the way they have become organized, held assemblies, conducted interviews, had meetings" (Infants Tutor).*

The improvements proposed by these professionals include performing, in a more assiduous way, this type of initiative, without making other changes to the rest of school practices.

Other professionals, however, think that students are capable of managing themselves and taking responsibility for a host of educational issues which traditionally have not been permitted to speak about, so it becomes essential to find spaces for them to decide. These professionals question the value of many of the decisions usually taken by adult and understand that promoting various democratic spaces in the centre where their interests and proposals are listened to and taken into account as an authoritative voice (Susinos and Rodriguez, 2011) is essential in order to begin to change things.

*"I think it is necessary for the children to learn to speak and I think that adults need to learn to listen to what they say and to do this we must think about how, and in ways to do this" ( School Counsellor).*

This understanding spawns proposals that are related to decisions in which students traditionally have not been considered, such as those related to the curricular and methodological field. These professionals come to value the contributions that students can make about the contents to be worked as well as the way to work them.

*"I think it also would be nice if they could talk about methodology but do not call it so, on how to learn, because many times we give it to them very done, very thought out, very structured in our own way, and they would surprise us learning in a different way, and telling us how they would like to learn" (Elementary Tutor).*

Finally, other proposed changes involve taking this process of participation to families, establishing lines of home-school action that are common and, finally, taking them into the community.

*"Yes, I think it would be interesting to devise some way that would engage families, and that would be through the children. There are families that are involved, it is true, but in general they think as their children thought, the child goes to school, the teacher teaches and you come home and it's another world. No, they should be involved in saying, well, education is not the school nor the family separately. It's everything because the child lives in this world, is a few hours at school, is a few hours with the family. We are going to have common areas because they are not separate spheres" (Elementary Tutor).*

## **Conclusions**

In this paper we have presented some interesting thoughts that have arisen as a result of the participation of teachers in a student voice experience. However, the different understandings of the concept of participation outline very diverse directions in which their practices are heading, some more desirable and consistent with the pedagogy of voice than others.

Moreover, to differing extents, we find how the opening up of dialogical spaces between different actors (teachers and other professionals, students, university lecturers) and educational activities have helped develop reflective processes in which teachers have mobilized some knowledge they are starting to project to different processes of transformation and improvement (Tardiff, 2004).

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***Student Voice's Experiences for the Teacher  
Development an Analysis of Best Practice Guidelines***

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**Abstract**

Based on the idea of inclusive education, a lot of initiatives are being carried out in order to improve the presence, participation or success of students at school, paying special attention to those who due to gender, age, ability or ethnicity traditionally have been marginalized, silenced and have suffered a process of "disempowerment" (Fielding, 2011; Messiou, 2012; Susinos and Ceballos, 2012).

In this context, the movement of student voice invites us to ask who has the power in schools and how they use it, what Bernstein calls "acoustic school" (2000). The experiences of student voice seek to create spaces for dialogue and deliberation to make changes in schools taking into account the thoughts of students. This is based on the conviction that all students are agents with the ability and knowledge to transform, regardless of their characteristics (Rudduck and Flutter, 2007; Fielding, 2011; Fielding and Moss, 2012).

In this paper, we present the conclusions of the review of good practice guides of student voice. These guides are the results drawn from different international research studies. In particular, we will reflect upon the transformations experienced by schools, teachers and students as a result of their participation in improvement projects. We will also analyse the main barriers and supports of participation which condition the beginning and sustaining of these educational experiences whose motor of change is student voice.

Keywords: Student voice, good practices, transformation, participation

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## Introduction and some theoretical pointers

Inclusive education has been placed as a priority on the international agenda (Ainscow and Miles, 2008). To this end, different projects and initiatives (learning communities, collaborative groups, peer support, etc.) have been implemented that seek to overcome the inequalities of presence, success or participation experienced by students in schools, especially those who have usually been excluded. It is in this search for a new, more inclusive pedagogy where the student voice movement is to be found, and although originating in countries such as England, Canada or the U.S. it has spread to countries with less tradition therewith.

When we use the term "student voice" we use it as a metaphor, as an image to indicate the urgency of recognizing the right to participate and engage students, on equal terms, in the life of the school and their learning. In short, the experiences of student voice have as their main purpose to expand the spaces of student participation in all aspects of school life understanding that their ideas, thoughts and suggestions are excellent drivers of change and educational transformation (Rudduck and Flutter, 2007). We find then that placing the ideas and thoughts of students at the centre of discussions and dialogues on teaching and learning, involves rethinking how power is distributed in schools, who owns it and what use is made of it, what Bernstein calls "school acoustics". Thus, students are no longer viewed as passive learning agents, but to become seen as agents with the ability and knowledge to reflect on their life in schools and suggest improvements (Rudduck and Flutter, 2007; Fielding, 2011).

It also means building spaces where students can feel safe to think, speak or express themselves – in other words, building schools where the voice of all students has its own space and is considered an authoritative one in education and transformation (Arnaiz, 2004, Susinos, 2009). In this sense, the pedagogy of voice pays special attention to students who due to gender, age, ability or ethnicity, have traditionally been marginalized, silenced and have experienced a constant process of "disempowerment" (Fielding, 2011; Messiou, 2012; Susinos and Ceballos, 2012).

In short, we are seeing the start of a complex and idiosyncratic way of redefining relationships between adults and young persons, as well as ways of organizing the school culture (Fielding, 2011). It is in these reflections on relationships, curriculum or school organization that provides honest listening to the voice of all students where we build more inclusive and democratic schools that are setting out on the path towards becoming spaces that welcome all students (Ainscow, 2001; Sapon-Shevin, 1999).

However, as occurs with other major educational concepts, on occasions we find under this term of student voice experiences of various and even contradictory kinds. Therefore, it is necessary to specify the pillars and principles on which they are founded; the main steps for the development of these experiences; and to analyse the main barriers and supports that schools find in this process. To this end, the documentation and dissemination of successful and innovative student voice experiences may be useful. This is the ultimate purpose of the doctoral thesis<sup>1</sup> upon

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1 Noelia Ceballos Lopez: Analysis of experiences of participation and student voice in the Autonomous Community of Cantabria Good practice for initial and ongoing training. Director: Teresa Susinos Rada Project funded by the call for FPI (2012-2016)

which this communication is framed, to develop a good practice guide, the fruit of documenting experiences of student voice that serve to launch initiatives that honestly listen to the voice of the students.

In this paper we make a first approach to this purpose, analysing different materials and already existing resources and which can be consulted teachers as a support for the implementation of student voice experiences. Specifically, we will pause to analyse what main barriers we encounter when we seek to expand the opportunities for dialogue. We will examine some actions or processes that are positioned as levers of change for its development. Finally, we will look at the main changes and transformations experienced by schools, teachers and students who have participated in them.

We believe that the analysis of these aspects in the materials, can give us relevant reflections, not in order to transport the suggestions and experiences from one context to another as a copy, but rather as reflections that can become tools for analysing experiences that are currently developed in schools or as supports for the implementation of new initiatives to build schools of radical democracy where the voice of the students is considered as a powerful tool for improving teaching and educational change.

## **Methodology**

Initially, we conducted a literature search in which we obtained eleven materials and / or resources on student voice. Once we had this initial sample at our disposal, we conducted a preliminary analysis that allowed us to select the resources noted below as a sample of our work. For their selection we focused primarily on the criteria of belonging to the object of study, accessibility and relevance of authors in the field. While we are aware that they represent only a limited sample, we believe that with this sample we can meet our goals:

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[http://centrallobby.politicshome.com/fileadmin/epolitix/stakeholders/Student\\_Voice\\_\\_web\\_ready\\_.pdf](http://centrallobby.politicshome.com/fileadmin/epolitix/stakeholders/Student_Voice__web_ready_.pdf) (last accessed on October 13, 2013)

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After selecting our sample, we conducted a detailed analysis of such materials by subjecting them to a process of categorization. The categories used respond to a deductive-inductive method commonly used in qualitative research and always with the clear intention of never losing the essence of the discourses (Tójar, 2006).

Although we performed a comprehensive analysis process, below we pause to analyse the results of three of these categories:

- transformations, improvements and changes experienced by schools, teachers and students as a result of their participation in student voice projects;
- barriers, i.e., statements and examples of issues that hinder and/or limit participation and student voice.
- and finally, supports, i.e. aspects that favour the initiation and maintenance of these experiences.

## Results

Here, we present the main results obtained from the analysis of resources and materials related to student voice listed above. We focus on three aspects: the transformations and changes that schools, students and teachers have experienced in the development of these experiences; the main barriers they found to their development and finally, aspects that have encouraged and helped their development. One of the core aspects when schools decide to initiate a process of increasing participation and student voice is to know to what extent and how these initiatives represent a change and transformation in the life of schools. As regards this topic we should note that not all the guides provide a section on it, although it is present in all in the development of the text.

- In terms of the students we discover that the materials, through the expansion of opportunities for dialogue and joint decision-making, highlight that they develop a more positive conception about themselves and their capabilities (Fielding and Bragg, 2003) conception. Even those students who are negatively valued in school for their academic performance or behaviour improve their self-image by observing that their opinions and ideas are listened to and valued as being relevant and that they have greater control over their learning. This change in roles of teachers and students as well as increased recognition of the students represents a change in the relationship between these students and in turn with teachers (Fielding and Bragg, 2003; Fletcher, 2005; Llywodraeth, 2011) towards more positive interaction modes. Similarly, this encourages students to develop listening skills, communication and negotiation skills as well as learning to develop a way of building knowledge from the pillars of research (Fielding and Bragg, 2003; Llywodraeth, 2011) allowing them to be more active and creative in their learning.
- However, the transformations are experienced not only by students but also by teachers. This is not simply because an improvement in relations with their

students occurs, as noted above (Fletcher, 2005; Fielding and Bragg, 2003; Llywodraeth, 2011) but because these experiences are transformed into excellent tools for training and improvement in teaching (Fielding and Bragg, 2003). So, reflecting on the ideas that students put forward on the processes of teaching and learning, teachers can rethink their teaching practices and experiment with new strategies based on from more positive and more competent student perceptions of them (Fielding and Bragg, 2003).

- These improvements in students and teachers spread, in turn, to changes in the school culture. Mainly, redistributing power between adults and students without exception including favours the creation of more inclusive democratic educational communities (Llywodraeth, 2011). This in turn leads to a change in school learning culture where students and teachers learn and teach together (Fielding and Bragg, 2003). These changes therefore enable us to analyse the actions and educational processes currently taking place and to seek new conceptions of learning, so that openness to new ideas and ways of developing intergenerational work (Fielding and Bragg, 2003; Fletcher, 2005) become key to the identity of the school.

It has been stated previously that schools, students and teachers experience significant improvements towards shaping a more inclusive and democratic school. Nevertheless, we should not convey the image that profound changes such as these do not involve a process of care and effort to overcome certain barriers. Below, we illustrate the processes and actions that these materials see as the main barriers and upon which we must reflect.

- The first of the recognized barriers is the absence of safe spaces where students can express their ideas without understanding that there is adult control that expects a single correct answer (Fletcher, 2005a). Not only is it essential to create these spaces, we must do so without manipulation. For example, a barrier to genuine participation is the attempt by some teachers to transfer *their* concerns as the object of the *students'* research regardless of their students' interests (Fielding and Bragg, 2003). Even more so, teachers may understand that these processes respond to activities that are parallel to the curriculum, without modifying it in essence (MacBeth, Demetriou, Rudduck, Myers, 2003)
- What is common in schools, especially in secondary education in Spain, is the use of engagement strategies based on representation. While by itself, the use of this channel is not negative, it sometimes poses a barrier if the channels of communication between students are not open or do not work in both directions (Llywodraeth, 2011). Similarly, as Fletcher (2005b) points out, the way in which students representatives are chosen can also constitute a barrier, because that selection is usually made by adults who tend to select the most talented academically. This in turn gives rise to a feeling of non-representation of the rest of the students. Similarly, we must take careful that students who possess communication skills and leadership do not take ownership of the spaces for participation because it would limit the involvement of the rest (Fielding and Bragg, 2003; MacBeth, Demetriou, Rudduck, Myers, 2003).
- Finally, although highly relevant, we find that careful and honest listening to student voice should conclude with the implementation of some of their suggestions for improvement. Just ignoring them sends out a message of disinterest and represents a barrier to future participation (Fielding and Bragg,

2003). There may be various reasons why suggestions are not carried out, but one of them, as the materials analysed indicate, resides in the fact that these initiatives do not have the school management support (Fletcher, 2005a).

Just as sometimes the school culture of schools is a barrier there are also processes or actions that become a support, a resource for the initiation and maintenance of student voice initiatives. The materials and resources analysed present some supports that schools have at their disposal:

- A key support is the development in students and teachers of skills for decision-making, deliberation and respectful dialogue. While there are students and teachers, who naturally possess knowledge of these strategies, training in such skills is an essential element of support in a democratic and inclusive culture (Llywodraeth, 2011).
- Similarly, when students begin to talk, gather information, investigate and make proposals for improvement, finding resources that students can develop becomes a support for these processes. Some of these are materials (photocopies, a room, etc.) but others are more organizational resources (Fielding and Bragg, 2003) such as where to find space and time to build trust relationships between students and teachers since it is necessary to procure time to be able to talk and to get to know each other.
- It is also positive on occasions to create opportunities for the teachers and students who have participated to share the learning experiences with others who wish to start working with student voice pedagogics (Fielding and Bragg, 2003).

## Conclusions

In this paper, we present the main results obtained from the analysis of different materials on student voice, focussing, from a critical standpoint, on three topics. Firstly, we identify the changes and transformations undergone by schools, teachers and students with these initiatives. Secondly, we analyse some of the barriers that schools come up against. Thirdly, we examine the elements that support the initiation of change. From this analysis we can conclude that opting to increase the opportunities for student participation, placing students as expert witnesses of what happens in schools, and as drivers of change in them, supports the addressing of changes in the ways to relating with each other and organization. We hope we have been able to indicate some of these elements in this work.

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## *Peace Education for Iraq's Population*

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### **Abstract**

Iraqi education has long suffered from an out-dated curriculum, poorly qualified teachers, overcrowded classrooms and lack of exposure to recent developments, but above all from an environment not conducive to preparing children to be peace-loving global citizens. Bearing in mind the diversity of ethnicities, religions, minorities and languages that live in Iraq, what kind of educational policy should the authorities follow in order to have as an outcome adults who are inclined to peace and who have the right kind of skills to be creative and peaceful citizens of their communities, of Iraq and of the international community? The paper scrutinizes current education programmes and assesses their general validity and whether they are favourable towards the outcomes that have been envisaged for them. Furthermore, the paper proposes a totally different approach in handling education for a population as diverse as the communities of Iraq. Iraq's diversity is so broad as to encompass people who do not understand each other's languages, sects and religions, and it also include alienated or marginalized minorities. What kind of education would make all Iraqi children acquire a feeling of belonging to it as equal citizens? We want children who have learned to play together and to sing together to speak each other's languages and simply have fun together and become the tolerant, peaceful citizens of tomorrow. This paper seeks to offer a view intrinsic to a person who has 'lived the whole story' and has had a first-hand experience of the realities of the diversity of Iraqi communities.

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## **A brief historical backgrounder on Iraq**

Iraq is not quite a new state: it was established by the British after the First World War, upon their defeat of the Ottoman Empire and gaining control of the area. The population of Iraq, although Arab in the majority, was never homogeneous ethnically or otherwise. In the south and centre the divide is sharply made on a basis of religious identity rather than nationality, namely Shi'ite versus Sunni – with minorities of Christians and Mandaean, who use different forms of Aramaic in their religious life, and who in fear of their lives have now fled their homes in the south and centre to the Kurdistan region of Iraq. The north has a majority of Kurds, whose territory includes a mosaic of nationalities, sects and faiths. Besides the Turkmen who are also either Sunni or Shi'ite, there are Chaldeans, Assyrians, and Armenians (all Christians, belonging to different churches) in addition to other minorities such as the Yezidis and Yarsans or Kakayis, whose religions contain elements older than Judaism, Christianity or Islam.

Iraq had lived in turmoil, instability and conflict during most of its existence. After very many wars and economic privations, and a horrific level of violence committed against its population by previous regimes, it has experienced a turbulent era in the last decade that has made Iraq one of the most hostile areas for children to live in.

For decades, the successive autocratic regimes that ruled Iraq had no interest in building creative citizens who would seek individuality and a free style of thought – rather the focus was on a submissive youth, brainwashed to be instrumental to the goals of the ruling political parties. This attitude reached its peak during the rule of the Ba'ath party headed by Saddam Hussein, when educational curricula mobilized children for war and militancy right from early childhood. Children at kindergarten were taught to combat the enemy through the first nursery rhyme they learned. It is therefore a challenge to reorient the children and youth of Iraq towards building peace. Furthermore, attempting to create a peace education in Iraq in the context of the current intensifying hostility and armed conflict is not an easy matter – nevertheless it is an urgent necessity.

Engagement in peace-building requires a long-term vision owned and driven by the government in collaboration with the international community, along with a planned national strategy that has the approval of all stakeholders.

## **The Role of the Education in Building Citizenship**

Dr Phil: “We’re all products of our learning history.” (Dr Phil’s Facebook Timeline, 1 July 2014)

Education is the bedrock for peace building, as it is the provider of basic knowledge for all and it stands in some relationship with every other sector in the community. Views on education have changed recently: instead of being focused on information, thinking on education now often focuses on ‘formation’ of the future citizens of individual countries and of the larger world.

Only when ministers of education realize that their responsibility includes preparing future generations to not only know how to read and write, but also to be thoughtful, responsible members of their communities, who will

graduate not to make money but to make a difference, will we rest knowing that we have contributed to creating a Culture of Peace. (Salomon and Cairns 2010:343)

It was in 1992 that the former UN Secretary-General, Boutros Boutros-Ghali, announced the 'Agenda for Peace'; soon the use of the term 'peace-building' became familiar in dealing with post-conflict communities. According to a UNESCO source, education should be associated with social justice and sustainable human development. (UNESCO Peace-building, 1992.)

We need to look at what kind of education is being provided to Iraqi children and youth and how the concept of citizenship has been implicated throughout the curriculum. Generally speaking, schools in Iraq lack attention to the child's emotional, social, moral and humanistic development on account of focusing mostly on the child's cognitive knowledge. The major shortcomings in the education system in Iraq could be summarized in the in the following points:

1. Lack of awareness on the part of decision-makers of the value of defining an appropriate vision for the Ministry of Education;
2. Outdated curriculum – its last comprehensive update was in the early 1980s;
3. Poorly trained teachers;
4. Insufficiency of coordination between school and the community (PTA);
5. Shortage of suitable school buildings and overcrowded classrooms;
6. Short schooling hours, as most school buildings are shared by two or three schools;
7. Rigid pedagogical modules, with no electives as each and every student learns the same textbooks by heart and is promoted to the next stage on the basis of having learnt by heart the prescribed textbooks;
8. Lack of sport, music and art classes, hence students miss out on any team-building spirit in schools, and generally scarce extracurricular activities;
9. Lack of life/survival skills programme;
10. Curriculum is not relevant to the contemporary needs of young citizen, neither does it prepare them for the job market;
11. Old-fashioned and poorly designed language classes, hence children, youth and adults are poor communicators in their native and the foreign languages; likewise, no time allocated for creative writing, speeches or oratory classes; the majority are not articulate and cannot use language to express their thoughts clearly and adequately.

The above were all valid points and challenges for those who want to address them, but more important for this paper is how the identity of young citizens is defined and implied throughout the schooling years and the curriculum, and how this is factoring in the absence of peace amongst Iraqis.

We can summarize the attitude of the education system towards building the concept of citizenship during three main periods of Iraq's history.

The first period is during the early years of the establishment of Iraq and throughout the rule of the Monarchy (1921-1958), when the concept of citizenship was summed up by the rights that the citizens had and the duties they were obliged to the state or the king. Such concepts were included in teaching modules called 'National Education', which focused on teaching the administrative structure of the government

and indicated the role of Iraq amongst other Arab nations and explained the role of the individual, the family, the tribe, the village and the city.

The second period was a prolonged phase of upheaval. The period that followed the fall of the Monarchy in 1958 and marked the establishment of the Iraq Republic until 2003 is said to be the most critical in Iraq's history as regards the concept of citizenship. New concepts were introduced into the previous 'National Education' textbooks, which introduced 'Arab Unity', 'the struggle of the people against colonialism', 'aspects of Arab Nationalism' and eventually, and intensively after 1979 'the principles of Arab Ba'ath Socialist Party' and the dogmas of 'Arab Unity, Liberty and Socialism' (Abdulla et al 1979) – a triangular motto that became the most visible slogan, one that you could not fail to see in every classroom throughout the country, and it was also the first to be seen on the signs of every state building, office, school, and public organization. Yet this slogan was confusing for the majority of children and adults alike. However this sloganeering was not the end; trends began to shift heavily towards war and militarism. Citizenship status became increasingly gauged on one's degree of preparedness to glorify war and hatred towards all other nationalities and ethnicities in Iraq and the neighbouring countries. Gradually Iraq became a country that suppressed the existence of all but one religion, one nationality and one sect and everyone else was an enemy. Hundreds of thousands of Kurds of the Shi'ite faith were expelled from Iraq. During the national census that took place regularly every ten years, there was no entry for nationalities other than Arabic and Kurdish, while all Christians would be entered into the census forms as Arabs (based on the idea that all were Semites). School-curriculum textbooks of 'Arab Nationalism and Socialism' would explain that all Semites were Arabs who had migrated from the Arabian Peninsula. In this regard, even Armenians were entered as Arabs! There was extensive uprooting of Sunni Kurds from certain cities and towns in the north, replacing them with Arabs from the south and centre of Iraq. This marginalization of the majority of Iraqi ethnicities became the norm: just one, Sunni Arab, component of Iraqi society came to be considered as comprising wholesome, 'ideal' citizens.

This was likewise a period when civil ideals were increasingly replaced by military ones, and independent civil society forcibly transformed into one political party for all, embodying multifarious contradictions – calling for adherence to traditions at one stage, and for abandoning tradition at other times: '... our patriotism would appear through our contribution in building the future through performing the national service – joining the army – ... and joining the "national campaigns" led by the Party and the Revolution' (Abdul-Ridha et al 1984: 19); while at another stage it was mentioned that '... the political leadership stressed raising citizens on the principles of nationalism and socialism away from the backward traditions' (Abdul-Ridha et al 1984).

On the eruption of Iraq-Iran war in 1980 the concept of citizenship was modified to express the need of the state for army recruits; therefore, the duties of citizens towards their country were defined to be, 'love of your country and sacrifice for it, doing your national service, and finally committing yourself to national and patriotic demands' (Abdul-Ridha et al 1984: 28)

It was during these eight years of war with Iran during in 1980-1988 that the seeds of war, hatred and violence were deeply planted in the mentality of Iraqis, and this was

reflected in the study programmes of school children to a substantial degree: some 75% of a text book on national education for twelve-year-old students were devoted to Iraqi army institutions, the military recruiting system, the role of the army in society, Iraqi revolutions of 1941, 1958, 1963 and then the coups d'état of 1968 that brought the Baathist regime into power. It further included chapters on other parallel intelligence and security forces and concluded that citizenship was based on the individual's contribution to the war (Abdul-Ridha et al 1984: 19). In subsequent years, all the curricula, especially that of civic education (which changed its title into 'Arab Nationalism and Socialism Education') would focus on the mind-set of the one and only political party, the Arab Ba'ath Party, and the cult of its leader.

The third period is the one after the fall of the regime in 2003 until the present. Initially there were high hopes in Iraq for the education system to emerge as a healing path, one that would lead Iraqis on a path of reconciliation, forgiveness and living together in peace. However, the outcome has been a disappointment: whatever changes the education system has witnessed since then have been superficially conducted and consisted initially of removing references and pictures that were symbols of the old regime followed by an intensive infiltration of religious beliefs, logo and stories in every textbook that one can imagine. Even mathematics textbooks will contain references to religious books – and such is the case with all other textbooks; this has shown clear bias to one of the Islamic sects over the others, while totally ignoring other ethnicities and religious beliefs.

### **Towards Peace Education**

#### **A policy issue**

Two factors intrinsic to the situation have played their part in maintaining divisions amongst the components of Iraqi society. One is that the state denies the existence of divisions, even when the warring factions are in action against each other! The second is that the Ministry of Education and its decision-makers are ignorant of the significance of existing peace-building initiatives for Iraqi society. A number of voices called for national reconciliation programmes, to be introduced in post-2003 Iraq; however, these voices were met with refusal on the grounds that there was no need for such national reconciliation – there was no division amongst Iraqis and no conflict to deal with! This misleading concept of peace being 'absence of war' was and still is dominant in the minds of Iraqis. (Adams, D. (2009).) Surely a society that has suffered so much extreme violence in so many of the last decades would need to think of more profound strategies to bring about peace: without doubt the currently dominant outcome of violence and hatred in the life of Iraqis has been in the making for too long. Therefore, it seems likely that the remedy would also need to be a long-term plan, one that would see short-term fruits in raising issues and awareness and bringing to surface what has always been 'under the table', and a long-term result in enabling the state to settle on defining a vision for the Ministry of Education, which would have to be subsumed in a philosophy of peace education, with a strategy and a plan of action and surely with an all-out reform of education.

What role could education play in bringing together future generations of Iraq, and how?

What is in dire need in Iraq is establishing an education system that would lay the foundation for future generations to have the knowledge, attitude, values and the skills

to resolve differences peacefully, and who could accept diversity and consider it as a point of strength to possess a society enriched with various cultures, religions and languages.

Iraq has not lost the opportunity to teach peace to its new generations and teach them to understand each other's stories and mind-sets, compromise and learn to live together and have a peaceful coexistence. There have been a number of approaches to reconstruct peace in post-conflict societies through integrated education, critical multicultural education, or human rights education. (McGlynn et al (2009:274).) Iraq should be thinking of initiatives of peace, reconciliation and coexistence like those that took place in Sierra Leone, South Africa, and Bosnia and Herzegovina. Peace does not come with our DNA. To reach peace we need to teach peace, a phrase well penned by Prof. Betty Reardon, South Africa's former minister of education (Castro and Nario-Galace (2008: 9).)

### **The Way Forward**

The major issue facing Iraq in its path towards a peace education lies in eliminating structural violence at the level of the community, the family and the household – the areas in which the laws and the way they are enacted have failed to punish violence. (Augustin, Barbara 2014.)

There is violence in Iraq, and it seems that schools and the education programmes could assume a preventative approach for future generations to live in peace.

This paper calls for an all-out education reform that would demand acknowledgement of the failings and the weaknesses of the current education system. The state needs to have a new definition for who Iraqis are, what their shared history is about, how each and every individual's ethnicity and religion can be considered equally, how each of the languages spoken by Iraqis are valid and should be the vehicle of education for its community. The past practices of totally denying Iraq's indigenous diversity and acknowledging only one language and only one religion did Iraq's inhabitant a lot of harm, and it is about time that Iraqis learn at least through their education that there is more than one language, more than one ethnicity, more than one religious belief, and that each and every one of these ethnicities, languages and religious beliefs are valid ones and that members of any community is as Iraqi as those of any other, whether they had become Iraqis since the beginning of history or in the last few centuries or decades, and that it does not do anybody anyone any harm to learn about each other and accept each other. Empirical studies show that people from early age need to have a narrative of their past, and their definition of who they are depends on such associations as they make based on the narratives that have been conveyed to them. The curriculum provides students with narratives of the past and visions for the future. (Paulson, 2011.)

Marginalizing the minorities and avoiding any mention of them in the formal education has not been helpful in constructing a peaceful society. I can refer to a well-known journalist who recently stated that he first learnt about Yezidis' existence when he met the first Yezidi woman to become a member of parliament in Iraq in 2010. Likewise, the majority of the population do not know about the Sabaeans (or Mandaeans), the Shabaks, or the Kakayi or Yarsani communities who have been

living in Iraq for thousands of years. Frequently I hear Iraqis saying ‘He speaks Christian’ as though Christianity was a nationality with its own language. Generally Iraqis will only learn about the national diversity of nationalities and religious beliefs and practices, when they happen to have a neighbour or a colleague who has this or that affiliation. Surely, it would be more appropriate and more politically correct for the Iraqis to learn about Iraq as it is, without ignoring the ‘others’ that are not the majority! Ignoring the ‘others’ by never including them in any of the general-knowledge textbooks in schools had caused a lot of psychological problems for those children who do not belong to the majority nationality or share the religious beliefs of the current government. Children have been made to feel inferior when they could not speak Arabic fluently in areas where the native language was Kurdish, Turkmen, Assyrian, etc., and this has been a factor for some in dropping out of school.

However, when the appropriate educational mind-set is not practiced, even introducing education in the different native languages of Iraq did not go as smoothly as could be expected and may have caused other forms of discrimination, as was definitely the case in areas in Iraq that are now called ‘disputed territories’. The Iraqi constitutions of 2005 (Article 22 of the Constitution) provides for the following: ‘Education is a crucial factor for progress. It is a right secured by the State. It is obligatory in the elementary stage. The state undertakes to fight illiteracy, provides free education for all...’, and in 2006 the Ministry of Education issued a Memorandum of Understanding to the effect that areas that have more than 25% of the population belonging to a minority community, the government will be obliged to provide mother-tongue language instruction. The implementation of this memorandum, far from making peace, has failed to foster peace-building and at times has caused a potential conflict. Shanks (2014: 5)

Issues to do with the diversity of the population are altogether more apparent in the northern Iraqi provinces referred to as ‘disputed territories’. A classic example is Kirkuk, where there are Kurds, Turkmen, Arabs and Assyrians and each claims the right of education in their native language. While in the past all were ignored and were assimilated through the education system, with one set of unified textbooks and teaching practices focusing on adhering to the Ba’ath ideology, they are now allowed to have education in their native language. However, the central government has not allocated funds for them to implement preparation of an up-to-date curriculum in their native languages or for the translation of textbooks, nor has it taken care of preparing teaching staff able to teach in the minority languages. Hence there is a disparity in the opportunities: some, like the Kurds in Kirkuk, could get assistance from the Kurdistan Region of Iraq, but the same arrangement has not been possible for the Turkmen or the Assyrians. Shanks (2014). All the same, we now have a separatist kind of education, in that each minority has its segregated schools, and this does not help with the cohesion of a society already divided. It is of course in the way of realizing minorities’ right to education in their native tongues that they have been allowed to have schools where education is conducted in their mother tongue rather than in the majority language, but it is also helping further to isolate communities from each other.

What is worth attempting in the way of making schools mediums of peace-building is to have a broad education programmes in all schools throughout Iraq, regardless of the affiliation or the language of the school community; schools that would

incorporate the history, the geography and the cultures of all the components of Iraq's ethnicities and religious beliefs. Schools that would also offer the options of learning one or another of the minority languages. Imagine if a child in the south of Iraq whose native language is Arabic and whose religion is Islam were to have the option of learning any of Kurdish, Turkmen or Assyrian! Would not this child's familiarity help in making him feel familiar and at home with the whole community that speaks this minority language? Imagine if children in Iraq were to be taught briefly about the various religious beliefs that are indigenous to Iraq's population; would not this help the child in having respect for others beliefs? It would be more appropriate than calling people with different beliefs 'infidel', as is the case with some religious extremists nowadays. These are gaps in the general knowledge on offer in schools in Iraq; education for peace-building should cater for overcoming these gaps. There is a clear legitimate case for the formal education system to provide in its school programmes a reference to the national and local histories of all Iraqis, and to provide a common narrative that would have the consent of all Iraq's ethnic and religious components.

Lack of team-building practices within schools, such as sport and art activities, has also contributed in denying the children of Iraq a context for establishing common forums among them. This is true on the level of all localities, and it is a major gap in the education system in Iraq. With the outbreak of the Iraq-Iran war and the consequent underfunding for the education sector, sport, art and music gradually disappeared from schools.

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***Belonging: Blurring the Boundaries***

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The European Conference on Education 2014  
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**Abstract**

This paper explores Whitchurch's (2008) notion of the 'third space' in the context of articulating students from Further Education to Higher Education. This research appropriates the term 'third space' and applies it to the emergent territory occupied by college students 'crossing the boundary' to university. The concept of the 'third space' allows us to explore the notion of belonging in relation to direct entrants seeking to establish their role in the unfamiliar zone between college and university. Research examines the implications for college students of this 'blurring of boundaries' and how they establish a sense of belonging and creditability in the university context. Empirical research makes use of focus groups involving articulating students from Further Education directly into the third year of an adjacent degree course to determine if and why a 'sense of belonging' is important, what affect it has on performance, and to establish barriers to, and strategies for, successful boundary crossing from college to university. As Whitchurch highlighted secondment, mentoring and study leave as influential in the success of the unbounded professional, this paper proposes that interventions can be carried out to increase the sense of belonging and likely success of articulating students, notably, drop-in lectures, tutorial support (from HE academic staff), guest lectures and open days. This research is particularly relevant as the Scottish Government aims to remove barriers to widening access and participation in Higher Education. Research findings can inform best practice approach at universities, enhance the experience of articulating student, guide policy makers and aid knowledge transfer.

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## Introduction

This paper explores Whitchurch's (2008) notion of the 'third space' in the context of articulating students from Further Education to Higher Education. This research appropriates the term 'third space' and applies it to the emergent territory occupied by college students 'crossing the boundary' to university. This research is particularly relevant as the Scottish Government aims to remove barriers to widening access and participation in Higher Education. Research findings can, therefore, inform best appropriate interventions at universities, enhance the experience of articulating student, guide policy makers and aid knowledge transfer.

This paper begins by presenting an overview of widening access and articulation within the Scottish higher education (HE) system. Articulating students must negotiate a number of barriers when crossing the boundary between college and university and these are explored, initially, through key theoretical concepts and Whitchurch's notion of the 'third space', before proceeding to examine the issues experienced by 'third space' articulating students through empirical research. Conclusions have a dual purpose, adding to the body of knowledge within the field while, also, informing best practice approach for the Associate Student Project (ASP) at Edinburgh Napier University.

## Context

The current educational landscape within Scotland has shifted significantly in recent years with a steep change in the area of widening participation in the local market and increased articulation opportunities for students progressing from college to university. For ten years the Scottish Funding Council (SFC) has supported articulation of students with HN's to degree study as a method of widening participation and increasing rates of access to university. The students follow the '2+2' model and the four year Scottish degree is achieved with no loss of time as they continue with advance standing in Year Three at university. This model, however, poses significant challenges for HE institutions and the articulating students themselves as they struggle to 'fit-in' and adapt to the new learning environment and academic expectations. Christie et. al state, 'they are expected to be on a par with the cohort they are joining and they have less time to adjust to the learning environment and hence more to lose' (2013). As the Scottish Government aims to remove barriers to widening access and participation in the HE sector, primarily by the removal of fees for local students and ambitious targets for HE institutions, the participation figures were expected to rise. Unfortunately, even with this increased emphasis and investment, participation in higher education in Scotland continues to be the poorest in the whole of the UK (NUS, 2014, p. 5).

In 2013, in order to encourage students to engage in higher education, the SFC introduced additional funded places for students who are known as Associate Students. For the academic year 2013/14 Edinburgh Napier University was awarded funding for an extra 107 places for Associate Students articulating to university for the Third and Fourth Year of a degree programme. These students receive dual enrolment and in effect wear 'two hats' – that of the college student studying for their HND and that of a university student who is working towards Third Year entry. As an institution, Edinburgh Napier University, through The Associate Student Project

(ASP) based in the School of Computing, has introduced targeted learning opportunities to enhance student progression and attainment by addressing barriers to success in the very different HE environment and these will be discussed at a later stage in this paper. Students who cross the boundary from further (FE) to higher education encounter a number of challenges and these will now be engaged with on a theoretical basis.

### **Theoretical Concepts and Framework**

The unique challenges faced by students making the transition from college to university can be understood by exploring a number of theoretical concepts inherent to establishing identity in a new context. The notion of 'transition' itself is a key concept and delineates the period of change experienced by students as they progress from FE to HE. As they make this transition concepts such as 'boundary objects' and 'boundary crossing' become significant (Akkerman & Bakker, 2011; Star, 2010). Akkerman and Bakker (2011) understand the term 'boundary' as 'sociocultural differences leading to a discontinuity of action or interaction' (p.133). In this paper, the boundaries we refer to are those that are embedded in the divergent delivery systems represented by partner colleges and the University (Edinburgh Napier University). Students in transition are faced with boundaries in two main areas. Firstly, from college to a new university campus - in the physical sense the campus change requires orientation and adaptation to different travel routes, perhaps a new lodging location, changes to library facilities, an alternative method of receiving email and logging into the IT systems, new support infrastructure and, significantly, a new staff and student cohort. Secondly, transitional students are required to adapt to a shift in curriculum from content-led within college, to research-led within the university, and new expectations of independent learning.

Moreover, these different modes of learning can mean that there is a negative perception of articulating students, within the HE context, as ill-equipped in terms of entry requirements and academic grounding. Cohen & Garcia (2014), amongst other academics, argue that these negative stereotypes can have an adverse effect on academic performance and establishing a sense of social 'belonging' in the educational context (see also Zigler & Butterfield, 1968; Steele, Spencer, & Aronson, 2002; Schmader & Johns, 2003). When crossing the boundary from college to university, therefore, students encounter a range of transitional barriers which are logistical, academic and social in nature. As we examine the boundaries and barriers faced by students in transition we can introduce interventions to bridge the gap between FE and HE. The Associate Student Project conceptualises our work with students, making the transition from college to university, as helping them to effectively negotiate these boundaries and to integrate both academically and socially.

Whitchurch's notion of the 'third space' is a useful means of exploring the paradoxes at the heart of transitioning from one manner of working to another (2008). Whitchurch explores professional identity in the HE sector and how the roles of staff have shifted as they appropriate new modes of identity by expanding their remit to accommodate new dimensions of working. Increasingly, professional staff are developing more academic skills, while academic staff are moving towards more project-based work. Thus blurring the traditional boundaries between academic and professional functions in the HE context and creating a new type of 'blended

professional' (2008, p.4). Whitchurch posits the notion of the 'third space' to define and explore the emergent territory occupied by HE staff who fulfil both academic and professional functions. 'As a result of blurring boundaries between activities, what might be described as *third space* has emerged between professional and academic domains' (2008, p.7).

This research appropriates the term 'third space' and applies it to the undefined area occupied by college students crossing the boundary to university. The concept of the 'third space' allows us to explore the barriers which characterise the unfamiliar zone between college and university.

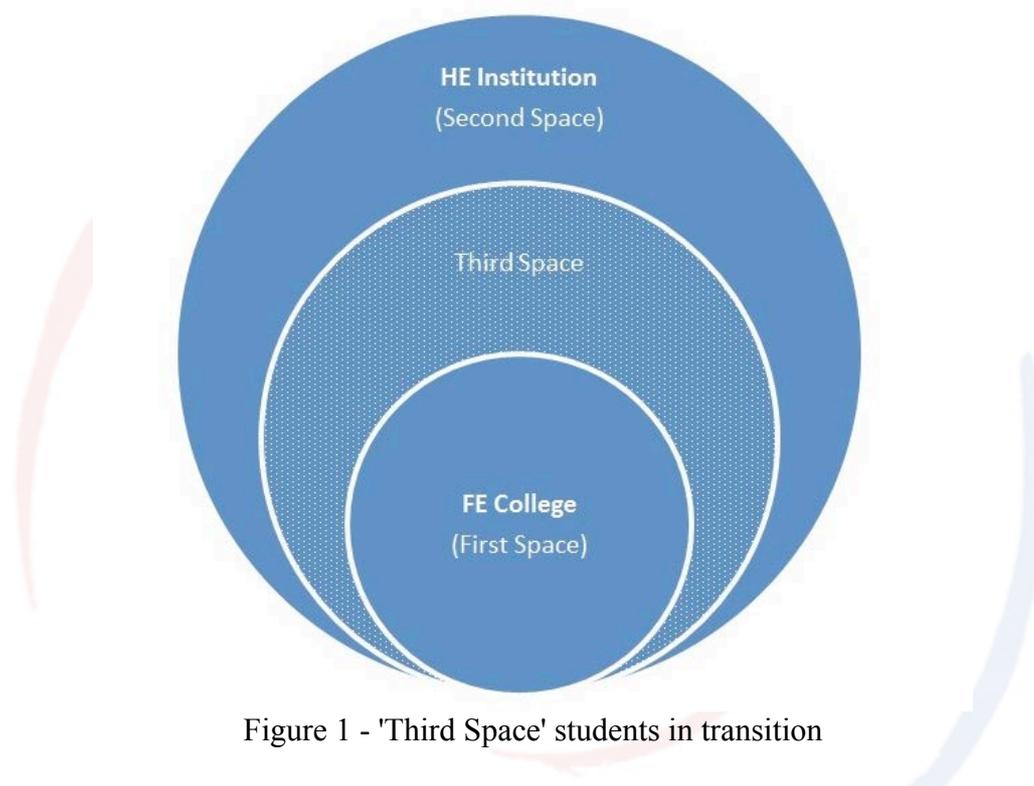


Figure 1 - 'Third Space' students in transition

Figure 1 illustrates the notion of the 'third space' and what it means for articulating students. Initially, students begin their academic journey in college where they study for their HND – this is the 'first space'. During this two year period Edinburgh Napier University has introduced interventions to help 'blur the boundary' between FE and HE. Before the introduction of the Associate Student Project in 2013 students crossing the boundary did so with little or no support from the institution. They were expected to adjust academically and socially, integrating seamlessly with the third year cohort, when they made the transition to university – the 'second space'. We define the notion of the 'third space' to be the blurred area between college and university. This space, during transition, exists for an extended period of time from initial application to university, during the Second Year at college, and extending to the end of the first trimester in year three at university – a total time frame of approximately one year. Through empirical research this paper examines the implications for college students of this 'blurring of boundaries' and how they are able to establish a sense of belonging and credibility in a university context.

## Methodology

This paper examines the barriers experienced by articulating students who inhabit the 'third space' between college and university. Research explores the following issues that evolve from 'third space' working and, consequently, may impede the success of direct entrants:

- Why is a 'sense of belonging' important?
- What affect does a feeling of 'belonging', or lack of, have on academic performance?
- What are the barriers to successful boundary crossing from college to university?
- How can we overcome these barriers?

A multilateral approach to empirical research is employed including two focus groups, an interview and an anonymous follow-up questionnaire with direct entrants. Each focus group involved five participants, selected by responses from an email sent out to all direct entrants enrolled in Year Three of a Computing degree programme at Edinburgh Napier University. As this study is interested in direct entrants and their experiences of 'third space' working, qualitative methods of data collection are considered most appropriate and focus groups allow us to gather rich perspective on the collective, localised views of the target market (Pickering, 2008, p. 73). Krueger & Casey (2000) propose that this research approach is a dynamic process, which is flexible not standardised, allowing the moderator to follow-up on relevant points of discussion.

However, while there are a range of advantages to the focus group method, in the context of this study, the public nature of the set-up is less conducive to open honest communication about private subjects. Academic and social transitioning can be particularly sensitive topics for students to discuss in front of their peers, particularly if challenges have been experienced. It was, therefore, determined that triangulating research findings with an in depth one-to-interview and a follow-up anonymous questionnaire, undertaken by all eleven direct entrants participating in the study, would offset any methodological limitations.

The questionnaire was based on the PISA 2000 study: 'Student Engagement at School: a Sense of Belonging and Participation'. This study makes use of a questionnaire 'to measure two components of student engagement at school – sense of belonging and participation', with 'participation' referring to 'skipping school, paying attention in class, doing homework' (2000, p. 11). However, while PISA focuses on school students, this research examines the experiences of direct entrants after transitioning from college to university (2000, p. 64). Participants were asked a series of questions to determine views on how well they had integrated socially at university and whether this had any impact on academic performance. Participants responded to questions using a four-point scale, which included: 'strongly disagree', 'disagree', 'agree' and 'strongly agree'.

Coding was employed as a grounded and systematic data reduction technique for synthesizing insight generated from focus groups and the interview. The raw data was coded, according to the research aims, with a view to determining emerging

patterns and ideas (Basit, 2003). At all times, ethical considerations were a priority and participants were fully cognisant about the aims and outcomes of the study, informed consent was obtained, and student contributions were anonymised to protect the confidentiality of all participants in the study. This multilateral approach to research explores the barriers which define 'third space' working and seeks to determine if and why a 'sense of belonging' is important, what affect it has on performance, and to establish barriers to, and strategies for, successful boundary crossing from college to university. These research questions will now be addressed in relation to findings.

## Findings

Whitchurch's concept of the 'third space' allows us to explore the notion of belonging in relation to direct entrants seeking to establish their role in the unfamiliar zone between college and university. Through focus groups, an interview and an anonymous questionnaire, conducted with direct entrants, the following considers the repercussions for articulating students of 'blurring the boundaries' between college and university and how direct entrants are able to achieve a sense of social belonging and academic creditability at university.

### *Why is a 'sense of belonging' important?*

Whitchurch posits that 'A sense of belonging to a particular project or team...has implications for the credibility of individuals in their current roles and for their future career paths' (2008, p. 9). In relation to direct entrants, therefore, after transitioning to university it is paramount to establish a sense of belonging in the new HE context as this has implications on present and future performance. However, the outcome of the anonymous questionnaire, undertaken by all participants in this study, identifies that 44 per cent of direct entrants surveyed feel like they do not 'fit-in' at university.

Although, some responses indicated that 'fitting-in' was not a barrier to achieving at university, one student argues 'I think it's very independent anyway so it doesn't matter if you fit in or not', for some students transitioning into an already established cohort can be challenging. 'I do get on well with people', comments one participant, 'but there are groups that have already formed and been there from first year already. They stick together more and it's harder to infiltrate that'. The implications of feeling like an outsider is encapsulated by the following comment, 'If you feel like you fit in you're not going to think I can't be bothered to go, I'll just stay at home'. Thus suggesting that establishing a sense of belonging has a direct correlation with retention rates and performance.

### *What affect does a feeling of 'belonging', or lack of, have on academic performance?*

A range of studies have been conducted to examine the relationship between 'belonging' and performance. Interestingly, the PISA 2000 study, 'Student Engagement at School: a Sense of Belonging and Participation,' concludes that a 'Students' sense of belonging and participation are not strongly related to each other at the individual level and both of these dimensions of student engagement are only weakly related with literacy performance' (2000, p. 54). The PISA study, therefore, hypothesises that belonging and participation are not intrinsically connected. Conversely, the outcome of the questionnaire conducted with direct entrants contradicts this premise with 64 per cent of students 'agreeing' or 'strongly agreeing'

with the notion that how well they have fitted-in at University has impacted on their grades.

Indeed, a range of studies would support this idea with Cohen & Garcia concluding that ‘a salient social identity can trigger psychological threat and belonging concerns’ and these ‘can produce persistent performance decrements’ (2014: 365; see also Zigler & Butterfield, 1968). This premise is endorsed by one focus group participant who suggests that ‘For me, if I came on my own, and didn’t know anybody or make connections with anyone it would seriously impact on me staying on’. The benefit of social integration and how it can positively influence academic performance is further illustrated by another student who comments ‘I like bouncing ideas of students and staff and having a big group around you to call upon’. Establishing a sense of belonging can, therefore, influence performance but what do direct entrants perceive the barriers are to achieving successful social and academic integration at university?

*What are the barriers to successful boundary crossing from college to university?*

While a small cross-section of respondents determine that the transition from college to university is largely a smooth one, with one individual stating, ‘I can’t think of any barriers’, the students involved in this study broadly divide the transitional challenges they experienced into two main areas: social and academic. In relation to academic barriers, moving from the college curriculum and mode of working, to the university educational environment, was perceived as a challenge with one direct entrant explaining that ‘I think coming into third year the demands workwise are a huge jump’.

Aside from potential academic issues, crossing the boundary from college to university has a number of social repercussions. These can be logistical in nature, with one participant stating that, ‘The first two or three weeks the direct entrants are very new and we’re trying to find out where the toilet is, where the café is and you’re aware that there are people more comfortable because they’ve been there two years’. Campus familiarity is not the only concern for direct entrants but, additionally, the established relationships that university staff have with continuing students, for direct entrants can emphasise, and compound, the feeling of being an outsider. ‘You’ll hear members of staff referring to continuing students by their first name’, says one individual, ‘and there’s nothing wrong with that because they’ve been here but it sunk in that these people are known and familiarised with staff and the environment’.

A less tangible barrier for direct entrants to negotiate are negative perceptions. One direct entrant reports that ‘When we came [from college] there was a perception that we’d had a ‘slacker education’ to get to this point, we’ve not been through the university process’. A range of educational studies have been conducted which explore the effect negative stereotypes and perceptions can have on social and academic integration (Steele, Spencer, & Aronson, 2002; Schmader & Johns, 2003; Cohen & Garcia, 2014). For example, Steele et al, argue that ‘a fear of confirming a negative stereotype...can undermine performance by raising stress and increasing mental load’ (in Cohen & Garcia, 2014: 365). It is, therefore, vital that this barrier, and any social/academic challenges identified by direct entrants in this study, are responded to by implementing university interventions.

*How can we overcome these barriers?*

The professionals in Whitchurch's study identify 'secondments, mentoring and study leave' as effective strategies to support 'third space' workers at HE institutions but what do the sample of direct entrants propose could be done to support 'third space' students (2008: 11)? One participant argues that closer curriculum matching for HN's and degree courses could offset any academic challenges felt by Third Year entrants, 'If they made the modules at college more specific towards university than it would have been ok'. According to another individual, more visits from university staff to college sites would be beneficial, with one participant stating that HE staff could 'say this is the course you're going to be doing, this is what you need to know', while another student proposes that 'they [university staff] could see what you'd done and advise you to take a certain course'. Increased university staff engagement, therefore, might facilitate college students to make more informed decisions regarding university course selection and enhance academic preparedness.

In terms of the social barriers that direct entrants experienced, strategies to overcome these challenges focus on creating social bonds at university. One participant suggests that having a key contact to discuss issues with can promote successful boundary crossing, 'The support teacher we had, she said 'any problems come to me'. It takes a huge weight off your shoulders'. Additionally, events organised through Edinburgh Napier University reportedly allowed students to socialise, ask questions and engage with university life. 'The Fresher's Fair that was an eye-opener and really good,' comments one student, 'it gave you an insight into what happens. The open days were also a good help. You met people beforehand and when you started Uni you recognised them'. Moreover, online avenues are another effective method to promote social engagement, one participant states that, 'I do think the Facebook page did help us because we had another line of communication with the people on the course'. Online interaction, through Facebook, can help to create a sense of community in what would otherwise be a disparate group where continuing and articulating students can be predisposed to segregation, finding it difficult to blend in with the existing student cohort (Jenkins et al., 2012). In conclusion, research proposes that social barriers can be overcome by utilising engagement methods such as events, key contacts and social media. The challenges raised by 'third space' students, transitioning from college to university, have informed strategies to identify, and overcome, any barriers to articulation at 'Pre-Entry' and 'Post-Entry' level. The Associate Student Project team, based in The School of Computing, at Edinburgh Napier University is currently working hard to determine and implement best practice in articulation.

**Recommendations**

The findings presented in this paper represent a small dimension of The Associate Student Project examining best practice in articulation at Edinburgh Napier University. The ASP, through partnership working with colleges, research and evaluation, is developing a new model for articulation which will directly impact on student performance, retention and achievement. The ASP has implemented and developed a number of initiatives to support best practice in student articulation. As a result, all research that is undertaken has a dual purpose - to add to the body of knowledge on articulation but, also, to inform strategies for academic approach.

Whitchurch's notion of 'third space' allows us to understand the barriers experienced by students crossing the boundary from college to university and shapes strategies to support this transition. The 'third space' starts when students consider their next step on the academic ladder: which university should they apply to, which course is suitable, what are their options? At this stage advice from college staff is fundamental to inform university and course selection, alongside university open days and marketing information. At this time 'third space' students consider whether they will 'fit-in' and be accepted into the Third Year cohort – will they belong, are they capable, is it for them, will they be accepted? As the 'third space' journey continues students may visit the university during open day or meet with key members of academic staff and students, during this visit it is of significant importance that students are made to feel welcome and valued in the university context. The focus of the open day should not be on First Year entry as this may alienate the direct entrants and affect their perceived sense of belonging. Once the first trimester at university begins 'third space' students may feel overwhelmed by the academic and social changes and the magnitude of the journey may 'hit home'. It is, therefore, important that there are support measures in place.

The ASP has introduced a series of interventions to support this 'third space' journey. Open days have been tailored to focus on direct entrants alongside First Year entrants, academic staff visit colleges and give guest lectures to orientate students with the research-led curriculum of the HE institution and drop-in lectures allow college students to join in a lecture in a relevant subject and be part of the First Year cohort. All of these interventions are designed to blur the boundary between college and university and enhance the experience and journey of 'third space' students.

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***Strategies for Digital Inclusion: Towards a Pedagogy for Embracing and Sustaining Student Diversity and Engagement with Online Learning***

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**Abstract**

This paper reports on a current PhD study which aims to develop a conceptual framework for effective teaching and learning approaches that influence digital inclusion and exclusion of diverse students. It will also seek to identify differences in learner characteristics and how these characteristics impact on their needs, experiences and engagement with using technology for learning, specifically on a blended learning programme. The study will move away from traditional definitions of diversity and explore the different characteristics of a varied learner population. The research methodology adopts a critical realist perspective, using a multi-phase mixed methods study which will evolve sequentially through four distinct phases. The focus of this paper is to outline the research to date, which at the time of writing has completed Phase 1 and has implemented Phase 2. Findings from Phase 1 suggest that digital exclusion cannot be predicted or dealt with by categorising students into groupings of: gender, age, ethnicity, geography, socio-economic status and educational background. Additionally, the findings indicate that digital exclusion is influenced by external factors, such as elements of the course content or navigation of the virtual learning environment rather than internal factors such as individual technological skills. The paper concludes with preliminary findings from Phase 2, which concur with findings from Phase 1 and goes on to suggest strategies to make the university induction process more effective.

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## Introduction

Historically, Information Communication Technology (ICT) use (or non-use) has been measured by researchers and educational establishments by categorising students into non-traditional participation groupings such as: gender, age, ethnicity, geography, socio-economic status and educational background. For example Boonaert and Vettenburg (2011) study of young people talk about a digital divide as 'unequal access to the internet and its use' that is influenced by demographic factors such as age, gender and socio-economic status. More recently Ofcom (2012) has suggested that traditional conceptions of this divide might be out of date and misplaced as over 95% of UK households with children now have access to the internet. The current trend for encouraging widening participation in higher education institutions (HEI) (Department for Business, Innovation and Skills, 2012) and the vast range of courses on offer in the United Kingdom (UK) has resulted in a more varied student population, compared to the traditional university population (Universities UK, 2012). It is fair to say that the basic set of measures above, once used to determine student involvement with technology could now be seen as outdated. In a recent study of student's participation in online learning, Johnson (2011) observes that it is essential to understand student characteristics and how they may influence the learning process and outcomes.

University costs have soared in the UK since the 2010 coalition government came to power, (UCAS, 2013) so financial savvy students have become more selective consumers looking for a product that meets all of their needs. Gone are the days when a university campus would mainly consist of college and sixth form leavers pursuing a four year taught degree to start a career. HEIs now cater as much for non-traditional students undertaking short and top up courses, foundation degrees and professional development, as they do for once conventional students.

Not only has the student population and courses on offer evolved but the way in which the courses are delivered has advanced too. A modern online learning environment can offer blended learning programmes that provide opportunities to access course materials, collaborative software, discussion boards, wikis and other learning technologies at university, from home or on ubiquitous mobile devices (Holzinger et al., 2005) and can assist the learning process, (Means et al., 2009). There are many definitions of blended learning, including the ratio of the methods being blended, the blending of different pedagogical models and the variation of learner experience (Oliver and Trigwell, 2005). According to Garrison and Vaughan (2008) a misconception of blended learning is that its aim is to combine face-to-face (f2f) and online delivery, often to minimise lecturer workload. Additionally, Launer (2010) suggests that blended learning does not even have to involve online learning but could utilise a blend of f2f delivery and self-study. However, this study defines blended learning as the facilitation of teaching and learning using a combination of f2f and online methods, where technology replaces elements of a unit (Mason, 1998) and it is this combination that this research will investigate.

## Original Contribution to Knowledge

The aim of the research is to identify differences in learner characteristics and how these characteristics impact on their experiences of using technology for learning. The

findings will be incorporated into a conceptual framework for effective teaching and learning approaches and of factors that influence digital inclusion and exclusion. The conceptual framework will be an original contribution to the body of knowledge in educational research.

Specifically, the objectives of this study are:

1. To explore the characteristics of learners and analyse their influence on digital exclusion and inclusion.
2. To investigate what current and emerging pedagogies are being used for engaging students with technology enabled learning (TEL).
3. To assess the value of current and emerging pedagogies with a diversity of learners.
4. To examine what students need to be effectively engaged with a blended learning programme.
5. To incorporate the findings into a conceptual framework for effective learning approaches and of factors that influence digital inclusion and exclusion.

By combining a sequential mixture of qualitative and quantitative methods, the illustration below demonstrates how through four phases, a conceptual framework will be created.

Phase	Objective	Method	Sample
1	1	Semi structured interviews	Undergraduate Health and Social Care students, Bournemouth University
2	2	Semi structured interviews	Undergraduate Health and Social Care students, Bournemouth University
3	3 & 4	Survey	Undergraduate students (mixed schools), Bournemouth University
4	5	Action research	Undergraduate students, Southampton College

Table 1 Illustration of research design.

## Literature Review

The rapid momentum that ICT gains in its development signifies an urgent re-evaluation of whether students' experiences of digital exclusion and inclusion are the same now as they were before technology was a ubiquitous part of life.

Conventionally, diverse students are categorised by a widely used set of demographics. As far back as the 1800's authors and researchers refer to diversity in education. For example, Sir Edward Taylor (1870) writes about "race", "origin" and "culture" (p.2) when he discusses language learning in his book. Yet much of the literature that focuses on student diversity was before technology was common place in education and certainly does not reflect the rapidly gaining momentum of advances in technology and its impact on the learner and their needs. Furthermore, it is entirely possible that some students will fall into one or more of the groupings (Taylor and House, 2010). A review of historical and recent literature documenting diverse

learners shows that only demographics such as gender, age, ethnicity, geography, socio-economic status and educational background are used.

An exploration into five aspects of higher education by Haggis (2006) found that with so many diverse students choosing HE, conventional support is unrealistic and that it is up to the educational establishments that provide for these students to move away from traditional support networks and concentrate on new teaching and learning approaches. Importantly, adapting courses so as to utilise new technology, will enable the diverse student population to access and learn the subject.

A study of university students conducted by Yorke and Longdon (2008) found that students failing to adjust to different and unfamiliar teaching and learning environments were 'at risk' of withdrawing from their program of study. Of those, mature students are more likely to 'drop out' in the first year of study compared to younger students (Coffield et al., 2004). According to Knowles, (2011), older learners, argued to be 'digital immigrants' by Prensky (2009), learn in a different way to their younger counterparts. This humanistic view of Andragogy, the science behind the teaching of adults, proposes that adult learners may need different support networks to younger learners such as, academic, technical or pastoral support for self-managed learning. Recently, a great deal of literature has argued against Prensky's digital native/digital immigrant concepts (McKenzie, 2007 Kennedy et al., 2010). His assertions concerning digital immigrants can be misunderstood. When he talks about digital immigrants, he refers to the time in which they were born and not the level of technological competence they possess. However, despite these gloomy assertions for older learners, over two thirds of students obtain qualifications later in life (Jenkins, 2013). This signifies that older learners are using HE to improve life and career chances more than ever.

Gender can impact on how students learn (Bennet and Marsh 2003, Wehrwein et al. 2006). Female students are less likely to speak out in a traditional face to face classroom environment yet in online course discussions are more likely to voice contributions, in turn impacting on perceived deeper learning, (Anderson and Haddad, 2005). Kay (2008) reports that male learners have higher self-efficacy than females when learning online but females are slightly more positive about the online learning experience and perform better on computer-related tasks. In contrast, research exploring gender perceptions of e-learning found that female learners place more importance on the planning of e-learning activities and value contact with the teacher (González-Gómez et al., 2012).

Teacher contact and more specifically monitoring of student progress and support, was found to be essential elements to successful online learning for multi-cultural students according to McNaught and Vogel (2004). A number of researchers have studied the preferences of different ethnic groups towards online learning (Chin et al., 1999, Munro-Smith, 2002, Huffman Leyva 2005). However, Boyette (2008) points out that there is little research on some ethnic groups with reference to online learning. Online content itself is a cause for concern. Heemskerk (2005) suggests that on a practical level, certain ethnic groups are under- represented in e-learning materials.

According to some of the literature, where students live impacts on their use of technology. There are areas in the UK that are 'digitally unengaged' (Longley and Singleton 2008). Longley and Singleton's study showed that approximately 1.15 million people in England live in an area of digital unengagement, in turn impacting on educational success with technology. Unengaged areas are more often than not linked to areas of material deprivation but not always. In some coastal and rural areas the geographies are different. There is little material deprivation but other factors influence digital unengagement, such as lack of or slow bandwidth is a major factor along with the ages of the population.

As previously mentioned, geographical unengagement is often linked to material deprivation. Generally, the digital divide represents the gap between people who can use and have access to technology and those that do not. Chen and Wellman (2004) describe the digital divide as 'differences between those who have all the necessary resources to participate in current society and those who do not' (Eynon, 2009 p.27). Lichy (2011) talks about a 'second-level' digital divide within the UK. Their study investigated students and their use of the internet. Largely down to the Labour Government's 2008 'Home Access' scheme, which provided lower income families with IT equipment and internet packages, they concluded that there was no longer a significant 'divide' between students being able to access the internet or not; the 'second-level divide' appeared in the way in which the internet was being used. Although this scheme has now ceased, families will still benefit from the equipment provided and as stated earlier, 95% of families now have internet access (Ofcom, 2012). Students from higher socio-economic backgrounds used the internet more for school and home work than lower socio-economic groups. This is backed up by an Ofcom (2012) study that suggests that internet access at home is now close to entirety across all economic classes. These are encouraging reports considering that school pupils who are eligible for Free School Meals (FSM) are less than half as likely to go to university as other pupils (BIS 2012).

Many universities in the UK encourage students to enrol on courses regardless of previous academic success but with evidence of career experience in the subject. This has resulted in mixed academic (proven) ability within cohorts, (Wooden et al., 2001). Students who enter HE with 'non-traditional' qualifications could be disadvantaged due to the lack of preparation for essay writing and study skills (O'Driscoll et al., 2010). Students who are most likely to say they are not interested in connecting to the internet are those with lower levels of education (Helsper and Godoy-Etcheverry, 2011). However, Koivusilta et al. (2007) propose that links between educational background and technology use is in the activity itself and not the time spent on it. In particular, digital gaming was linked to poor school achievement in some cases.

A search for e-learning pedagogy in the literature revealed a lack of research into specific models and frameworks directly influencing teaching and learning using technology. Mayes and DeFreitas (2004) concluded in their e-learning review that there were no e-learning models, only e-enhancements of existing teaching and learning models and frameworks. An example of this is Mason's (1998) models which are influenced by distance learning. He states that, 'All of the elements I am about to discuss are very familiar educational approaches - they are simply being adapted and re-discovered in their online form' (p. 3)

Of course, we have been offered Gilly Salmon's 5 Stage E-Moderating Model (2004) but this specifically describes the stages of participation in an online community and does not set out to address e-learning pedagogy per se. The most recent and influential review of e-learning was conducted by Conole in 2010. Her report sought to review pedagogical models and how they were being used in an e-learning context. Conole's review follows a number of other comprehensive reviews on e-learning pedagogy (Mayes and DeFreitas 2004, Beetham 2005, Dyke et al. 2007, Conole 2008, Almutka 2009) but as technology is a moving target with regards to development, dated reviews, although important, cannot account for these new advances. Additionally, all of these reports (on the most part) reviewed how e-learning 'fits' in with different pedagogical approaches, almost shoe-horning technology into something within which it can be given a pedagogical label. JISC's E-learning Programme (2012) goes much further to understanding e-learning pedagogy. They ran a series of studies that incorporated different aspects of e-learning but nothing specifically investigating blended learning and student characteristics since 2009 (Conole et al. 2009), which looked at e-learning in a practice-based context. In practice, experienced teachers often use a tried and tested approach to designing activities that subconsciously incorporate theories and approaches to teaching and learning. With new technologies introduced into the learning environment there can be a difficulty in understanding how and why to use them (Falconer and Conole, 2006).

It can be seen from the literature that there is no shortage of research investigating how diverse groups interact with technology. Studies which include research on these groups go some way to explain the challenges that certain students may face when using ICT within an HE environment. Fewer studies however, have considered combinations of groups and no study has investigated whether there are other characteristics that may be influential in technology use (or non-use). Additionally, e-learning pedagogy, which sets out effective strategies for online teaching and learning, seem to be adapted from traditional pedagogical frameworks, are outdated in the context of emerging or disruptive technologies or are influenced by other forms of online learning such as distance learning.

## **Research Design**

A multi-phase combination mixed methods approach will be used sequentially in this study. Mixed methods research involves philosophical assumptions that guide the data collection and analysis of quantitative and qualitative approaches in many phases (Creswell and Plano Clark, 2007). The research takes place at Bournemouth University (BU) in the south of England. A sample of undergraduate Health and Social Care (HSC) students were the focus of Phase 1. Semi-structured interview techniques were adopted as the initial method to encourage rich descriptions. In line with a critical realist approach, interviews will allow participant's to describe their experiences of digital inclusion and exclusion in their own words. This method will also expose which characteristics affect barriers to digital inclusion and uncover the wide-ranging needs that influence engagement with blended learning programs. The interviews took place after the completion of a particular unit on a blended learning course. Phase 1 is currently being replicated with a new sample from HSC and forms the basis of Phase 2. The Programme Leader was approached to confirm that the unit remained the same from the previous year with no variables that could affect the

analysis. Phase 2 (2014) is a year on from Phase 1 (2013) and some initial findings will be discussed at the end of this paper.

A thematic analysis framework will be adopted to analyse the data from Phase 1. At a rudimentary level, thematic analysis is a method for recognising, analysing, and reporting patterns within data. Thematic analysis is favoured for a critical realist approach (Roulston, 2001) although its flexibility allows it to be utilised across many epistemological and theoretical stances. Braun and Clarke's (2006) hierarchy for qualitative data analysis has been adapted for the analytical process using Nvivo software to manage the data.

To ensure a level of trustworthiness and quality in the study, the researcher used a triangulation of methods as suggested by Guba and Lincoln (1989, 1994) as well as the Consolidated criteria for reporting qualitative studies (COREQ): 32-item checklist adapted from Tong et al., (2007).

### **Findings and Results**

As a result of the data analysis, themes were generated from the nodes. Further, characteristics were identified from the participant's narratives and compared to the existing literature.

Digital exclusion is defined in this research as being unable to access or use technology, or use it in the way it was intended to facilitate the learning process for any reason. 13 out of the 16 participants disclosed attitudes towards digital exclusion in some form. The main themes that emerged were:

- Appropriate content
- Compatibility
- Clarity
- Peers
- IT support
- M-learning
- Equipment
- Navigation and logging in
- Online submission

The data revealed that the most significant area of exclusion for the sample is in perceived irrelevant or confusing content of course material. Feelings of frustration and stress can be experienced if online content is not clear. Moreover, unclear face to face content can influence the frustration when students then work independently online. This mirrors a similar study by Beaudoin et al (2009) who researched student's online experiences that affected satisfaction. As discussed in the literature review, Anderson and Haddad (2005) found that female students' perceptions of deeper learning were facilitated by online discussion. It could be the case that the students were not participating as planned or did not appreciate why they were being asked to complete this part of the course as they were. Another significant finding is the experiences of participants with compatibility. A common pattern of frustration was not being able to access information at home due to incompatibility issues. This is a potentially significant problem for those students who are to study a blended learning programme. Peers can contribute to digital exclusion by not participating

appropriately in collaborative tasks. This can lead to other students feeling awkward and possibly not completing the task to their best ability. Peers also contribute to the problems that are encountered on group Facebook pages, generating rumours and false information. The data reveals that IT support within the university is widely offered and utilised. There are a number of support networks in place within HSC that students seem to be unaware of. Phase 2 will pursue the reasons for this in more depth. M-learning is described as the use of handheld technology that relies on wireless and mobile phone networks, to aid teaching, learning and support, (m-learning.org). With this in mind, the BU app is very much part of the student's support network. However, some participants were unable to use it effectively, especially with iPhones and iPads. Negotiating the Virtual Learning Environment (VLE) through a number of tabs and entering your student password and ID three or four times to access one form causes some frustration with the participants. Others reveal that submitting essays online can be problematic if left until the last minute as others are also trying to submit and the system can crash. This is particularly concerning when a deadline has to be met.

After the themes had been identified, characteristics that were revealed by the interview participants, were organised to indicate which were dominant, that is most prevalent in each theme. They were:

- Age
- Geographic's
- Previous jobs/life experiences
- Year of study
- Course of study
- Motivations
- Hobbies
- Family
- Previous qualifications

The most interesting revelation from the data is that there appears to be no age limit to digital exclusion or inclusion. Additionally, many of the students who shared characteristics across a number of themes also fell into one or more of the traditional groupings. This highlights the complexity of students and erroneous task of trying to group them in order to predict how they might engage with technology. Any age can experience aspects of exclusion. This is contrary to much of the literature that suggests that older learners experience digital exclusion more than their younger counterparts.

### **Limitations**

As this research utilises interview data collection techniques and is grounded in critical realism beliefs, it is subjective and based on personal interpretations of the researcher. The findings from Phase 1 are limited to one unit of a course being studied within one school at Bournemouth University. The unit is delivered with a blended learning model but it is recognised by the researcher that, as discussed in the introduction, other courses/units may have a different blend of methods. It is also recognised that the sample in Phase 1 was fairly small, although saturation had been reached.

## **Preliminary Discussion**

So far, this research suggests that there is no typical demographic that is more closely associated with digital exclusion or inclusion than any other. Most of the participants that took part in the study experienced exclusion of some form or other during the unit studied. Most of the participants felt exclusion in the form of the content being used to facilitate the unit and not their own technological skills. It could be argued that technological advances within IT are so ubiquitous and widespread in our homes, learning to cope with technology is becoming a lifestyle. Another interesting observation from the research was how previous experiences of technology affect how the participants feel about the technology now. There is evidence from the literature that says that prior experiences of technology use influences attitudes and perceptions towards current use of online learning (Muilenburg and Berge, 2005). This would explain some of the more negative perceptions of the participants. Additionally, general experiences during the course can impact on how the participants feel about technology, as if the lines are blurred between technological and non-technological issues. These findings would support JISC research by Creanor et al. (2006). Many of the perceptions of the participants were similar. Even in the cases of misguided information about support networks for example. If you consider Salmon's five stage e-moderating model (2004) to communicating online, a prerequisite of achieving Stage 1 is that the learners know how and where to access help and support. It would seem that as students talk with each other, it may be the case that a miscommunication of information or a 'Chinese whisper' scenario can develop amongst cohorts. Additionally, this can be fuelled by the student's Facebook group. This will be one of the phenomena that will be investigated during Phase 2.

The obligation by HEIs to provide competitive TEL offers, results in an abundance of studies and reports into pedagogical must haves for successful designs however, further investigation is needed into whether this is being translated into practice. For example, the disparity between what a student needs to do to be a successful e-learner, what the student actually does and whether they understand why they are doing it. This confirms the need for e-learning strategies to address the new factors determining the divide.

## **Further Work**

Phase 2 of the research is in progress and is addressing the points raised in Phase 1. A new sample is being interviewed who have completed the same unit as the sample in Phase 1. 10 participants have been interviewed to date. The iterative process of data analysis has produced some interesting preliminary results.

8 of the 10 participants suggested that there was an element of a 'Chinese whispers' effect that happens on the groups Facebook page. 5 of which went as far to say that this generated a sense of panic within the group. Looking at the characteristics of these 5 participants, there is no pattern as to which students experience this. Although most of the participants admitted to a 'Chinese whisper' phenomenon, this did not deter them from using the Facebook group as a support network, as what they gained from it was far more beneficial to them. The social circles within this sample that are created using social media play a part in constructing attitudes towards digital exclusion in as much as misinformed or incorrect posts lead to anxiety and concern.

This did only seem to happen on social media sites as although rumours could spread verbally this did not seem to cause any panic as it was limited to the immediate social circle and not the whole Facebook group.

Phase 2 did not confirm that previous experiences influenced current perceptions of technology per se: it did however find that previous experiences of technology generated feelings of self-doubt towards using technology. 9 of the 10 participants voiced feelings of uncertainty with the technology to be used on the course and whether they had used it before. The older participants that had entered the course after a long period of employment perceived the technology to be different to that they had been using at work or at home and therefore unable or difficult to use. These feelings of self-doubt were experienced prior to the course starting but developed into something positive when the course started. Whereas the younger participants who shared similar views were not anxious about the technology until after the course had started and they knew which technologies they were to use. The older participants all agreed that it had not materialised in practice and that they were able to use the technology without any problems that related to their skills. Additionally, none of the older students shared any experiences of digital exclusion due to a lack of personal technological skills. Any experiences they had faced with new technologies, such as blogs, they had met with an opportunist and positive view which allowed them to pick up the new skills quickly. Phase 2 confirmed the findings from Phase 1 with regard to the digital native/immigrant debate. Phase 1 discovered that age played no part in digital exclusion. During Phase 2, this hypothesis was investigated further. Interestingly, the younger participants, considered by some to be digital natives, perceived the older participants, considered by some to be digital immigrants, as facing certain challenges with technology, yet none of the older participants interviewed shared this view. While the older students would admit that some technologies were new to them, they did not consider this to be a hurdle only an opportunity to learn something new. Furthermore, the older students perceived the younger students as having previous knowledge and experience of using new technologies, therefore an advantage. The younger students also perceived themselves as having an advantage with technology; however this did not translate into practice. The younger students in this sample were limited in which technologies they used, being very capable of using social media and other methods of communication but not as comfortable using sites for research or the VLE. This runs parallel with the literature from the Technology Acceptance Model (TAM) (Teo, 2009) which emphasises younger students' perceived ease of use with ubiquitous technology and using technology for consumption and not creation (Bennett et al., 2011). A hypothesis for this could be that as technology evolves and becomes more ubiquitous in education and everyday life, older learners, through experience have caught up with younger learners. So even though older learners who are 'digital immigrants' due to being born before technology was commonplace, are now as comfortable using technology as their younger counterparts. Perhaps a renaming for this younger group: 'digital consumers' or 'digital communicators' would now be more appropriate than 'digital natives'.

Again, with the Phase 2 sample 'support' was a significant theme that emerged from the data. The support networks at the university that were commonly used by this sample were IT support and Library support. The group's Facebook page was an important source of support (academically and emotionally) and some participants

relied on peers and lecturers for face to face support. 7 of the 10 participants were aware of being informed about support networks during their induction at the start of the course, however as the support was not needed then, they did not store the information. This raises an important point. Most universities will prepare a carefully organised induction for their new students in order to inform them of all the necessary information that they may need during their time there, yet it could be argued that most of that information is lost and only the information that is significant at that time is remembered. There is an argument here for universities and other institutions to stagger the induction process so that certain information is given later at a time when it might be more relevant.

Phase 2 will continue to research the points raised during Phase 1. After completion of Phase 2, Phase 3 will be implemented to evaluate the trustworthiness of the data analysis. The final Phase 4 will evaluate the original contribution to knowledge that this PhD research seeks to make: a conceptual framework for effective teaching and learning approaches that influence digital inclusion and exclusion of diverse students.

The logo for iafor (International Association for Frontiers of Research) is centered on the page. It features the word "iafor" in a light blue, lowercase, sans-serif font. The text is surrounded by two large, overlapping circular arcs. The outer arc is a light blue color, and the inner arc is a light red color. The arcs are positioned such that they appear to frame the text, with the red arc being slightly behind the blue one.

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***Heraclitean Thinking For a Philosophy of Education in the 21st Century:  
Towards an Ontology of a New Mode of Change***

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**Abstract**

Heraclitus does not rivet Being, does not separate Being from Becoming. Being simultaneously changes and identifies with itself. The inherent multiplicity and variability of Being, namely the multiple facets of the self, this Being and Becoming, is the idiosyncratic nature of the world and us all, lasting time and energy, change and decay. Therefore, according to Heraclitus, the apparent conflicting states, tendencies, forces are connected in a coherent relationship of harmony. The simultaneous and eternal cosmic shift and identity is the cause of Being.

Heraclitus regarded critically the spectacular changes and developments of his transitional era and his philosophy is not an arbitrary and subjective construction, but there exists one eternal universal relation, the Logos, which is the eternal and catholic relationship; it involves both the natural and the human microcosm.

Today at a transitional era of constant shifts, at an age of erudition but not essential knowledge, Heraclitus is more contemporary than ever, as he insisted on the link between the constant shift with fixed parameters and the interlacing of “alterity”, “difference”, with “identity” and “unity”. This link with real-life parameters is considered more necessary than ever, since students immerse themselves into a virtual reality and a constant alternation of identities. This entails the fear that there does not exist a unifying principle or that they insist on conflicts without the presence of interactions that will create new balances.

Keywords: Heraclitus, education, knowledge, identity, unity, time, change.

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The object of the present research is the utilization of Heraclitean intellect in a planning process which is directed, but whose outcomes are not predetermined. The interest is focused on the actual process and methodology, which will monitor the final outcome. Heraclitus maintains that every thing is examined in its natural structure and not integrated in systems for its defence with descriptions and analyses.

In the current conditions of flux, with no criteria of differentiation between opposites, with fine balances, ready to be overturned yet again in the face of the new data, a requirement presents itself for the development of cognitive tools, particularly during the educational process, preparing students for an unpredictable future. There exists an imperative for the development of mechanisms that will accept the concepts of randomness, complexity, unpredictability, as a challenge for the synthetic process, without however necessarily leading to one and only solution of the problem, but describing the problem and comprehending the separation of elements that change and those which remain stable at the shift.

The Heraclitean dialectic comes up against the contemporary common code which is ingestible, where people do not talk in concepts but codes and action is received without “language”. The accessibility of information to all is also a regression of the more stable forms of knowledge and culture. What is suggested is a superficial relationship with things, which are presented as obvious and evident, while Heraclitus speaks of the *μή δδνόν ποτέ* (that which never sets).

### **Heraclitus faces:**

#### 1) The issue of the dual existence of the world

In order to highlight the issue of the world as world-one and as world-always Heraclitus uses the horizon of secularity of Being. The dominant pattern of the Milesians on the fixation and permanence of the cosmos is overturned<sup>1</sup>. Becoming is a huge game. The Becoming of the World has a rhythm, this rhythm does not obey what we call laws. The world is one and universal; it is a structure. The kykeon is used as an example of the blend of individual elements and stillness as the cause of the separated. Fragment 125 is an indirect metaphorical Heraclitean statement on shift as the cause of the unity<sup>2</sup>. The world-kykeon remains in unity as world one-always, the shift becomes the cause of the unity of the world. In fragment 72 it is stated that the sum total of beings and phenomena of the world (always the becoming ones) must be integrated and interpreted within the frames of universal catholicity and not be treated individually and fragmentarily. All seemingly stable states of matter are in essence transitory, their permanence existing solely in the human mind, which is unable to capture the deeper essence of things.

The true nature of things (cf. apparent contradictions, fragment 16) lies behind the phenomena (cf. fragment 106), but cannot be hidden from the mind-logos, which lies

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<sup>1</sup> Thomson, George, *Studies in Ancient Greek Society, Vol.II, The First Philosophers*, Moscow, 1959.

<sup>2</sup> Diels H., Kranz W., *The Presocratics*, Volume A'. Athens: Papadima, 2005.  
<http://www.mikrosapoplous.gr/heracletus/heracletus0.html>

over and above these. Its mission is to solve and illuminate them, leading to their full understanding. From the principle of constant transmutation arises the basic Heraclitean tenet, that of the perpetual struggle and simultaneously unity of opposites. The metaphysical terror of the philosopher in the face of the endless flow of the river waters essentially reflects his own unstable and constantly modifying “identity”. The safe, stable world of everyday life collapses and in its place remains a quantum bundle of probabilities, where everything is identified, and everything is equally insignificant and non-existent. All that is possible is the mode of existence as a dynamic field of relations of continuity, interpenetration and internalization.

## 2) The issue of the understanding of the Logos

The world forms a criterion for differentiation between people. In fragments 33, 34 it is stated that the opinion of one is wiser than the opinion of many. This is a standing Heraclitean position. The “many” (the “hoi polloi”) think and behave as if they are asleep, that is, they live in the secluded, illusory world of their subjective, biased and fragmentary contemplations, unable to grasp the world in its wholeness and the potential of Becoming. In this sense, the only “awake” is the philosopher (fragment 89).

Heraclitus goes beyond politics without going against it, since philosophical thinking subsumes political thinking (fragment 114). However, “private thinking” is an anti-dialectical manner of thinking<sup>3</sup>, while the normal way of thinking is the common, catholic one and the logos (ratio, reason) is catholic. Fragment 112 states that thought, world and action are interrelated and must be determined and governed by the knowledge of universal truth. The Word<sup>4</sup> takes up the importance of measure, the relationship between the dimensions of Being<sup>5</sup>. The expression of *λόγου ακούειν* (*hears not me, but the Word*) (fragment 50) shows that it concerns the verbal-communicative form of the Word. This does not concern an abstract cosmic principle but the reason that exposes and explains how the world works. The common word is the universal law. It is a description which emphasises empirical observation. The philosopher analyses, categorises and attempts to integrate them in a broader hermeneutical form, and this is the difference of the philosophical from the common

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<sup>3</sup> Ийенков, Evald, *Dialectical Logic*.

[http://aworldtowin.net/documents/Ilyenkov\\_Dialectical\\_Logic.pdf](http://aworldtowin.net/documents/Ilyenkov_Dialectical_Logic.pdf)

<sup>4</sup> Burnet John writes characteristically: “The λόγος is simply the discourse of Herakleitos himself; though, as he is a prophet, we may call it “the Word”. It can neither discourse addressed to Herakleitos nor yet “reason”....A difficulty has been raised about the words εόντος αἰεί. How could Herakleitos say that his discourse had always existed? The answer is that in Ionic εόν means “true” when coupled with words like λόγος.” See, Burnet, John, *Early Greek Philosophy*, London, Adam and Charles Black, 1908, p.146. Access via <https://ia600300.us.archive.org/5/items/burnetgreek00burnrich/burnetgreek00burnrich.pdf>.

<sup>5</sup> Cherniss, H., *Aristotle’s criticism of Presocratic Philosophy*, Baltimore, 1935.

word<sup>6</sup>. The thought and language of Heraclitus are concise: those who can be brief are dialectical, and those who cannot are not dialectical (Plato, *Republic*, VII, 537C).

### 3) The issue of the discovery of truth

Becoming is headed towards the infinite. It is based on ratio (logos) which is simultaneously thought and language and the truth is discovered. We must persevere in order to comprehend that which transcends us, not vilify that which is great (fragment 47). The human eye cannot distinguish the perpetual flow of things; it creates, therefore, according to Heraclitus, the illusion of individuality, stagnation, permanence, as in the case of the river (fragment 12). Fantasies, illusions, judgments and opinions that are a product of an accumulated experience and knowledge constitute one's particular identity.

Heraclitus approaches specific phenomena and his thought is directed towards abstract thought. He does not establish a contrast between the senses and reason. Learning comes from direct experience (perception through the senses) and then the process of knowledge is per se. Learning passes effortlessly from the perceptive to the cognitive level, through a process that accepts as valid solely the data of the senses (in contrast to speculation). They are submitted however to the critical analysis of the philosophical mind, with the ultimate aim of finding the truth about the world and its expression through speech (fragment 55). It is extremely interesting that we cannot see the truth neither in our dreams nor when we are awake and the true nature of beings, of phenomena, is perceived only through the mind, which actually takes as its base the data of the senses, yet processes them and interprets them in such a way as to understand the truth hidden behind them and is the perpetual flux and change through the unity of opposites. In fragment 65 Heraclitus uses human experience universally applied globally.

### 4) The issue of order as self-regulation

The universe is constantly transforming, everlasting movement, but the transmutation occurs not randomly but proportionately<sup>7</sup>. The world is the order of disorder<sup>8</sup>. The equilibrium of the world is a dynamic equilibrium, which results from the constant competition (war, strife) of the opposite forces (day-night, cold-hot), which however simultaneously are also complementary, since nothing can be perceived without its opposite. They are essentially two seemingly opposite aspects of the same basic principle, the cosmic fire, whose different forms are due to its perpetual

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<sup>6</sup> Vlastos, G., "On Heraclitus," in *American Journal of Philology*, 76 (1955), 337–368.

<sup>7</sup> Burnet John states that: "It is important to notice that μέτρα is internal accusative with ἀπτόμενον, 'with its measures kindling and its measures going out'". See Burnet John, *op.cit.*, p.148.

<sup>8</sup> Tambakis, Nikos, *Heraclitus and modern world: Continuity of Dialogue*, Athens: Govostis Publications, 2006.

transmutation. Struggles and discords are not absent<sup>9</sup>. However, there is a necessity, that which is necessary to Becoming for it *to be* Becoming. In Heraclitus, freedom and necessity are not opposed, but form two sides of the same coin.

Opinion, that is the principle which governs him, does not lie outside him, but regulates the individual phenomena through their internal relations, based on the unity of opposites and the perpetual change and transmutation. This transmutation however does not take place uncontrollably, but according to his measures. Heraclitus paved the way for the Stoic world by comparing “the common” to the laws of the city<sup>10</sup>.

### **The issue of attunement**

Unity in Heraclitus results from multiplicity and the various parts acquire meaning through their common function in the context of a whole. Corporeality and disposition are not two spaces. Body, soul and thought are inseparable entities. Anyone can animate everything and overcome everything<sup>11</sup>. The universal soul cannot be wise except to the degree in which it communicates closer with the fire of the cosmic soul. A condition of absolute simplicity is essential, where everything becomes one. The separation of opposites in absolutely conflicting situations and forces, independent from each other, is due to the weakness of the “many” to overcome their fragmented viewpoints and capture the phenomena of the world within the “hidden harmony” that constitutes their unity. Contradictions are part of its dynamic unity<sup>12</sup> (fragments 37, 48). Opposites come together but are not identical to each other (as God, the Logos, the World and Fire are joined without being identified). The concepts of general and vague are two concepts which refer to the world as a unity. Attunement is sometimes visible and sometimes invisible. The “strife of opposites” is really an “attunement”.

### **The issue of continuity and consistency**

Repetition is a Becoming. What has been revealed is rediscovered, darkness reclaims the lost ground from light and what had been offered is withdrawn. It is expressed anthropomorphically for the universe and the last sentence in fragment 10 is explained with the movement of entities from uniqueness to plurality and vice versa. The Heraclitean unity of the world is not static and atemporal. It is a constant Becoming without beginning and end, a principle of self-regulatory periodicity in the form of a closed circle (fragment 30). The circular structure of time is manifested especially in the interior of the great whole which is the universal container. The beginning is the end. Time is the first cause of the destructive and recreative Becoming, it is the productive negativity. Contradictions are kept incessantly dynamic and never reach the point of neutralization.

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<sup>9</sup> Vlastos, G., *Equality and justice in early Greek cosmologies*, *Classical Philology*, 42, 1947.

<sup>10</sup> Burnet, John, *op.cit.*, p.191.

<sup>11</sup> Cf. Cornford, F.M., *Before and after Socrates*, Cambridge, 1932.

<sup>12</sup> Guthrie, W.K..C., *A History of Greek Philosophy*, I (Cambridge, 1962), 403-492.

## The issue of time

According to Heraclitus one cannot step into the same rivers twice because different waters flow. With the word waters he meant the conditions which are never the same, but always change. He also meant time. Time moves us from one station to the next, ages us and kills us<sup>13</sup>.

Being in time, since time is an expression of Being in Heraclitus, and tiredness, as two causes of shift, and in this way Being remains stable and unchanging, by changing eternally its peculiar in becoming nature<sup>14</sup>. We move between proximity and distance, between action and inactivity. Redemption from fire comes through fire according to Heraclitus and all these realising that there is an intersection of the temporal with the atemporal.

Heraclitus does not discriminate between now or yesterday. The shift between contradictory states is simultaneous and not sequential. The bonds that bind the visible and the invisible have never been severed. Becoming unfolds within time, i.e. good is identified with the truth (they speak the truth, they do good deeds) and evil with lies and self-delusions. Temporal dimensions need to be reconciled with selflessness, love for life and desire for creation.

Time (αἰών) is a child playing draughts, the kingly power is a child<sup>15</sup>. Play causes in the child's life a need for renewal. It is in the same way that artistic creation entertains and pleases the artist's soul. A lack of creativity will lead to an indifference or adherence to various groups in order to avoid the awareness of error, so as to diffuse wrath and the pain of failure.

In the 21<sup>st</sup> century:

Heraclitus and education: A new orientation of the thinking process

Revisiting Heraclitus' views, this is an age where the young are characterised by a lack of appetite for views. This attitude is especially interesting, as long as it does not become a lack of generosity and lack of appetite for life. The young are characterised by an unwillingness of completion, where one can find both positives and negatives, as well as severe symptoms of lack of concentration, where problems are created and paths of communication are closed. The objective is to remove them from breathtaking ugliness, from false correlations and the fight for knowledge.

1) The issue of the dual substance of the world according to Heraclitus faced with the absence of any relationship between virtual reality and actual reality

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<sup>13</sup> Axelos, Kostas, *Heraclitus and Philosophy*, translated by Dimitris Dimitriadis, Athens: Exandas Publications, 1986, p.255.

<sup>14</sup> Theodorakopoulos, John, *Introduction to Philosophy*, Athens: Estia Publications, 1974.

<sup>15</sup> Kahn, Charles, *The Art and Thought of Heraclitus*, Cambridge University Press, 1979.

In Heraclitus fire is not merely the generative “material” principle of the world, but rather a logical, organisational principle which governs it according to defined laws. The cosmic fire does not exist in a static state, but is successively transmuted to water (sea), and this in turn transmuted to atmospheric fire and earth, and the same again, in an interminable circular process that is the essence of the constantly changing universe. This transmutation does not take place randomly, but in measures, i.e. in an order which has not been defined “from the outside”, from a God-Creator, but operates within the frames of an internal self-regulation<sup>16</sup>.

Any loss of the contact between us and the outside world means we will not have a consciousness of our identity either (Heraclitus made references to dreams saying that they are the loss of consciousness of our contact to the external world and the subsequent withdrawal of the sleeper in a space entirely subjective (fragment 89) and this means no consciousness of identity as well.) While today lurks the danger of a universal predominance of a virtual world. We are immersed in unrealistic worlds, not in our own dreams, immersed in dream worlds of others. We come in contact with images which are not experienced moments and yet end up being observation spaces, and that means they are excluded from experience.

Heraclitean intellect should serve as a barrier for the habit of surrender to a spurious reality. If we get used to this spurious reality, we will be transformed into weak people, who will have a false conscience and will be unable to sense its falsity. There is a vicious circle of information increase, there is an inability to increase knowledge, with messages that do not reduce uncertainty. There is constantly an increase of possible probabilities, we face the very potentiality of information and become incorporated in a network of doubts that can spread and enclose us.

Thought is not equated with “estimation of consequences” and experience should not be lost. We must ask ourselves who is the active agent that transforms situations and since people have lost the battle with the reality of the image, we cannot ignore the consequences of the fact that they adopt and cooperate with it, and this is the basis for the use of the very technology of the three-dimensional, moving image. However the consequences will be disastrous if the non-mediated reality retreats to the fantasy world, where only the media are established as primary agents of experience creation<sup>17</sup>.

The issue of understanding the Word in contrast to the lack of a contemporary deep-thinking: empty word in a constant a-poria.

While criticizing, Heraclitus mentions that some are unreliable; those that know not how to listen (properly), also do not know how to speak. It is both a cognitive and a mental inability, an inability to distinguish between the words arriving daily in their ears and the true Word, that which the real philosopher uses to express the universal

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<sup>16</sup> Marcovich, M., *Heraclitus: Greek Text With a Short Commentary*, Pp. xxix + 665. Merida, Venezuela: Los Andes University Press (Oxford: Parker), 1967.

<sup>17</sup> Habermas, Jurgen, *The Structural Transformation of the Public Sphere*, translated by L. Anagnostou, Nissos Publishing: Athens, 1997, pp. 26, 68-82, 325-341.

truth, as he understands it through the “mind”. Here recurs the issue of the ignorance of erudition (Heraclitean allusion to Pythagoras; a complication and not true wisdom). The difference between learning and knowledge is an important parameter of Heraclitean thought. Its primary foundation is of course empirical, as Heraclitus points out with the verb *εγκυρέειν*, which means: meet, occur. Three verbs describe the basic learning stages: *φρονεῖν*, *γινώσκειν*, *δοκεῖν*. The first verb describes the mental process and thorough examination, the second verb the acquisition of true knowledge, the third verb the acquisition of subjective belief.

The process of constant interrogation is exacerbated by the overload of information, knowledge, and material goods in our days. In contrast, the set Heraclitean tenet is that quantity in evaluative terms does not correlate with quality (fragments 40, 57), nor the many followers (fragment 49) are a criterion of true life (reminding the many ‘likes’ or ‘followers’ of our digital age). Heraclitus claimed that true wisdom is one thing: knowing the principle that governs everything with the help of everything (fragment 41). Intellect is an expression of the objective, its therefore valid knowledge.

3) The issue of the discovery of the truth in relation to the current danger of the creation of a control web

A participatory internet web means networking, interactive communication, freedom of expressions, of independent information, with the possibility of embedding other means, which in essence means the creation of a convergence of media. High speeds, communication via optic fibers, user-friendly software, where the involvement of a growing number of people, therefore the exploitation of the collective intelligence is facilitated. An alternative public sphere of a potential reality is created, clearly, though, with an effect on actual reality. But in the turn of the century, an attempt took place to control information, surveillance and containment. However, the identification of the use is easy, reliable, autonomous and invisible (info split commercially motivated initially, geotracking). Digital traces are not erased, therefore a super-Panopticon is created.

Absolute knowledge of the dissemination of every parcel of information, a structural principle of publicity according to Habermas, precedence to surveillance and not freedom. The digital turn is realised within a new context of society, politics, economy, where the emergence of information to an absolute market value of modern societies crush privacy and freedom of expression. The commercial market has primacy. The collection of information regarding users is intended to increase the commercial market through the Internet. The same goes with secret services, since security is placed as a higher value than freedom of expression and privacy. Unfortunately, the powerful side remains surveillance. Heraclitus said (fragment 113): the limitations in thought are posed by the habits, prejudices and interests of individual committees and groups.

Today, the media acquire power<sup>18</sup>, do not merely support power and the consumer/viewer maintains a passive role as to the media achievements, but also at the level of formulating culture, which is grounded from the 1950's onwards on the entertainment industry. In front of a screen, inactive and slothful, stagnant, tired, with no energy.

The Heraclitean issue of inner self-regulation and the issue of peregrination today: inherent in the human being is the intensity for the search of meaning

The search for meaning is linked with creation, experience and the attitude towards effort, difficulties, obstacles. Heraclitus mentions that many neither contemplate nor finally acquire knowledge; instead, they form subjective beliefs. One needs to distance oneself, and the key is self-transcendence. This is impeded by the fact that today there is a strong effort for one not to be identified topologically, but to be "misinterpreted" tropologically. This independence from the limitation of time and space can lead to an inability of adaptability. What is everywhere cannot be anywhere. Heraclitus spoke of the realm of experience and the image of space. The key is that man is self-defined. They have the freedom to change at any moment. This freedom is supported by the Heraclitean intellect and can function as a formative agent within the troubled contemporary framework of speed, fragmentation, where it imposes a shift that eliminates pre-existing differences.

Today a shift is imposed which parallels our image only to the developments in science and suggests the production of knowledge and opinion based on the amount of information produced, which flood the human senses. Knowledge does not mean information. According to Heraclitus everything is examined in its natural structure and not by constructing logocentric systems. In all people there is the ability to know themselves and make themselves wise (fragment 116). This means enlightenment through experience and thought, knowledge and acknowledgment of the possibilities within an actual framework, that anticipates what can happen in a given situation. The understanding of truth lies in the perpetual transmutation and the dynamic unity of opposites, a prime example of which is the antithetical and yet bipolar relationship of the living with the dead (fragment 63). The philosophical mind comprehends their essential independence and its watchful gaze embraces the living and the dead as to opposite, but also mutually determined poles of a unique, dynamic and perpetually flowing reality (fragment 15)<sup>19</sup>.

5) The issue of harmony in Heraclitus is transformed and emerges as the issue of complexity and heterogeneity

According to Heraclitus, wisdom is not knowledge of many things, but the perception of the underlying unity of the warring opposites<sup>20</sup>. While today we observe that complexity and heterogeneity, the often non-rational treatment of space and irrational

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<sup>18</sup> Bignell, Jonathan, *Postmodern Media Culture*. Edinburgh: Edinburgh University Press, 2000.

<sup>19</sup> Thomson, George, *op.cit.*, p.269.

<sup>20</sup> Burnet, John, *op.cit.*, p. 158.

thought provide everyone with the right to perform mental leaps, however in substance what is achieved is the projection of a situation, which denies the existence of elements that determine the function of space. The acceptance of predetermined hierarchies and homogenized organizations or their utter avoidance, causing heterogeneity -a position clearly maintained by the postmodern- has as its aim to counter-propose a looseness, whose dominating rule is the lack of predetermined general rules. Additionally, it conforms to the acceptance of the complex reality, but through conflicts, disorder, ambiguous and not so much the comprehension of diversity and the acceptance of human nature. The supposedly “endless” multiplicity downgrades the fact that the effort is focused on the mutation of the community to a pulp of hybrid constructs and from the notion of community to the existence of personalized groups and supporters, without emphasis on function, but supposedly to a common aesthetic, which homogenizes and joins. Simply, visual representations are produced, with a superficial fusion of images, without any prior understanding of the structure of each element and the manner of the production of elements becomes mechanic, an external reference of the things that are repeated. Those who do not love anger, do not know what enthusiasm is and do ecstasize in the face of great beauty need not concern themselves with Heraclitus<sup>21</sup>.

6) The issue of continuity, cohesion in Heraclitus against the imperative adaptation of aesthetic proportions of humans to the new conditions of new technology

Technology has managed to penetrate the consciousness of people<sup>22</sup> and the aesthetic proportions of people have now adapted to the new realities of the new technology. The goal is to motivate students to spotlight situations in the light of an evaluation, in a hierarchy of values that will be founded on a biological a priori. We will ponder with our students whether the move is not upward, what exactly a struggle between young and old means. The dominant parallel objective is for students to learn to read<sup>23</sup> and interpret events. Movement is spiral, it is repetition, however deterministic and not arbitrary of the same phenomena. Therefore, the existence of leaps, abrupt qualitative changes in nature and society is unknown.

In Heraclitus, the illusions created by the singularity, arbitrary imagination, the lack of understanding, the random coincidences, fictionalized knowledge, sleepwalking (somnambulism)<sup>24</sup> are viciously condemned. Today that the incomprehensible is so reasonable (The Axion Esti (Genesis), Odysseas Elytis), where the organized resistance since the 1960's and onwards disappears, the alternative culture is far from being a solid and conscious group. Students wish to belong to groups, which move between power and withdrawal at the margin. Action is an activity of founding a body politic, memory and history. Educators should focus on the fact that the problem lies in the students' main goal being limited to the identification of their peers and not their active service or a claim to a portion of power.

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<sup>21</sup> Falkos, T., Arvantitakis, *Heraclitus*, Thessaloniki: Zitros Publications, 1999.

<sup>22</sup> McLuhan, Marshall, *The Gutenberg Galaxy: The Making of the Typographic Man*, Toronto: University of Toronto Press, 2008, (first edition, 1962), pp.22-23.

<sup>23</sup> Bloom, Harold, *How to Read and Why*, London: 4th Estate, 2001.

<sup>24</sup> Axelos, Kostas, *op.cit.*, p. 76.

## 7) The issue of time in Heraclitus and the dissolution of identity in time today

The “all-subduing” time for Heraclitus forms a type of temporality that allows in its territory the unfolding of both the subjective experience as well as the objective reckoning. Flashbacks lead to a search for points where concepts were in close relationship with the life they are called to describe. Clearly there are overlaps which have settled on the authentic existence. However research cannot take place in the gap of an instantaneous present, but some importance should be added, some knowledge added. The accumulation of technique has lost its horizon for any purpose, meaning and special content. Unless there is a ground for dialogue, it will be hard for truth to be revealed. No initiatives are undertaken, there is no dynamic relationship of disclosure and overlap in all fields (art, philosophy, technique...).

We have not being redeemed from the utilitarian dimension of time, but we are experiencing a destruction of the sense of continuity, tradition, identity. The act of remembering is seemingly useless in economic terms and homelessness means that it is always out of place; therefore sorrow is caused by constant destruction and most importantly by the perpetual evolution of destruction. We have to rid ourselves of the sense of time which is rooted in the present and as such dislikes any form of permanence. The consequences according to Stelios Ramfos are the lack of thought for the consequences. Time according to Heraclitus is expressed as a psychic element that is intertwined with the shifts of things. This excludes any recourse to metaphysical expectations, in order to better understand our behaviour. The awareness that the fundamental feature of human existence is constant movement and caring for one’s self can function as a counterweight to the inadequate definition of reality. However it cannot be allowed that there exist an uneven development, which magnifies that oblivion and thoughtlessness dominates. The Heraclitean world is a world is a world of change, therefore a world of the senses.

We realise that the danger is the unsafe patterns of either individual or collective perception, the danger to err due habitual patterns for the comprehension of reality. There arises an issue of variance between the impression of perception and the “construction” of comprehension. We must all possess an internal intelligence to see things in their binary shape (duality does not necessarily mean rivalry, it can also be complementarity) between the version of the passages and the desire of the whole. The objective is for us to realise things without either negating the opposites nor reconciling them or fighting them, to hold the role of narrator, namely the role of the third factor.

We should teach students, who begin with a background of ignorance, to perceive things in their place of installation. It is necessary to cultivate fantasy, but also their swing between memory and imagination. The dialectic of Heraclitus with the concept of the prominence of the universal participation and the role of contradictions in reality itself will open way for changes or corrections in the social, political level. The recourse to the diametrically opposite, to games of solidity and spatiality, to the contiguity of distance and proximity, to the meandering of thought is required for a deepening approach to things. Thought does not fall in contradictions and prejudices. In addition, the discharge from a metaphysical or transcendental attitude sets at the focal point dialectical thinking, the adoption of a dialectical mode of response, a

dialogue between habit and wit, a dialogue with “nothing-always” not for a rationality, but for the emergence of things and meanings.



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### ***Contests as a Way for Changing Methodologies in the Curriculum***

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#### **Abstract**

Digital Competence involves the confident and critical use of Information Society Technology for work, leisure and communication. It is underpinned by basic skills in ICT: the use of computers to retrieve, assess, store, produce, present and exchange information, and to communicate and participate in collaborative networks via the Internet. Some arguments cited for promoting the inclusion of ICT in education are the potential benefits of ICT for teaching and learning, the pervasiveness of technologies, and the necessity for present people of being functional in our knowledge society.

Education standards need to include the kind of skills and competences that can help students become responsible and performing users of technology and to develop the new competences required in today's economy and society which are enhanced by technology, in particular those related to knowledge management. So, in general, it is necessary a general change in the curriculum, not related to any specific subject.

In this way, contests may do possible this change by means of small, interesting questions that can be answered without prior knowledge about Informatics. Students should learn to use information technologies in a suitable, effective way, and when learning any subject they should be capable to implement computer facilities and thus develop their learning methods. Contests are an excellent tool to achieve these goals.

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## **INTRODUCTION**

Information and Communication Technologies (ICT) are a basic and common part of our lives. In this century, devices more powerful and smaller have taken a main role both for work and recreational aspects. And a non-finished number of applications have been developed for these devices. From European Union, government focused its attention in ICT and Informatics and recognized them as very important issues at all levels of Education. In this way, Digital Agenda for Europe [1] includes them as Pillar VII "ICT-enabled benefits for EU society".

In 2006, the European Parliament and the Council [2] published a recommendation identifying eight Key Competences for Lifelong Learning: Communication in the Mother Tongue; Communication in Foreign Languages; Mathematical Competence and Basic Competences in Science and Technology; Digital Competence; Learning to Learn; Social and Civic Competences; Entrepreneurship; and Cultural Awareness and Expression. Four years afterwards, the value of this recommendation is recognised in the Europe 2020 Strategy [3]. The 2006 recommendation already points to Digital Competence as a fundamental basic skill. Digital Competence is there defined as follows:

"Digital Competence involves the confident and critical use of Information Society Technology (IST) for work, leisure and communication. It is underpinned by basic skills in ICT: the use of computers to retrieve, assess, store, produce, present and exchange information, and to communicate and participate in collaborative networks via the Internet." [2].

This definition takes into account several matters not only related to the use of ICT, but belong to them related to Computer Science. Moreover, the implementation of the idea can be extended to different levels of education –from Primary schools to University-, different fields or subjects –from subjects related to Humanities to Science, through Health or Business and Law- and different states in the life –for young or elder people, for employed or unemployed persons, etc.

### **THREE MAIN ASPECTS IN THE DEVELOPMENT OF THE DIGITAL COMPETENCE**

Three basic aspects to be developed in order to achieve the goal of developing the Digital Competence are the knowledge, the skills and the attitude. The recommendation of the European Union provides explanation on the essential knowledge, skills and attitudes needed to be digitally competent.

We have to take the knowledge not as a mere repository of concepts that must be memorized by pupils for an examination, but as understanding of the functioning of main computer applications, from the operating systems of PCs to smart phones; of the risks of the Internet and online communication –remember that nowadays young people is almost all time connected to social nets and sometimes they do not feel the danger of sharing photos or comments-; of the role of technologies in supporting creativity and innovation; of the validity and reliability of online information –Saint Google's answers are not always contrasted and sometimes and only opinions quite

far from the reality-; of the legal and ethic principles behind the use of collaborative tools [4].

Regarding the skills, the user of ICT must manage different fields such as the ability to manage information; the capacity to distinguish the virtual from the real world and to see the connections between these two domains; the ability to use Internet-based services and to use technologies to support critical thinking, creativity and innovation. It depends on the age of the user and on the frequency of the use that the person would acquire these skills.

In terms of **attitudes**, the recommendation gauges as essential that citizens are critical and reflective towards information, that they are responsible users and interested in engaging in online communities and networks.

### **ICT AS A BASIC FOR EDUCATION**

According to NCCA [5], there are three main frequently cited arguments for promoting the inclusion of ICT in education. The first relates to the unproven potential benefits of ICT for teaching and learning, including gains in students' achievement and motivation. The second argument acknowledges the pervasiveness of technologies, which leads to the subsequent need to acquire Digital Competence to be functional in our knowledge society [6]. As a consequence, the third argument warns against the dangers of the current digital divide that needs to be tackled to allow all citizens to benefit from being active in the digital domain. The term digital divide came into use in the 90's to allude to the differences in access to ICT and the Internet [7]. As argued by Molnar already in 2003, new types of digital divide have emerged that go beyond access [8]. In this line, Livingstone & Helsper built taxonomy of uses defining gradations of digital inclusion as a ladder of participation [9]. In their paper, instead of proposing a new binary divide – as it was the case for the "Falling through the Net" report [10], which splits haves and have-nots – Livingstone & Helsper propose a continuum of use, which spreads from the non-use of Internet to low and more frequent use. After a focus on first access, and then use, a third subsequent perspective of the digital divide moved towards competence. Erstad argues that digital inclusion depends more on knowledge and skills than on access and use [11].

In a similar direction, digital 'rhetoric' discourses claim the necessity to develop digital literacy for full participation in life [12], while policy documents often emphasise the need to invest in digital skills enhancement for economic growth and competitiveness [3], [13]. Computer-related proficiency, according to yet another digital rhetoric strand, is the key to employability and improved life chances [12]. According to Magyar, Digital literacy should be acknowledged and guaranteed as a Human Right [14]. In the last decade competences related to the use of ICTs and technologies have started to be understood as "life skills", comparable to literacy and numeracy, therefore becoming "both a requirement and a right" [15].

In 2013, European citizens are not ready to face digital competence requirements. Eurostat data show that there are several categories with low digital skills – in terms of computer skills and internet skills; namely: the elderly, the inactive, and the low

educated [16]. Even the youngest generations, although being known as ‘digital natives’ [17], are not necessarily scoring high in terms of Digital Competence in international tests. Students did not perform well in Pisa 2009 online reading [18]: only 8% of respondents were considered as having high competence, showing the ability to use the Internet in an efficient way, valuing the credibility and usefulness of information [19]. A recent policy brief reporting data for the UK claims that in Britain media literacy levels – highly related to digital literacy – are currently stalling, and government is called upon to take measure against this lack of progress [20].

## CHANGE IN THE EDUCATION SYSTEM

According to OECD [21], “education standards need to include the kind of skills and competences that can help students become responsible and performing users of technology and to develop the new competences required in today’s economy and society which are enhanced by technology, in particular those related to knowledge management” (p. 14). In the referred report, these skills were defined to include processes related to knowledge management in network environments. Moreover, it stated that these skills should be gained at school. Such a broad definition leaves open the question about in which specific subject domains or on which school levels the elements of digital competence should be taught.

One of the few papers that provide some answers to the question is Erstad’s [11]. He broadened digital literacy to media literacy and suggested the following aspects of media literacies as part of school-based learning: 1) Basic skills, 2) Media as an object of analysis, 3) Knowledge building in subject-domains, 4) Learning strategies, and 5) Digital Bildung/ Cultural competence. Besides this, Erstad emphasized user-generated content creation (Web2.0, editing software) in which students have an active role in knowledge practices.

Another study about the role of digital competence in the curriculum was conducted among teachers of informatics oriented subjects in the Czech Republic [22]. The respondents answered to a ready-made questionnaire. Teacher respondents considered that the most important units for developing information and technology literacy of elementary school students were 1) word processing, 2) basic user skills, work with operation system, file management, 3) information seeking and communication, and 4) work with spread sheets. As the authors said, the respondents often tended to mark those competences they master themselves, and point out as unimportant the ones in which their IT competence was lower.

In several reviewed articles, an essential conclusion was that there is a need for changes in the curriculum, in structures, in teachers’ competence, etc. before schools can provide students with relevant competences and skills.

On the one hand, there is necessary a general change in the curriculum, not related to any specific subject. This was emphasized by Erstad [11] and Hague & Williamson [23]. Erstad regarded knowledge building in subject-domains essential. New technologies change fundamental issues within school subjects (e.g. calculators in mathematics). Knowledge is interconnected with the cultural tools we have, and not only with “content”, and tools change over time. It is important to have knowledge-

building skills, not specific technology skills. Based on his own study using project work, Erstad explained that digital media was both a resource for students' learning, as well as a tool for reflection on information sources, their collaboration within and between schools, and content creation – all of which were not related to some limited subjects of the curriculum.

On another hand, some changes in the assessment practices must be implemented. In his article, Erstad [11] described how students' digital competence is evaluated in schools in different countries. Several of the studies he used for reference purposes showed a clear connection between students' digital competence and their parents' socio-economic status. Schools have not been able to bridge this gap.

In describing the gap between outside and inside of school' digital literacy practices O'Brien and Scharber [24] wrote about the gap in official standards and assessments. Students' outside "texts" are multimodal digital ones but the assessments are almost exclusively based on printed texts.

An interesting change has happened during the last ten years: while the question "Should ICT be a separate subject or integrated in other subjects" was a burning question 10-15 years ago, none of the recently published papers reviewed discussed this issue – it appears to be so self-evident that digital technology should be integrated in all subjects and in all learning and teaching processes. The dominant opinion in the articles was that the best way to support students' digital competence is to use technology in various school subjects and for various purposes. Allen [25] stated that there should be a school-wide consensus on goals, methods, and responsibilities about the acquisition of information literacy skills. Based on a survey targeted to teachers in Czech Republic, Benes, Mudrak, Prochazka, Rambousek and Stipek [22] reported that teachers favour the approach that information education is not limited to the information technology subject itself, but the development of information technology competences should be supported by the wide usage of ICT in other subjects not directly focused on informatics, and also in various educational information activities that are not directly linked to these subjects. The improvement of digital competencies or related skills can be an important additional goal or side-effect in settings where technology is used in education for other purposes, mainly learning of some subject domain content.

## **BEBRAS CONTEST**

In 2007, the OECD Centre for Educational Research and Innovation (CERI) launched the New Millennium Learners (NML) project [26]. It has the global aim of investigating the effects of digital technologies on school-age learners and providing recommendations on the most appropriate institutional and policy responses from the education sector.

The concept of New Millennium Learners suggests that the technology uptake, particularly by younger generations, has an effect on the way people build their identities, communicate socially, and manage information and knowledge. However, the fact that young people are increasingly attached to and knowledgeable in terms of technology does not necessarily mean that they develop by themselves the range of

skills and competencies that the knowledge economy requires [27]. Today's children are thought to be flexible with computers, immediate to communicate, creative with technology, and highly skilled at multitasking in a world where ubiquitous connections are taken for granted [28].

Bringing informatics in a formal track to schools by means of curricula is quite important. However, it is necessary to support the informal ways of introducing students to informatics. So another way to bring informatics to school can be through developing attractive activities based on informatics concepts. Contests are among them. Contests are exceptionally valuable for motivating and involving pupils in computer science [29].

The International Contest on Informatics and Computer Fluency (named Bebras in Lithuanian, or Beaver in English, [www.bebbras.org](http://www.bebbras.org)) can be an example of bringing informatics concepts to students in an informal way. The Bebras contest started in a coordinated way: running contests at schools, where solutions may be submitted to some central authorities or some local organizers.

Any contest needs a challenging set of tasks. The Bebras tasks' developers are seeking to choose interesting tasks (problems) for motivating students to deal with computer science and to think deeper about technology. Collaboration in developing Bebras tasks during international workshops reveals six concepts significant for general informatics education [30], [31]:

- **Information:** the conception of information, its representation (symbolic, numerical, graphical), encoding, encrypting;
- **Algorithms:** action formalization, action description according to certain rules;
- **Computer systems and their application:** interaction of computer components, development, common principles of program functionality, search engines;
- **Structures and patterns:** the components of discrete mathematics, elements of combinatory and actions with them;
- **Social effect of technologies:** cognitive, legal, ethical, cultural, integral aspects of information and communication technologies;
- **Informatics and information technology puzzles:** logical games, mind maps, used to develop technology-based skills.

## CONCLUSIONS

Young people do not know what a day without a mobile is. And not so young people do not imagine their present life without the smart phone, tablet or simply Internet. Internet nowadays is not only a very big network, but it has millions of services on it, and all the set is changing mankind and human society for the effects they have on the acquisition of information and on communication strategies; Internet, on-line services, applications, etc. are also influencing individuals' learning, knowledge development and, more generally, interpersonal and intrapersonal relationships.

Computer Thinking and ICT are now part of our lives and they have more leadership year by year, month by month. At the same time, they have the potential to rapidly spread across regions. To indeed this propagation, young people take Informatics and ICT as a common, natural and useful part of their way of life.

Educational systems also have to modernize their curricula. Several subjects that are not specifically part of Informatics use it as a very practical tool. Like Mathematics or Physics with calculators some decades ago, different methodologies are incorporating concepts, manners, tools, software, etc. to improve and make easier the learning of subjects. One of these tools are the contests, and particularly the Bebras Contest.

The Bebras Contest has small, interesting questions that can be answered without prior knowledge about Informatics, but are clearly related to Informatics concepts and require thinking in and about information, discrete structures, computation, data processing, as well as algorithmic concepts. That is, each Bebras task can both demonstrate an aspect of Informatics and test the participant's Informatics-related talent.

The logo for 'iafor' is centered on the page. It consists of the lowercase letters 'iafor' in a light blue, sans-serif font. The text is enclosed within a circular graphic composed of two overlapping, semi-transparent arcs: a light blue arc on the right and a light red arc on the left, which together form a partial circle around the text.

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*Emerging into a Different Way of Becoming and Belonging:  
A School's Journey in 'Living and Sustaining' Transformative Pedagogy:  
A Case Study of a New Zealand Primary School*

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**Abstract**

Every school has an organisational storyline that relates to people, objects, relationships and experiences. At a deeper level, a school's storyline might be retold in terms of its aspirational intentions and its achievements. Deeper still, a school's storyline can be told ideologically in terms of the shared understandings, shifting discourses, and the construction and re-construction of meaning related to the learning and teaching in the school.

Using an ideological framework that focuses on the development and consensus of shared understandings, this presentation will outline a collaborative research project involving an Australian university and a New Zealand primary school. In this project the school's storyline was tracked for five years, beginning in 2009 from the appointment of a new principal. The participants included the school governance body, school leadership, the staff and students.

The research findings reveal changes in a school's storyline during a time of transforming the learning and teaching in the school. The research illuminates the relational movements of stakeholders in re-purposing the learning and teaching so it is transformative for all learners. The school's learning priorities fully embrace an inclusive, strength-focused, creative and critical pedagogy. The school's learning priorities transform not only how and what the students learn, but also the school's culture, enabling a different way of 'becoming' and 'belonging' to emerge. As contributors to an unfolding story, leaders act as guardians of a particular storyline that provides a framework for living and sustaining a transformative pedagogy.

Keywords: transformative, inclusive, strength-focused, critical, creative, pedagogy

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## INTRODUCTION

This is a story of a school's journey over the last five years. Through shared understandings, shifting discourses, and the construction and re-construction of meaning, a learning and teaching culture purposefully evolved into a different way of 'becoming' and 'belonging'.

Flinders University in Adelaide, Australia, and a primary school in Auckland, New Zealand, conducted a collaborative research project on the school. The collaborative research project examined the emergence of a new way of being; a new ideology that became prominent over time (Giles, 2014). This paper examines more closely how, by transforming the learning and teaching, the culture of the school was also transformed. As the school moves into its next stages of 'becoming and belonging', the storytelling will continue. In this paper, I (Jane Cavanagh-Eyre, principal of Epsom Normal Primary School) tell the school's story in collaboration with my students, staff and community.

Professor David Giles, the researcher from Flinders University, introduced to the school community a shared storytelling approach. A school's storyline, he suggested, can be told ideologically in terms of the shared understandings, shifting discourses, and the construction and re-construction of meaning. The process of storytelling created ideological positions, which in turn shaped the learning culture of the school. Using an ideological framework that focuses on the development and consensus of shared understandings (Giles, 2014), this paper tracks the school's storyline over a five year period from the appointment of a new principal.

This collaborative research project focused on the deliberate repurposing of the school's strategic development and everyday practice towards a strengths-focused approach. The continuation of this research focuses more precisely on how the learning was transformed for students during periods of change.

## LITERATURE REVIEW

### *Organisational storylines as ideological positions*

In Giles' (2014) research on the primary school, the researcher discusses the notion of school leaders engendering shared understandings through on-going dialogue with the school community. They re-tell and re-craft a school's storyline. School leaders provide a lens on the school's life by acting as tellers of a particular organisational storyline (Giles & Cavanagh-Eyre, 2012). By deliberately articulating a school's storyline, future-oriented visions and endeavors gain greater clarity of meaning for the way learning is transformed for the students (Celik, 2010 cited in Giles, 2014).

### *Leading transformative learning and cultural change*

There is a large body of research literature on educational leadership. Leithwood and Jantzi (2000) list various approaches to educational leadership including transformational, moral, participative, managerial and contingent leadership. Lingard, Hayes, Mills & Christie, (2003) add pedagogical leadership to this list. They argue that pedagogical leaders empower their staff to create programmes that actively achieve identified learning outcomes. They believe that the central purpose of leadership in schools is to maximise a student's academic and social outcomes via

improvements to teaching practices. Educational leaders need to work creatively with complexity, if schools are to meet the goal of providing the most equitable ways possible for all students to achieve (Lingard et al, 2003).

According to Schein (2004) successful leaders must be perpetual learners themselves. Educators need to be perceptive and capable of having deep insights into the realities of the world in which their students operate. Inviting teachers to challenge ideas and thinking so they can arrive at new insights will ultimately deepen their sense of practice (Senge, Kleiner, Roberts, Ross & Smith, 1994). Leading transformational pedagogical change requires educational leaders to challenge the 'existing way of being'. Freire (1975) argues that education should be a liberating process that exposes dehumanisation and unjust practices in the world. Barry (2005) also suggests that to be effective citizens, students require new skills and virtues so they can resist illegitimate power with courage (cited in Hayward, 2012). Teachers should be driven by a moral and visionary imperative that empowers students to become confident global citizens who can think critically so as to make a positive difference in the world (Giles & Cavanagh-Eyre, 2012).

When transforming learning for students it is vital that school leaders have a future-focused vision for student learning. In recent years educational writers and researchers, both nationally and internationally (Bishop & Berryman, 2005; and Palmer, 2000), have argued that the essence of teaching is encapsulated in the essence of relationships between teachers and students. Whilst strongly acknowledging the importance of such relationships, of equal significance is the need for school leaders to develop teachers capable of creatively designing innovative learning programmes that will inspire students and generate high levels of enquiry and engagement (Giles & Cavanagh-Eyre, 2012).

Inspirational teachers demonstrate a preparedness to cultivate creativity and innovation (Gibbs, 2006). In New Zealand there are fine examples of inspirational teachers and Gibbs (2006) asserts that we have much to learn from these teachers of the past. Sylvia Ashton-Warner and Elwyn Richardson, for example, attempted new ways of teaching. These inspirational teachers continually reflected on their practice and cultivated a sense of relational connectedness. They demonstrated a high level of self-efficacy and were prepared to be innovative and take risks, even if this meant taking on the establishment. According to Gibbs (2006), inspirational teachers have a strong sense of purpose, and show eagerness to deal with the unknown and the unpredictable. To sustain inspirational teaching throughout the duration of their teaching careers, teachers need to be capable of developing meaningful relationships with their students and be driven by creativity (Gibbs, 2006).

Over the last two decades there has been increasing international interest in educational strengths-focused approaches. Strength-focused approaches are underpinned by holistic and humanistic imperatives; learning is embodied, relational and meaningful (Giles, 2011). Strength-focused, emancipatory and holistic approaches not only empower learners but also challenge deficit theories of education (Freire, 2003; Hooks, 2003). As the learning is transformed for students so, too, the learning organisation evolves into new ways of operating. Educational organisations are now embracing Appreciative Inquiry (AI), which focuses on what is working well, and encourages generative thinking to create strategic revitalisation and change

(Bushe, 1999; Cooperrider, Sorenson, Whitney & Yaegar, 2000; Cooperrider & Srivastva, 1987; Elleven, 2007; Lopez & Louis, 2009, cited in Giles, 2014).

## **METHODOLOGY**

The context for this research project was a public school in Auckland, New Zealand. This inner-city school engages with 46 ethnic groups and is governed by a Board of Trustees, which is elected by the parent community. The school also serves as a demonstration and practice school for student teachers from local universities. As a learning community the school is committed to working collaboratively with local, national and international universities to ensure that the learning programmes of the school reflect the most innovative and up-to-date developments in educational research and practice.

The research methodology was underpinned by a phenomenological, qualitative approach. This approach is concerned, first and foremost, with human experience (Denscombe, 2003). Elsewhere, Giles (2014) outlines that the collaborative research required the university researcher to conduct semi-structured interviews with trustees, school leaders and staff. To continue the storyline, I (the principal) reviewed and analysed relevant school documentation. The school governance body gave permission for the research and the Ethics Committee for the Faculty of Education, Law and Theology at Flinders University granted its ethical approval. Participants were given assurances relating to the confidentiality and anonymity of the data and its representations.

The semi-structured interviews produced school data across the following three phases of development:

- Phase One: Re-visioning the school's purpose;
- Phase Two: Re-aligning the school's purpose and deliberate philosophical exploration; and,
- Phase Three: The emergence of a new and alternative ideology.

Professor Giles interviewed participants on the deliberate decisions that followed a strategic planning day in 2009, through to the school's decision, in 2010, to give strategic priority to the implementation of strength-focused creative initiatives. When analyzing the data from the interviews, the researcher employed two approaches; a thematic analysis that identified emerging themes, and a hermeneutic analysis that considered the meanings within the text.

Further analysis of school documentation, including 'student voice' and information from parent consultations, provided insight into the process of embedding transformative learning experiences into the day-to-day learning programmes. In 2013 the Education Review Office, a government inspectorate/audit organisation, reviewed the school and its report provided further evidence and validation of how the school has and is continuing to realise its vision.

## **FINDINGS**

Research findings show the subtleties within a school's storyline during a time of transforming the learning and teaching in the school. The research focuses on the

relational movements of stakeholders in re-purposing the learning and teaching so that it is transformative for all learners. The research findings illustrate that over time the school was able to develop, embed and sustain:

- A transformational school vision;
- A transformational pedagogy; and,
- A transformational school culture.

### ***A transformational school vision***

Analysis of the school's documentation shows that a new school vision was shaped, embedded and embraced over a five-year period. The visionary aspirations and intentions outlined in the school's Curriculum Design Document were validated by the Education Review Office Report (2013).

At the beginning of the five-year period the school was operating without a stated vision. The school community worked together to formulate a new vision for the school. During Phase One, through in-depth consultation with the students, staff and community, the vision for the school was crafted as follows:

*Students are:*

- *Nurtured by community (inclusive)*
- *Inspired by optimism (teaching)*
- *Motivated by empowerment (learning)*
- *To be responsible global achievers (sustaining the world).*

In the first phase of the transformational journey, teaching staff were challenged to become 'inspirational teachers' supporting students to be optimistic about their lives now and in the future. Dialogue with staff about 'what makes an inspirational teacher' provided a platform for teachers to reflect on their own practice. In this phase staff discussed the ground-breaking and creative teachers of the past in New Zealand, namely Sylvia Ashton Warner, who taught Maori children to learn to read through composing and reading their own stories, and Elwyn Richardson, who developed experiential learning opportunities that enabled children to produce creative works.

The analysis of the school documentation demonstrates a refining of the emerging ideology over time. The new vision was reworded in the third phase of transformation to include the word 'creativity', using 'empower' in relation to students' strengths and a strengthened resolve of the school for the students to act as citizens of change now and in the future. The school community (including the students, board of trustees and staff) worked collaboratively to shape the new vision. The Education Review Office noted in its report that: *The board has recently reviewed and modified its vision and values in consultation with the school's community* (Education Review Office School Report, 2013, p.1). The refined vision states that:

Students are:

- *Nurtured by community (inclusive)*
- *Inspired by creativity (teaching)*
- *Empowered by strengths (learning)*

- *To be responsible global citizens (thinking critically to make a positive difference)*

Moreover, the school's Curriculum Design Document (2012-2015) provides the necessary elaboration for staff to fully understand school expectations in relation to vision (Curriculum Design Document (2012-2015)). As example of this elaboration for the first line of the vision 'nurtured by community', the Curriculum Design Document states that *staff and students have a right to live and work within an inclusive and respectful school community and students' cultural heritage is to be valued and recognised* (Curriculum Design Document, 2012-2015, p.4). The Education Review Office also noted the realisation of the vision; ... *there is a shared understanding of the approach by parents, teachers and students... Staff reflect the diversity of the school's community and capably support the high numbers of students who are English speakers of other languages* (Education Review Office School Report, August, 2013, p.1).

Inclusive learning programmes acknowledge the bi-cultural foundations of Aotearoa New Zealand. In particular, its founding document, the Treaty of Waitangi, and its now commonly accepted principles: Participation, Protection and Partnership. All students have the opportunity to acquire knowledge of te reo Maori (Maori language) and me ona tikanga (Maori culture practices). In 2013 the Education Review Office reported that at Epsom Normal Primary School, *Bicultural practices are valued within a culture of innovation, respect and care* (Education Review Office School Report, August, 2013, p.1).

In the second and third line of the vision 'inspired by creativity' (teaching) and 'empowered by strengths (learning) the Curriculum Design Document states that *all students have unique and often undiscovered strengths. The school curriculum is carefully planned to empower students to uncover their strengths and to become successful, creative self-motivated learners.* (Curriculum Design Document, 2012-2015, p.5). The Education Review Office further noted that; *Learning opportunities are relevant, authentic and are aligned to the school's curriculum planning. ...Students' individual learning strengths are at the heart of school curriculum design. Extensive opportunities for student creativity are offered and collaborative learning is encouraged* (Education Review Office report, August, 2013, p.2).

In the fourth line of the vision 'to be responsible global citizens' (thinking critically to make a positive difference) the Curriculum Design Document states that *students can make a positive difference now and in the future. Students are encouraged to be globally responsible citizens of the world, who will proactively guard the world's resources so that future generations will benefit from the actions and decisions of today's learners* (Curriculum Design Document, 2012-2015, p.16). The emerging ideology led to social constructivist ideas and critical pedagogy (Giles, 2014).

#### ***A transformational pedagogy: The school's learning priorities***

The research findings reveal how the school's vision was realised through the learning priorities. The four learning priorities determine what was and is taught and these priorities transform not only how and what the students learn, but also the school's culture, enabling a different way of 'becoming' and 'belonging' to emerge overtime.

In the first phase of the school's journey the learning priorities were 'enhancing potential', 'empowering learning' and 'enriching learning'. The learning priority 'enhancing potential' focused on developing student talent. Students were placed in Development of Talent (DOT) workshops for two days, enabling them to grow their talents. The DOT workshops were and still are a very successful initiative, and have become part of the school's tradition. At parent consultation week in 2010, one of the parents likened the anticipation of DOT Days to Christmas; children counted the days until they arrived. As the ideology shifted in Phase Two to a more strength-focused philosophy, the senior leadership team made a structural change to the timetable that enabled students to spend an hour a week exploring their strengths. Students' strengths were also recorded in the school database system and reflected in report writing to parents. By Phase Three, strength-focused learning was and still is well-embedded in the practices of the school.

A social critical constructivist philosophy emerged through on-going dialogue with the various stakeholders in Phase Two and Phase Three. Subsequently the new vision included 'inspired by creativity' (teaching) and 'to be responsible global citizens (thinking critically to make a positive difference). Teachers believed it was important that students needed to know how to be creative and how to be critical. Students emerged into a different way of 'becoming'. Creative and critical questions were formulated and published symbolically on large charts for each classroom. The questions are as follows:

### **Being Creative**

What ideas can I generate?  
 What possibilities can I explore?  
 What ideas can I play with?  
 What new connections can I make?  
 In what new ways can I express my thinking?  
 (Curriculum Design Document, 2012-2015,p.16).

### **Being Critical**

Where have these thoughts come from?  
 Is this the truth?  
 Is this inclusive of everybody?  
 Have you put yourself in somebody else's shoes?  
 Are these ideas making a positive difference?  
 (Curriculum Design Document, 2012-2015,p.16).

The school's learning priorities are now embedded in the implementation of the learning programmes. The Education Review Office School Report states: *Students respond positively to high quality creative and inquiry-based learning programmes where critical thinking, expression and invention are promoted* (Education Review Office report, August, 2013, p1).

### ***A Transformational Pedagogy: The School's Curriculum***

The over-arching learning theme for the school is 'Together we are strong'. The research findings show that this theme has been consistently implemented since 2010, when strength-focused pedagogy began to become one of the central learning priorities of the new ideology. The Maori Whakatauki (proverb) for the school is: *Kia*

*ngatahi ai te tu, E pakari ai te tuara* (Stand united, stand strong), which has also been actively promoted.

The curriculum design reflects the vision, values and learning priorities of the school. One creative initiative which became an essential component of the core curriculum – the ‘I am’s’ – invites students to imagine themselves in various roles. The ‘I am’s’ provide student opportunities in ‘becoming’ and create the context for the learning focus each term in all year levels of the school. Examples of the ‘I am’s’ include; I am a researcher, I am a volunteer, I am an environmentalist, I am a historian, I am a geographer, I am a chemist, I am a physicist, I am an archaeologist. There is great excitement every year when the students, staff and community decide together on the ‘I am’s’ for the following year. The students particularly enjoy the science-focused topics (Student Voice Documentation 2010-2013). Two other successful topic foci have come directly from the parent community: ‘I am a polyglot’ and ‘I am a philosopher’ (Parent Consultation Notes, 2010-2011). The 2013 Education Review Office School Report stated that: *The curriculum is broad, carefully designed, and effectively promotes and supports student learning. It is enacted through a philosophy of student-centered learning and includes input from the community*’ (Education Review Office School Report, August, 2013, p.2).

As the ‘I am’s’ evolved, other school-wide curriculum initiatives emerged. Each year all students study the ‘artist of the year’ and the ‘composer of the year’. Recently a student voice group in the school sought consultation with other groups on whether all students together should study a ‘writer of the year’. If all groups agree, the school will implement this new initiative in 2015.

Through the ‘I am’s’ the over-arching theme *Together we are strong* and the Whakatauki influence school traditions and celebrations. The school follows a three-year cycle in the final term of the school year. ‘I am a creative designer’ involves students designing, gardening, cooking, and performing for ten weeks in preparation for a Garden Party attended by the community. The following year in the final term the topic is ‘I am an artist’. Students complete numerous art works for an art exhibition. Parents, community members and local artists attend this event. The last topic to complete the cycle is; ‘I am a performer’. All students study for ten weeks what it is to be an actor/dancer/singer and two school productions are performed. The school’s curriculum design shapes, not only the lives of our learners, but also the wider community.

#### ***A transformational school culture: Researchers of influence***

When considering the transformation of the learning programmes and the strategic direction for the school, both the school leaders and the trustees worked from Bolman and Deal’s (2008) organisational cultural model. This model takes into account relational, structural, symbolic and political factors when positioning a new way of ‘being’ School leaders also used appreciative inquiry to promote organisational strengths aligned with the strength-focused pedagogy provided for the students.

As the school journey continues, different educational researchers are given prominence over-time and shape the thinking of the staff and trustees. Research findings show that focusing on strengths is a more effective way of learning than a conventional approach that patches up weaknesses. For one trustee the ‘light came on’

for him around the philosophy. He described the experience as a profound shift in his thinking and an important lesson to remember, especially to focus on the positive and the powerful strengths of individuals (Giles, 2014). For staff, the work of American Professor Duncan-Andrade, a critical theorist, was pivotal in them developing quality critical literacy learning for students. Educational researchers (including Giles, Palmer, Bishop, Duncan-Andrade, Buckingham, Robinson, Renzulli and Gardner) guide the school's learning direction. The 2013 Education Review Office School Report reinforced that *the school operates in a research-based environment with professional and academic links to local and international universities* (Education Review Office report, August, 2013, p.1).

### ***A transformational school culture: Growing teachers' strengths***

At the school, teachers are expected to be innovative practitioners at the 'cutting edge' of educational research and practice (Curriculum Design Document 2013-2015). The senior leadership team developed a school research model to grow the strengths of their staff. Staff work in teams to conduct their own learning inquires and then present their findings at an annual in-house-conference, where visiting academics critique their work (Giles, 2014). Examples of these projects include: Intergenerational Literacy, Peer-tutoring, Embedding Critical Literacy, Developing Year 1 Students as Creative and Critical Learners, and Creating an Optimal Physical Learning Environment.

The Intergenerational Literacy Impact Research Project involved a parent who could not speak English. She attended her child's writing lesson with the teacher each day. By the end of the year the child's learning had accelerated and the parent became a confident speaker and writer of English (Giles, 2014). A significant research finding was that these impact research projects have impacted on student achievement results. The 2013 Education Review Office reported that: *Senior leaders have a deep knowledge of the teaching capabilities of the staff. Teachers are supported to research areas of educational interest that impact on student learning. Evidence of the positive outcomes of these projects is visible in students' achievement results* (Education Review Office School Report, August, 2013, p.2).

Giles' (2014) research and analysis of school documentation, demonstrates that school leaders and trustees carefully selected 'significant others' to support the school to sustain transformative pedagogy for its students. With the exception of conferences that staff attended, professional development was either delivered by the school's internal experts or by a very small number of external consultants. Over the last five years for example, Gaye Byers, an external writing consultant, supported teachers to become writers so they in turn could effectively teach their students to become writers, while Tony Burkin from Interlead Consultants mentored leaders and emergent leaders in a way of 'leading'.

## **DISCUSSION**

### ***Living and sustaining a transformational pedagogy***

The findings presented in this paper explore the ideological processes of a school's journey in 'becoming' and 'belonging'. The storyline of a deliberate and sustained focus approach to learning within a school always involves the interrelationships and experiences of the participants (Celik, 2010b). The on-going dialogue of all the

participants in this particular storyline has provided the necessary framework for the school to live and sustain a transformative pedagogy (Giles, 2014). As the pedagogy was transformed for the learner, a transformative school culture also evolved and continues to evolve daily, into a different way of 'becoming' and 'belonging'.

The school's philosophy in this research project is founded on a critical humanistic tradition of education that promotes the holistic development of the child. Initially the agenda for change focused on an inclusive, strength-focused and creative pedagogy. As the school's journey continued, social constructivist ideas and critical pedagogy evolved. The on-going discourse about what students should learn and how they should learn resulted in staff sharing a common language. As the participants dialogued throughout the journey it not only reinforced the school's philosophy and vision, and developed a shared language, but also enabled an emergence of 'a philosophy in action'. *The school's educational approach is best understood as a philosophical stance and daily practices by the teacher shapes how the learner engages in the teaching and learning process* (Lopez & Louis, 2009, p. 1).

Bringing together over forty different ethnic student groups and their families to learn together in an inclusive learning environment required the school leaders to provide clarity of meaning about what students learn and how students learn. Staff designed a school curriculum where the 'I am's' provide students with opportunities to develop a greater level of 'agency'. The 'I am's' acknowledge the importance of the 'unique self'. The school's learning environment reinforces how vital it is for every student to learn about who he or she is; that they have their own life-stories and their own unique strengths. With the knowledge of themselves as learners they can contribute their strengths to the group, and together the group becomes stronger. Parker Palmer (1998) an educational visionary who advocates strongly for the learner to know the essence of who he/she is, argues that when I choose integrity I become more whole, I become more real and I acknowledge the whole of who I am.

In order for an organisation to meet its creative goals, Robinson (2001) believes it is important to identify the creative strengths of individual staff, provide an environment that is conducive for creative thinking and harness creative endeavours that are aligned to the core objectives of the organisation. Peter Senge (1990) supports a generative process in a learning organisation to enhance and extend an organization's creativity. An organisation's ability to stimulate creativity and innovation on the part of its teachers is becoming increasingly important, as the environment that our young people are coming from is forever changing (Stoll & Seashore Louis, 2007). The research demonstrates that school leaders were and are supportive of generative pursuits of staff if their initiatives are aligned to the school vision. The impact inquiry research projects create opportunities for staff to participate in a generative process where their creative endeavours have a direct impact on student learning. Participating in the process of on-going research inquiries enables staff to incorporate an ideology that fosters sustainable practices (Meighan, Harber, & Siraj-Blatchford, 2007).

When considering the transformation of the learning programmes and the strategic direction for the school, both the school leaders and the trustees utilised existing organisational models to assist the progression of the school's new ideology. Both Bolman and Deal's (2008) organisational cultural model and the appreciative inquiry model provided the school leaders and the trustees with a way of working

collaboratively to revitalise the strategic direction of the school (Bushe et al, cited in Giles 2014).

The shared wisdom of ‘significant others’ supported the school on its journey of transforming learning for students. Dialoguing with selected academics from local, national and international universities provided rigorous debate with the school and enabled staff to develop a reflective yet deliberate approach aimed at progressing a change agenda. The collaborative research with Flinders University reinforced that the school leaders are guardians of the school’s storyline. The experience of re-telling the school’s storylines provided the school leaders with on-going renewal and reflection. Careful selection of significant others, namely the external consultants, supported school staff to self-review school practices and processes, and purposefully plan the next steps of the school’s journey. As ‘significant belongers’ the collective wisdom of the trustees and the parents also guided the day-to-day decisions staff were making about curriculum design and programmes of learning.

It is evident in the shifting language of the school and in the document analysis that all involved in this transformation of the school were challenged by the ideological shifts either at a personal or professional level. But through their on-going dialogue, it is clearly demonstrated in the findings that all participants shared one critical goal: ‘learning needs to be transformational for all learners’.

The most creative periods in the lives of organisations are often in the early stages of development. People are excited about the possibilities and have greater opportunities to be creative before the organisation itself has settled into fixed institutional structures and routines (Robinson, 2001). The greatest challenge for an organisation is to sustain this level of creativity. Currently senior leaders, together with staff and trustees, are in purposeful dialogue creating the next steps in the journey of the school.

## CONCLUSION

Leaders need to be highly creative in analysing and challenging cultural assumptions and, most importantly, have an ability to involve others and elicit their participation (Schein, 2004). As schools are never static, school leaders are advised to stay attuned to the nature of the dominant and emerging ideologies within a school (Giles, 2014). As contributors to an unfolding story, educational leaders act as guardians of the school’s particular storyline, providing a framework for living and sustaining a transformative pedagogy.

Educational leaders need to continue to reconstruct a school’s storyline and work strategically for the moral imperative of growing and developing every learner at the forefront of the schooling experience (Fullan, 2011). Through these endeavours a school’s learning priorities will transform not only how and what the students learn, but also the school’s culture into a different way of ‘becoming’ and ‘belonging’. Finally, Giles states; *Being a leader in education is not for the faint-hearted as the practical wisdom, strategic thinking and planning, tenacity and courage to sustain an ideological course for a greater public good is dramatic as much as it is subtle* (Giles, 2014, p.17).

**With thanks**

The school wishes to continue to work with Dr. David Giles of Flinders University in the next phase of the school's journey. His involvement in researching the journey of the school has had a significant impact on the way this school's story has unfolded to new ways of 'becoming and belonging'. Thank-you David.



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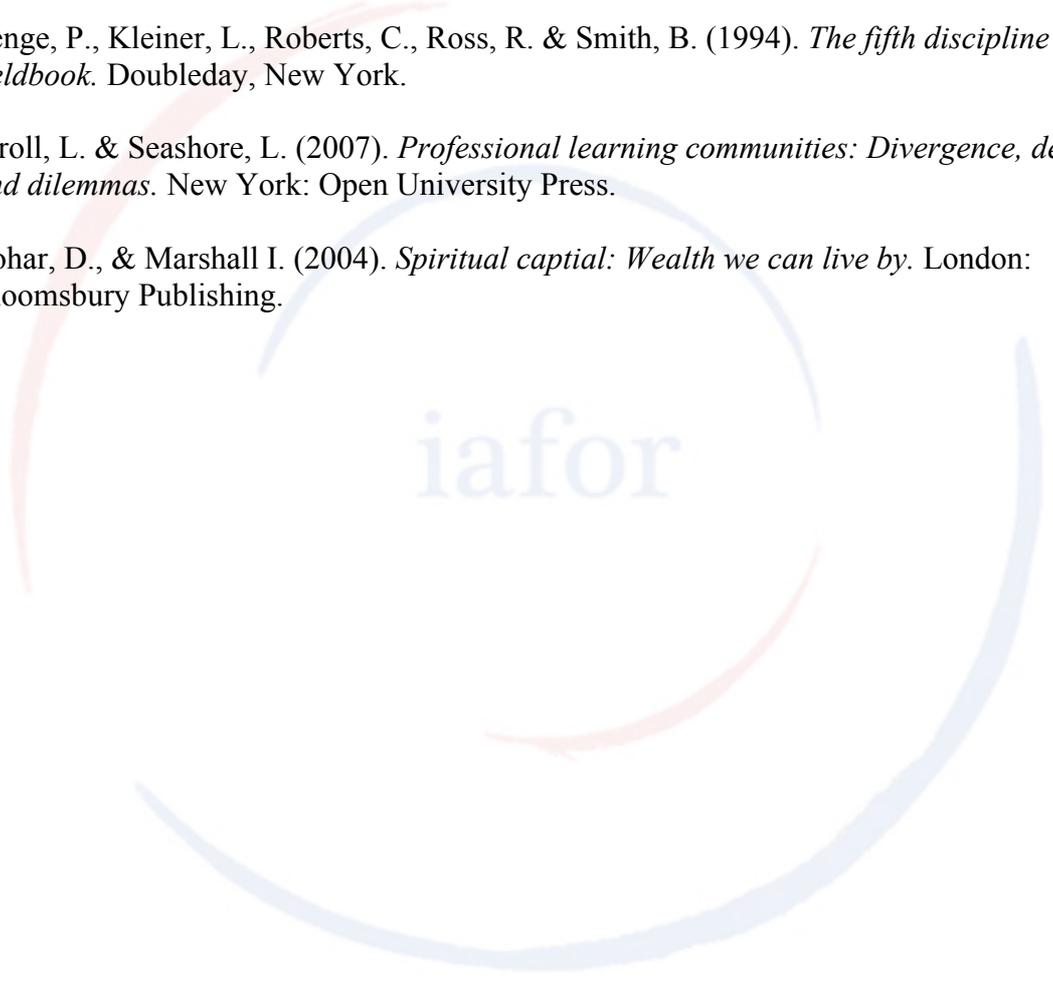
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The logo for the International Association for Educational Research (IAFOR) is centered on the page. It features the word "iafor" in a light blue, lowercase, sans-serif font. The text is enclosed within a circular graphic composed of two overlapping, semi-transparent arcs: a red one on the left and a blue one on the right, which together form a partial circle around the text.

## ***Dominant Multiple Intelligences among Students of Medical and Health Sciences***

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### **Abstract**

Studies on Learner's Performance are now attributed to the dynamics of Teaching-Learning Process and not only on lack of motivation on the part of the learner as believed in the past. The major challenge for the Outcome Based Teaching (OBT) is that of selecting teaching methods that encourage all students with different cognitive abilities to achieve the goals of the curricula.

This study correlates intelligence with learning styles in students of Medical and Health Sciences disciplines to determine their preferred learning styles. The results will further guide medical teachers to facilitate methodologies to suit the preferred learning styles of students help them to cope in the transition from medical studies in their future professional life.

The Questionnaire based on Howard Gardner's MI models was administered to first year students of Medical and Health Sciences University of the years 2010-2011 and 2011-2012 and was statistically analyzed.

The sample chosen for this survey consists of 234 students of first and second years of Medical and Health Sciences University of 2010-2012. The results were separately analyzed for each batch and then merged together to get cumulative results.

Key words: Multiple Intelligences, Outcome based teaching, learning styles, Individuate, pluralize, dominant intelligence

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## INTRODUCTION

Throughout their existence on earth, human beings have shown immense curiosity and a spirit of inquiry; both have resulted in tremendous cognitive progress for humankind. The knowledge acquired about the world around and within individuals and communities has led to the triumph of intellectual pursuits. However, all aspects of progress in the unending quest for knowledge of the workings of the mind and brain have borne fruit only in the last hundred and odd years. Ever since the breakthrough in the study of intelligence by British psychologist Charles Spearman with his formulation of the 'G' or 'General Factor Intelligence' (Slavin, 2006), there have been concerted efforts by other psychologists and neuroscientists to understand intelligence.

Studies of intelligence conducted on learners in schools and universities until recently were predominantly based on behavioral observations rather than on empirical evidence (Ormond, 2006). The learning problems were relegated to attention deficiency or lack of motivation and inherent intelligence. The definition of intelligence itself operated within limited parameters. Now educationists and psychologists attribute this to the dynamics of the Teaching-Learning Process where the learner's inherent multiple capabilities determine the learning styles and outcomes of a course.

This process would be a healthy culmination of the interaction between the learner's resources characterized by biological determinants and the teachers' resources of understanding and processing them with integrated teaching-learning methodologies.

The UAE Ministry of Education, which oversees the quality of the medical curricula, emphasizes the physician's interpersonal skills and bedside manners simultaneously within the curricula rather than their learning these through a process of osmosis.

One study conducted in the US on medical student applicants focused on desirable personal and interpersonal skills. One of the four valuable outcomes of the study has been the suggestion that medical schools admit applicants who show desirable interpersonal skills (Carrothers, Gregory, & Gallagher, 2007).<sup>2</sup>

With the integrated frameworks of Problem Based Learning (PBL) and Team Based Learning (TBL) in medical colleges in the region, attempts have been made to expose a student to self-directed learning. The need in all higher educational institutions is for a major paradigm shift from teacher centered to learner-centered methodologies. With the knowledge of what the students are capable of doing it is easier for the teachers to orchestrate the teaching-learning process. A teacher becomes more of a facilitator than a 'lecturer' or 'professor.'

The major challenge for the Outcome Based Teaching (OBT) is that of selecting teaching methods that encourage all students with different cognitive abilities to receive and assimilate information and to use in future to synthesize and, finally, to achieve the goals the curricula has promised them to achieve (McKensie, 2009).

However, there is an immediate need for revising and rethinking medical curricula and methods of teaching-learning process, which also focuses on the students'

learning in a more individualized mode in rich learning contexts with conditions for good learning. Brain mapping of students who are already admitted to colleges would further help educators develop the rich teaching-learning contexts. These will progressively enhance their learning in both the classroom as well as the workplace learning contexts.

Multiple intelligences pluralize the traditional concept of intelligence. Howard Gardner, in defining intelligence as “the capacity to process a certain kind of information that originates in human biology and human psychology,” (Gardner H. , Multiple Intelligence, 2006) delineates the role of intelligence as the ability to solve problems not just mathematical, but to approach a situation in which a goal is obtained.

The inflexibility and permanence of the traditional theories of intelligence - that intelligence is fixed and that it can be just the ‘ability to answer items on tests of intelligence’- is questioned (Gardner H. , Frames of Mind, 1983)

From extensive evidence from various sources from developmental psychology to psychopathological evidences, from exceptional populations, data from cognitive psychology, psychometric studies and from various other tools of measuring intelligence, he divides intelligences into seven categories based on the biological and psychological bases.

## **AIMS AND OBJECTIVES**

This study aims to correlate intelligence with learning styles in students of Medical and Health Sciences. This will help in determining their preferred learning styles. The results will further guide medical teachers to facilitate methodologies to suit the preferred learning styles of students. In addition, this will also help cope with the transitional period of medical and health sciences studies to their professional life. As the author and theorist himself reiterate in a personal message that “he was sure that you will find a range of intellectual profiles in your students, and it is worthwhile trying to 'individuate' and 'pluralize' your instructions” (Gardner H. , Multiple Intelligence, 2006).

## **METHODOLOGY**

For better implementation of the curricula, the authors felt the need to measure the learning styles with Kolb’s questionnaire in order to learn the dominant intelligences of the medical schools students across all colleges of the university.

Questionnaire based on Howard Gardner’s MI models was administered to first year students of Medical and Health Sciences University of the years 2010-2011 and 2011-2012. (See Appendix).

The sample was analyzed to determine the dominant intelligences and, consequently, their learning styles. A statistical analysis of the sample data was done. For this, the criteria and the interpretation were the following:

1. Inclusion Criteria: All students of medical and health sciences programs with only a maximum gap of one year between high school and college admission.

2. Exclusion Criteria:
  - a. Repeaters from our university and other universities and transfer students, and
  - b. Repeaters from other universities.
3. Interpretation: MI was considered dominant in our study if the percentage exceeds at least 50%. All MI scoring less than 50% were not included as a dominant MI and were considered to be in recession.

Dr. Howard Gardner critiques the notion of a single human intelligence in his theory of core operations in multiple intelligences in order to determine the learning styles of people (Gardner H. , *Multiple Intelligences as a Partner in School Improvement*, 1997). A core operation is a basic information processing mechanism in the brain through the synaptic neural pathways. Gardner asserts that each intelligence should have one or more core operations. As a neutrally based computational system, each intelligence is activated or triggered by certain kinds of internal or external information. He identifies nine intelligences of which our study focuses on seven required for the teaching-learning process for immediate use. Though the characteristics and criteria are typical to each intelligence, they are not isolated from each other. All human beings have these different intelligences. Intelligences work in concert (Veenema). The major assumption in the multiple intelligences theory is that although people may have a set of dominant intelligences, the others can be developed or honed through learning and practice. In the book, *Frames of Mind* Gardner strongly propounds that no two profiles of intelligence are the same (Gardner H. , *Multiple Intelligences*, 2006).

If there was one kind of intelligence there could have been one kind of assessment, one kind of curricula but, in reality, one student can learn better with hands on, another in a different way. Gardner demystifies the idea of the common intelligence.

Gardner initially formulated a list of seven intelligences that later included Natural Intelligence and Spiritual Intelligence. The first two have been typically valued in schools; the next three are usually associated with the arts; and the final two are what Gardner called 'personal intelligences'.

1. **Linguistic intelligence** involves sensitivity to spoken and written language, the ability to learn languages, and the capacity to use language effectively to express oneself rhetorically or poetically; and language as a means to remember information. It is empirically proved that a specific area of the brain called Broca's area is responsible for the production of grammatical sentences. Writers, poets, lawyers and speakers are among those that Howard Gardner sees as having high linguistic intelligence.
2. **Logical-mathematical intelligence** consists of the capacity to analyze problems logically, carry out mathematical operations, and investigate issues scientifically. In Gardner's words, it entails the ability to detect patterns, reason deductively and think logically. This intelligence is most often associated with scientific and mathematical thinking with 'remarkably rapid' problem solving skills. "The linguistic areas in the frontal-temporal lobes are more important for logical deduction and the visual-spatial area in the Pareto-frontal lobes for numerical calculations."
3. **Musical intelligence** involves skills in the performance, composition, and appreciation of musical patterns. It encompasses the capacity to recognize and

compose musical pitches, tones, and rhythms. Certain functions are located in the right hemisphere of the brain, although musical skills are not as clearly localized in the brain as natural language are; there is evidence that amnesia, or a selective loss of musical ability, can also occur.

4. **Bodily-kinesthetic intelligence** entails the potential of using one's whole body or parts of the body to solve problems. It is the ability to use mental abilities to coordinate bodily movements. Control of body movements localized in the motor cortex with each hemisphere dominant or controlling bodily movements is ordinarily found in the left hemisphere. The existence of apraxia is evidence for bodily kinesthetic atrophy being present as a biological aspect of intelligence.
5. **Spatial intelligence** involves the potential to recognize and use the patterns of wide space and more confined areas. Evidence from brain research is clear and persuasive just as the middle region of the left cerebral cortex have....posterior regions of the right cerebral cortex prove most crucial for spatial processing.
6. **Interpersonal intelligence** builds on a core capacity to notice distinctions among others, in particular, contrast in their moods, temperaments, motivation and intentions. Educators, salespeople, religious and political leaders and counsellors all need a well-developed interpersonal intelligence. In more advanced forms, this intelligence permits a skilled adult to read the intentions and desires of others, even if they have been hidden.
7. **Intrapersonal intelligence** metacognitive skill this intrapersonal intelligence focuses on self-knowledge, self-regulation and self-control. This intelligence is more to do with happiness at being on one's own and mostly in touch with one's feelings and emotions. These individuals are more introspective in nature.

## **MEDICAL EDUCATION AND MULTIPLE INTELLIGENCES**

The methods of teaching in medical education are most often traditional lectures, tutorials and private study. Until recently, the emphasis on medical education continued to be on the physicians' biomedical knowledge rather than their ability to relate to patients.

However, Medical education has evolved as a discipline in its own right. Research and professional expertise in teaching practices have taken precedence over mere classroom instruction. Continuous research in the raw materials, the students, is now a more urgent need, especially in the wake of a world where children are born in a very audio visually attractive world. This, in consequence, may deter them from learning when the world of learning is presented black and white or just drab and boring talk and chalk. 'Differentiated instruction' is critical and imperative in today's classroom instruction (Puchta Herbert and Mario Rinvoluceri, 2007) because each student comes with varied learning needs. It caters to all the different learning styles of students. Although it might not cater to every learning style at every conceivable session, it optimizes the teaching-learning process through the constructive alignment of learning activities.

Preparation for practice in terms of expertise in content is now supplemented with communication skills, attitudinal and ethical issues, and interaction in

multicultural environment. Teamwork and evidence-based medicine have become part of the medical curriculum (Harvey Silver, 1997).

### **RESEARCH QUESTIONS:**

In this study, we are trying to answer the following questions:

1. What is the percentage of Medical and Health Sciences students, who have opted for these programs, have similar or common dominant domains of intelligences typical to them?
2. What are the domains of intelligences that are required for Medical and Health Sciences students for effective learning?
- 3.

**HYPOTHESIS:** A common dominant intelligence is prevalent in the majority of students who have opted for medical and health sciences programs.

**RESULTS:** The sample chosen for this survey consists of 234 students of first and second years of Medical and Health Sciences University of 2010—2012. The age of the students ranged from 16 to 21 years, both male and female, but predominantly female.

The studies we conducted based on Howard Gardner's MI model and we divided the 234 students of the Medical and Health Sciences University for the years 2010-11 and 2011-2012 to two different samples. The results were separately analyzed for each sample and then merged together to get cumulative results. A cohort of 99 students of 2010 - 2011 taken as a first sample, and a cohort of 135 students of 2011-2012 taken as a second sample.

### **Data Collection Process:**

The questionnaire of Multiple Intelligences with 70 statements with ten questions under each intelligence domain requiring the students to score from 1 to 4 being the least and 4 being the highest. (1 = Mostly Disagree, 2 = Slightly Disagree, 3 = Slightly Agree, 4 = Mostly Agree). Multiple Intelligences questionnaire based on Howard Gardner's MI Model (see the appendix) sent to the students using Google forms and their responses recorded. The questionnaire designed in such a way that all the questions must answered before accepting the submission of the response. The results collated individually in each intelligence domain and statistically analyzed.

### **Data Analysis:**

After closing the acceptance of the responses, the scores of each intelligence calculated for each student, then the average of each intelligence domain calculated based on the programs starting with MBBS, BDS, BPharm, and BSN program is presented in figures [1 - 4].

AVERAGE SCORE IN EACH OF THE SEVEN DOMAINS OF Multiple INTELLIGENCE

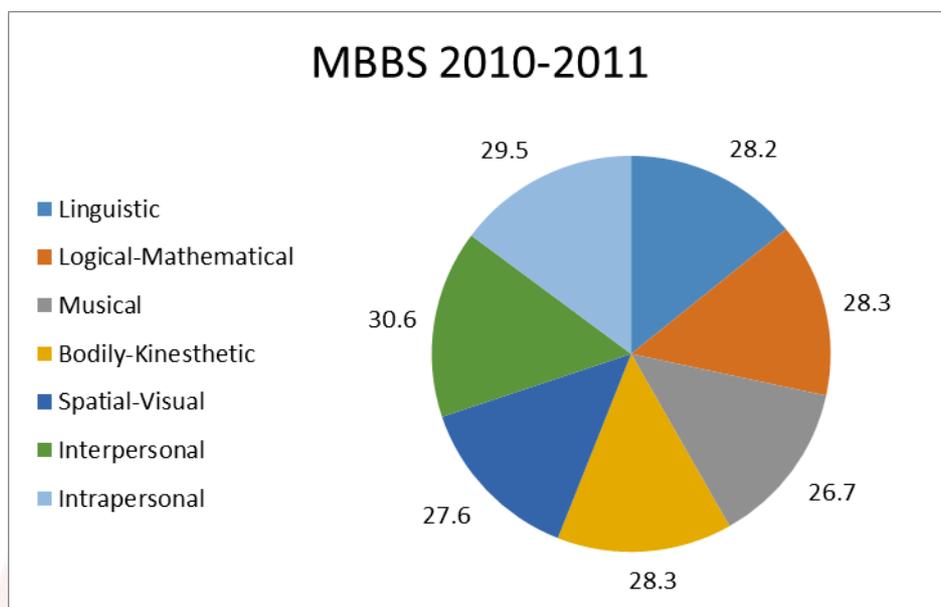


Figure 1

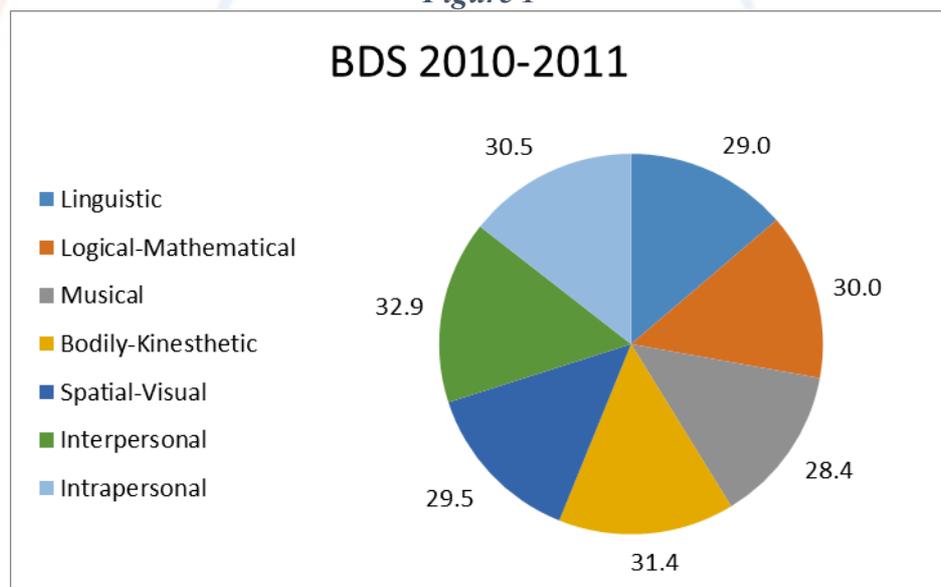
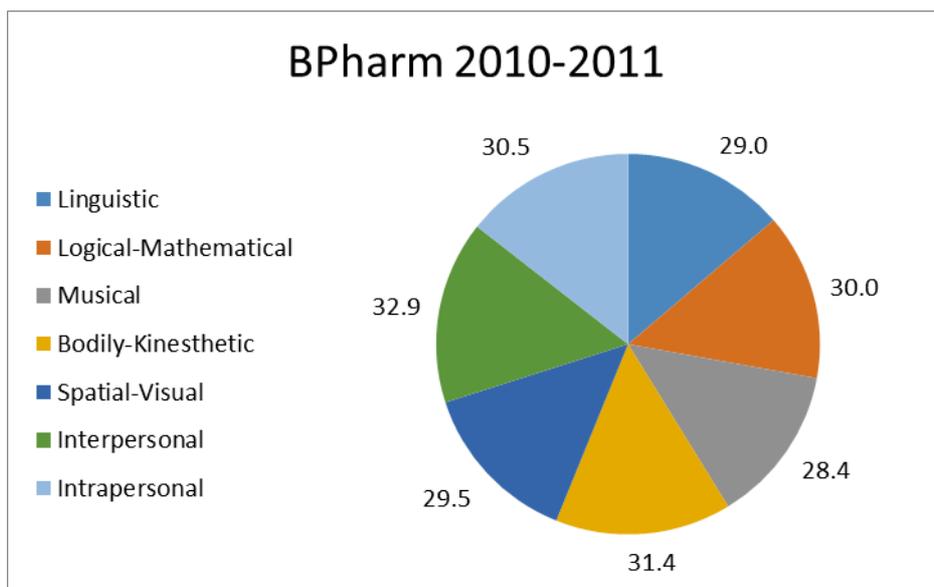
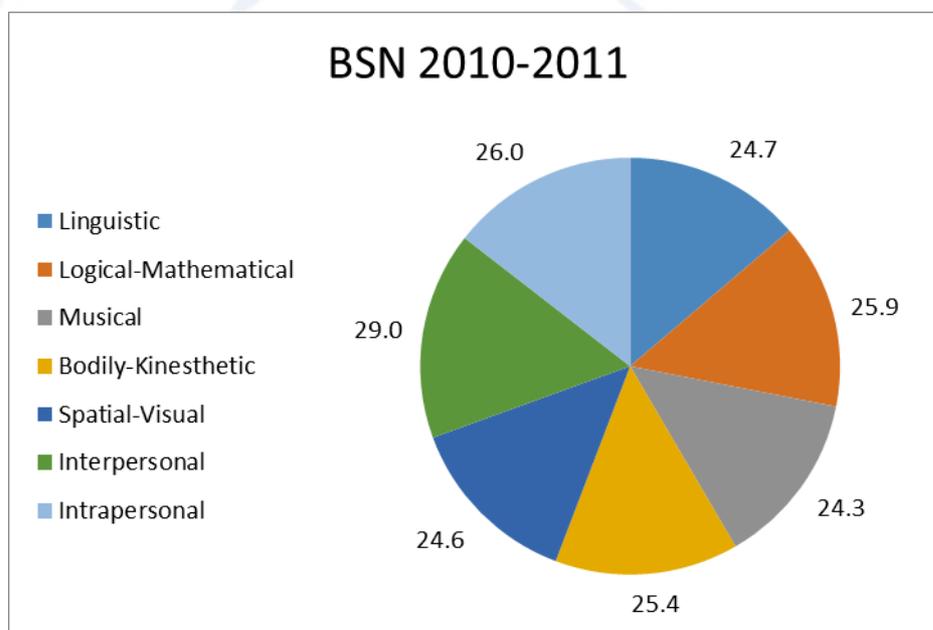


Figure 2



*Figure 3*



*Figure 4*

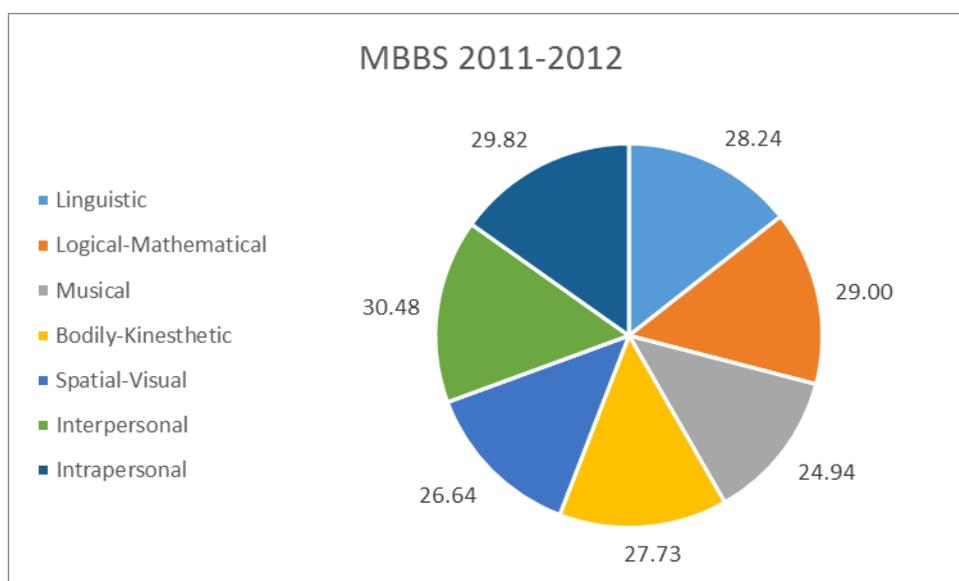
Table 1 shows the average score of each intelligence domain for the student in each program of 2010-2011 samples.

**AVERAGE SCORE IN EACH OF THE SEVEN DOMAINS OF Multiple INTELLIGENCE for 2010-2011 sample**

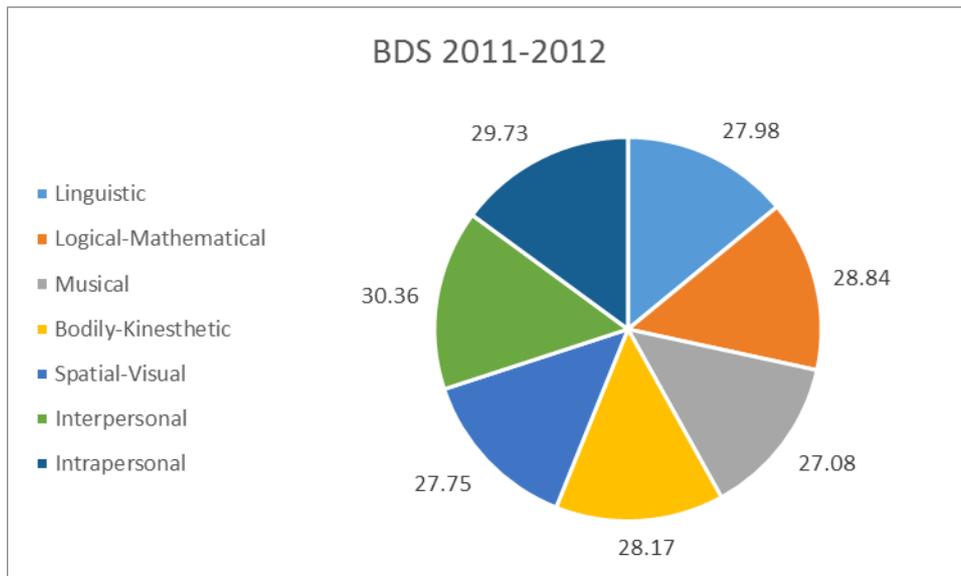
*Table 1*

#	DOMAINS OF MULTIPLE INTELLIGENCE	MBBS (53 students)	BDS (14 students)	B PHARM (24 students)	BSN (8 students)
1.	LINGUISTIC	28.2	29.0	29.0	24.7
2.	LOGICAL	28.3	30.0	30.0	25.9
3.	MUSICAL	26.7	28.4	28.4	24.3
4.	BODILY KINESTHETIC	28.3	31.4	31.4	25.4
5.	VISUAL SPATIAL	27.6	29.5	29.5	24.6
6.	INTERPERSONAL	30.6	32.9	32.9	29.0
7.	INTRAPERSONAL	29.5	30.5	30.5	26.0

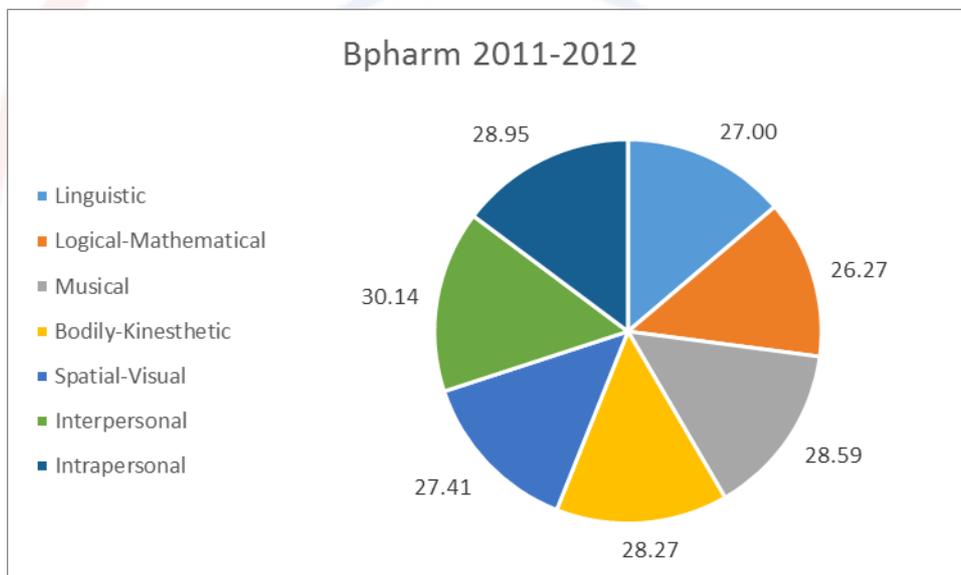
The same process is applied on the 2011-2012 students sample, and the figures [5 – 8] show the average score of each intelligence domain for MBBS, BDS, BPharm, and BSN program students.



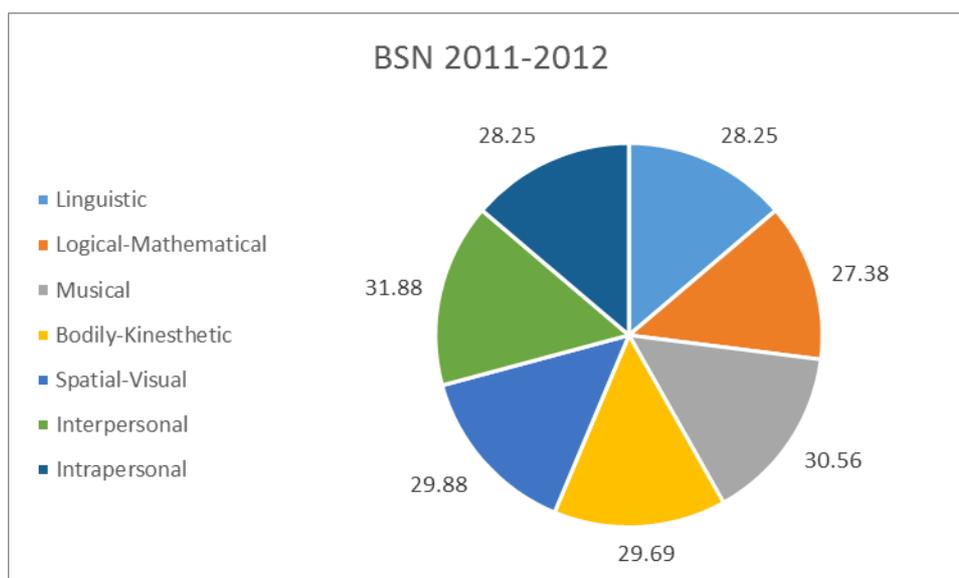
*Figure 3*



*Figure 4*



*Figure 5*



**Figure 6**

Table 2 shows the average score of each intelligence domain for the accumulated student in each college of 2011-2012 samples.

**AVERAGE SCORE IN EACH OF THE SEVEN DOMAINS OF Multiple INTELLIGENCE for 2011-2012 samples**

**Table 2**

Sl.no	DOMAINS OF MULTIPLE INTELLIGENCE	MBBS (33 students)	BDS (64 students)	B PHARM (22 students)	BSN (16 students)
1.	LINGUISTIC	28.24	27.98	27.00	28.25
2.	LOGICAL	29.00	28.84	26.27	27.38
3.	MUSICAL	24.94	27.08	28.59	30.56
4.	BODILY KINESTHETIC	27.73	28.17	28.27	29.69
5.	VISUAL SPATIAL	26.64	27.75	27.41	29.88
6.	INTERPERSONAL	30.48	30.36	30.14	31.88
7.	INTRAPERSONAL	29.82	29.73	28.95	28.25

Table 3 shows the overall average score of each intelligence domain for the accumulated students in each sample after placing them in descending order based on the large sample size.

**Table 3**

Overall results			
Sl.no	DOMAINS OF MULTIPLE INTELLIGENCE	2010-2011 (125 students)	2011-2012 (99 students)

6.	INTERPERSONAL	30.39	30.53
7.	INTRAPERSONAL	29.15	29.45
4.	BODILY KINESTHETIC	28.25	28.26
2.	LOGICAL	27.95	28.29
5.	VISUAL SPATIAL	27.83	27.67
3.	MUSICAL	27.82	27.21
1.	LINGUISTIC	27.7	27.92

From table 3, we can find that the top intelligence domain is interpersonal in both the samples, the second intelligence domain is intrapersonal, bodily kinesthetic intelligence domain comes third, logical intelligence domain fourth followed by visual spatial, musical and linguistic intelligence at fifth, sixth and seventh respectively.

Table 4 shows the average score of each intelligence domain for the MBBS students in each sample after listing them in descending order based on the large sample size.

*Table 4*

MBBS			
Sl.no	DOMAINS OF MULTIPLE INTELLIGENCE	2010-2011 (54 students)	2011-2012 (33 students)
6.	INTERPERSONAL	30.59	30.48
7.	INTRAPERSONAL	29.48	29.82
2.	LOGICAL	28.31	29.00
4.	BODILY KINESTHETIC	28.30	27.73
1.	LINGUISTIC	28.22	28.24
5.	VISUAL SPATIAL	27.61	26.64
3.	MUSICAL	26.74	24.94

In table 4 only MBBS students are observed independently in both samples. We find that the intelligence domain orders differ from the overall order of intelligence. The first three intelligence domains are Interpersonal, Intrapersonal and Logical followed by Bodily kinesthetic, Linguistic, Visual Spatial, and Musical respectively.

Table 5 displays the average score of each intelligence domain for the BDS students in each sample after putting them in descending order based on the large sample size.

*Table 5*

BDS			
Sl.no	DOMAINS OF MULTIPLE INTELLIGENCE	2010-2011 (14 students)	2011-2012 (64 students)
6.	INTERPERSONAL	32.93	30.36
7.	INTRAPERSONAL	30.50	29.73
2.	LOGICAL	30.00	28.84
4.	BODILY KINESTHETIC	31.43	28.17
1.	LINGUISTIC	29.00	27.98
5.	VISUAL SPATIAL	29.50	27.75
3.	MUSICAL	28.36	27.08

In table 5, we have only BDS students in both samples. We find that the intelligence domain orders differ from the overall order of intelligence. The top two intelligence domains in sequence are interpersonal and intrapersonal in both samples of BDS students. This is followed by Logical, Bodily Kinesthetic, Linguistic, Visual Spatial, and Musical Intelligences respectively.

Table 6 shows the average score of each intelligence domain for the BPharm students in each sample after ordering them in descending order based on the large sample size.

*Table 6*

Bpharm			
Sl.no	DOMAINS OF MULTIPLE INTELLIGENCE	2010-2011 (24 students)	2011-2012 (22 students)
6.	INTERPERSONAL	31.46	30.14
7.	INTRAPERSONAL	30.38	28.95
3.	MUSICAL	29.63	28.59
2.	LOGICAL	27.71	26.27
4.	BODILY KINESTHETIC	27.71	28.27
5.	VISUAL SPATIAL	27.71	27.41
1.	LINGUISTIC	26.71	27.00

Table 6 shows BPharm students in both samples. We find that the intelligence domain orders differ from the overall order of intelligence. The top intelligence domain is interpersonal in both samples of BPharm students, the second intelligence domain is

Intrapersonal, Musical Intelligence comes third, followed by Logical, Bodily Kinesthetic, Visual Spatial, and Linguistic intelligence respectively.

When we come to Table 7 showing the average score of each intelligence domain for the BSN students in each sample after ordering them in descending order based on the large sample size we found a slight deviation from the norm.

*Table 7*

BSN			
Sl.no	DOMAINS OF MULTIPLE INTELLIGENCE	2010-2011 (8 students)	2011-2012 (16 students)
6.	INTERPERSONAL	29.00	31.88
3.	MUSICAL	24.33	30.56
5.	VISUAL SPATIAL	24.56	29.88
4.	BODILY KINESTHETIC	25.44	29.69
1.	LINGUISTIC	24.67	28.25
7.	INTRAPERSONAL	26.00	28.25
2.	LOGICAL	25.89	27.38

We find that the intelligence domain orders differ from the overall order of intelligence. The top intelligence domain is Interpersonal in both samples of BSN students, However, the second intelligence domain is Musical. Visual Spatial Intelligence domain comes third followed by Bodily Kinesthetic intelligence. These are followed by Linguistic, Intrapersonal, and Logical intelligence.

Table 8 shows a program wise complete view of the Multiple Intelligence domains of the students in each program in both of the samples.

*Table 8*

	<b>MBBS (86 students)</b>	<b>BDS (78 students)</b>	<b>Bpharm (46 students)</b>	<b>BSN (24 students)</b>
1	INTERPERSONAL	INTERPERSONAL	INTERPERSONAL	INTERPERSONAL
2	INTRAPERSONAL	INTRAPERSONAL	BODILY KINESTHETIC	BODILY KINESTHETIC
3	LOGICAL	BODILY KINESTHETIC	INTRAPERSONAL	MUSICAL
4	LINGUISTIC	LOGICAL	MUSICAL	VISUAL SPATIAL
5	BODILY KINESTHETIC	VISUAL SPATIAL	VISUAL SPATIAL	INTRAPERSONAL
6	VISUAL SPATIAL	LINGUISTIC	LOGICAL	LOGICAL
7	MUSICAL	MUSICAL	LINGUISTIC	LINGUISTIC

## CONCLUSIONS:

The analysis of the data gives us the conclusion that the **Interpersonal** Intelligence is the topmost common dominant intelligence among medical and health sciences.

MBBS and BDS share Intrapersonal Intelligence as the second domain whereas BPharm and BSN share Bodily Kinesthetic.

Interestingly, the third domain is Logical, Bodily Kinesthetic, Intrapersonal and Musical for MBBS, BDS, Bpharm and BSN respectively.

In fourth domain too each discipline shows a different Intelligence; MBBS (Linguistic), BDS (Logical), BPharm(Musical)and BSN (Visual Spatial)

Furthermore, Visual spatial is shared as the fifth Intelligence domain by BDS and BPharm while MBBS shows Bodily Kinesthetic and BSN shows Intrapersonal.

In the sixth domain MBBS shows Visual Spatial , BDS Linguistic , Bpharm and BSN share Logical Intelligence.

Remarkably, Musical Intelligence is shared by MBBS and BDS while Linguistic is shared by BPharm and BSN.

These results will help us in suggesting the preferred learning style for medical and health sciences students in general and designing and delivering courses for each individual program as required.

### **Future research work:**

The authors envisage that learning styles can be enhanced through methodologies in order to facilitate medical and health education through multisensory learning according to the proven studies (Tracy, 1995). As Howard Gardener suggests in a personal note to the authors of the possibilities to "Individuate" (presenting materials to each student in a way that he/she can best acquire the material)an "Pluralize' means that you present important concepts, practices, etc. in multiple ways (Gardner H. , The Disciplined Mind: Beyond Facts And Standardized Tests, 1999). The scope for teachers to develop creative methodologies to include all learning capabilities and styles in classroom environments are immense (Gardner H. , The Unschooled Mind: How children think and how schools should teach, 1991) . There are already efforts to design exercises for students based on the theory of multiple intelligences (Biggs, 2007).

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## Appendix

Multiple Intelligences Test - based on Howard Gardner's MI Model				
<p><b>Score the statements: 1 = Mostly Disagree, 2 = Slightly Disagree, 3 = Slightly Agree, 4 = Mostly Agree</b></p> <p><b>Alternatively for speed, and if easier for young people - tick the box if the statement is more true for you than not.</b></p>				
Score or tick the statements in the white-out boxes only	Score			
I like to learn more about myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	1
I can play a musical instrument	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	2
I find it easiest to solve problems when I am doing something physical	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	3
I often have a song or piece of music in my head	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	4
I find budgeting and managing my money easy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	5
I find it easy to make up stories	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	6
I have always been physically well co-ordinated	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	7
When talking to someone, I tend to listen to the words they use not just what they mean	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	8
I enjoy crosswords, word searches or other word puzzles	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	9
I don't like ambiguity, I like things to be clear	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	10
I enjoy logic puzzles such as 'sudoku'	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	11
I like to meditate	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12
Music is very important to me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	13
I am a convincing liar	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	14
I play a sport or dance	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	15
I am very interested in psychometrics (personality testing) and IQ tests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	16
People behaving irrationally annoy me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	17
I find that the music that appeals to me is often based on how I feel emotionally	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	18
I am a very social person and like being with other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	19
I like to be systematic and thorough	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	20

I find graphs and charts easy to understand										21
I can throw things well - darts, skipping pebbles, frisbees, etc										22
I find it easy to remember quotes or phrases										23
I can always recognise places that I have been before, even when I was very young										24
I enjoy a wide variety of musical styles										25
When I am concentrating I tend to doodle										26
I could manipulate people if I choose to										27
I can predict my feelings and behaviours in certain situations fairly accurately										28
I find mental arithmetic easy										29
I can identify most sounds without seeing what causes them										30
At school one of my favourite subjects is / was English										31
I like to think through a problem carefully, considering all the consequences										32
I enjoy debates and discussions										33
I love adrenaline sports and scary rides										34
I enjoy individual sports best										35
I care about how those around me feel										36
My house is full of pictures and photographs										37
I enjoy and am good at making things - I'm good with my hands										38
I like having music on in the background										39
I find it easy to remember telephone numbers										40
I set myself goals and plans for the future										41
I am a very tactile person										42
I can tell easily whether someone likes me or dislikes me										43
I can easily imagine how an object would look from another perspective										44
I never use instructions for flat-pack furniture										45
I find it easy to talk to new people										46
To learn something new, I need to just get on and try it										47
I often see clear images when I close my eyes										48
I don't use my fingers when I count										49
I often talk to myself – out loud or in my head										50
At school I loved / love music lessons										51
When I am abroad, I find it easy to pick up the basics of another language										52





***Teaching and Learning Transformative Processes  
(The Winter School Program)***

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The European Conference of Education  
Official Conference Proceedings

**Abstract**

Scientific studies never replace or supplant subjective theories, but, in the best case, enter a productive symbiosis; they can contribute to reflecting on and understanding one's own assumptions and thereby making them available to change. Therefore, it is pedagogically sensible to address this tension between scientific and subjective theory, and thereby making pedagogical reflection accessible. For this reason, I bring forward the argument that, only after a practical experience in the field of education has been made a scientific theory-oriented education should follow. This turns conventional education theory upside down: normally a well-grounded scientific education is required first, followed only afterward by cautious experiences in practical areas. Consequentially, a valuable source of pedagogical knowledge is underrated, and regrettably also often discredited. The awareness and reflection of one's own subjective theories have to however, be an integral part of any educational discussion of pedagogy and learning, should they not pass by reality. The idea of allowing educational experiences without previous scientific education was tested in the winter school program "Modern Teaching Methods" at the Telavi State University. The participants in the winter school program were students from different disciplines none, however, had studied educational sciences. The participants were thus highly heterogeneous with respect to their educational training, but homogeneous with respect to their scientific inexperience in relationship to educational sciences. The interaction of the participants with theoretical assumptions of and models of pedagogy and their own experiences generated a productive tension that makes continuing related learning very probable.

Keywords: Education, teaching, learning, transformation, winter school, methodology, media

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## Introduction

Teaching and learning by experience -- whether through kinesthetics, simulation, role-playing, field experience, and the like -- are basic to all human interactions. This kind of teaching and learning exists prior to any systematic reflection about ways to convey or acquire knowledge (cf. Gadamer, 1960). Anyone serious thinker about education is aware of this simple fact. In other words, insight concerning education does not require formal training in education as a social scientific discipline. In fact, "common sense" and intuitive understandings regarding teaching and learning by those without a background in the "science" of education produce what may be called subjective theories of education, and these may be differentiated from formal, scientific theories. So-called subjective theories influence our perception and give us direction in everyday life.

Subjective theories, however, can stimulate scientific reflections. Subjective approaches to education embrace clinical pedagogy and experiential learning, whereas scientific teaching and learning is based on abstract theory rather than application. Furthermore, subjective theories and scientific reflections are complementary. That is to say, so-called pre-theoretical suppositions (subjective theories) are no less valid than scientifically derived theories. Both types of theory have their place and are related to each other. The efficacy of subjective theories of education has been confirmed again and again. It can be demonstrated that the perception and explanation of certain phenomena, such as teaching, learning, conflict resolution, role expectation, evaluation and communication, are guided by subjective assumptions rather than by scientific theories emphasized in formal education training programs. To interpret this reality as a declaration of the bankruptcy of scientific educational training-would be to miss the point being made here, which is the usefulness of a subjective-scientific theory symbiosis.

Georgia's education system, along with education systems in other developing countries and particularly those in post-Soviet countries, is experiencing significant changes. Traditional scientific approaches such as teacher-centered instruction (lectures) and rote-memorization are being replaced by new innovative pedagogical techniques that reflect the principles of subjective educational theories. Traditional learning practices are accompanied by new thinking about instructional methods as part of Georgia's modernizing process. Innovative pedagogy, also labeled constructivist, will bring Georgia's educational system in line with that in the western world. The government is making critical changes in its higher education curriculum in the areas of administration, management and teacher preparation programs.

Scientific studies never replace or supplant subjective theories; in the best case scenario, these studies enter a productive symbiosis. They can contribute to reflecting on and understanding one's own assumptions and thereby make them available to change. Only after a practical experience in the field of education has been made should a scientific theory-oriented education follow. This turns conventional education theory upside down: Normally, a well-grounded scientific education is required first, followed only afterward by cautious experiences in practical areas; a clear leading role of scientific theories before the practice is assumed. In addition, subjective theories that are always present are ignored or simply negated. Consequently, a valuable source of pedagogical knowledge is underrated, and

regretfully also often discredited. The awareness and reflection of one's own subjective theories has to, however, be an integral part of any educational discussion of pedagogy and learning. Innovative pedagogy or constructivism, in other words, must be embraced.

### **Practical Implementation**

The idea of allowing educational experiences without previous scientific education was tested in the Winter School Program, namely "Modern Teaching Methods" at the Telavi State University during February 7, 2014 to February 16, 2014. The participants in the Winter School Program were students from different disciplines; none, however, had studied educational sciences. The participants were thus highly heterogeneous with respect to their educational training, but homogeneous with respect to their scientific inexperience in relationship to educational sciences.

As stated above, the participants had practical experiences in the field of teaching during the lectures of the Winter School Program. The topics of the Winter School Program, *Learning in the 21st Century*, *New Methods in Teaching*, *Theories of Teaching and Learning*, *Teaching Simulation*, etc., provided participants with an opportunity to acquire new areas of knowledge and at the same time combined them with, and respectively reflect on, their previously-made everyday experiences. In particular, the methodological approaches of all presentations can be summarized as an intentional endeavor to resonate the theme of constructivism. Constructivism in its educational orientation is like no other theoretical presupposition capable of thinking about learning and teaching together, thus generating a highly subjective point of view concerning learning as the appropriation of the world and the making sense of the world around us. The following principles of constructivist-driven didactics can be found in and were used in many variations as part of the Winter School Program:

- subject orientation
- connecting to the previous experiences of the participants
- change of social structures
- large share of social work structures (team work, project work)
- generative topics
- action orientation
- regular feedback
- reflexivity (see Siebert 2008; Arnold/Tutor 2007)

The principles and methods that have been referred to were supported by a focus on new media in the teaching-learning process. It was found that the above-mentioned constructivist features can be reinforced through the use of web-based and electronic media. This leads to a double learning output: on the one hand, their own learning processes are supported and encouraged; on the other hand, through the use of new teaching and learning technologies, "media competence" is an automatic benefit. Thus, the use of these technologies is not only a question of learned content, but also one of media competence.

The observation of the activities of the participants during an ensuing educational orientation program confirms for a large part the assumptions of constructivism:

- Participants preferred collaborative learning environments.

- Discussions were particularly intense when they could be connected to one's own experiences.
- The discussions and learning outcomes often related to future areas of occupation or problem areas, which supports the assumption that the relationship between learning contents plays an important motivational role in learning.
- Content incentives by the lecturers are assimilated and are interpreted in a constructive and critical discussion process and further developed based on individual formulation of questions.
- This does not result in a passive reception of the presented content, but in an active acquisition and processing process.
- Through the reflected experience that constructs knowledge, confidence is developed by the participants that learning is not a causal product of teaching, but always a personal achievement of the learner, which can, however, be initiated and supported by stimulation and motivation by the teacher.
- Thus, the new role of the teacher as a learning consultant, expert and co-learner has become clear and can be reflected upon.

As already mentioned above, the “Modern Teaching Methods” sessions of the Winter School Program, funded by the Ministry of Education and Science of Georgia, were successfully implemented at Telavi State University. The goal of this Winter School was to raise awareness for a select group of students regarding the effective usage of modern methods and the information-communication technologies that can easily accelerate the learning process.

In our opinion, the general education is the foundation of education system. The quality of education depends on the qualification of teachers employed. It was important that the Winter School Program unified qualified experts and students who formulated recommendations that contributed to the authoring of a new course syllabus known as “Teaching Innovative Methodology”. This new course syllabus galvanized the discourse of lectures and focus groups between experts and students on contemporary and innovative pedagogy.

The Winter School Program particularly included lectures and lesson-simulations designed in order to illustrate the practical usage of acquired information. Students were also evaluated on how well they internalized an understanding of teaching methods introduced through the seminars. An example of actual student performance is exhibited in the following descriptive statistical report of how students exhibited a high measure of content validity during the lecture on *Contrasting Teaching and Learning Methods*:

#### **Summary Descriptive Statistical Findings:**

Mean	95
Mode	100
Min	70
Max	100

Since a correlation of .80 is a strong measure of content validity and since the class mean constitutes a correlation of .95, it stands to reason that actual student

performance resembled a strong and valid measure of actual teaching and learning during this lecture.



Figure 1

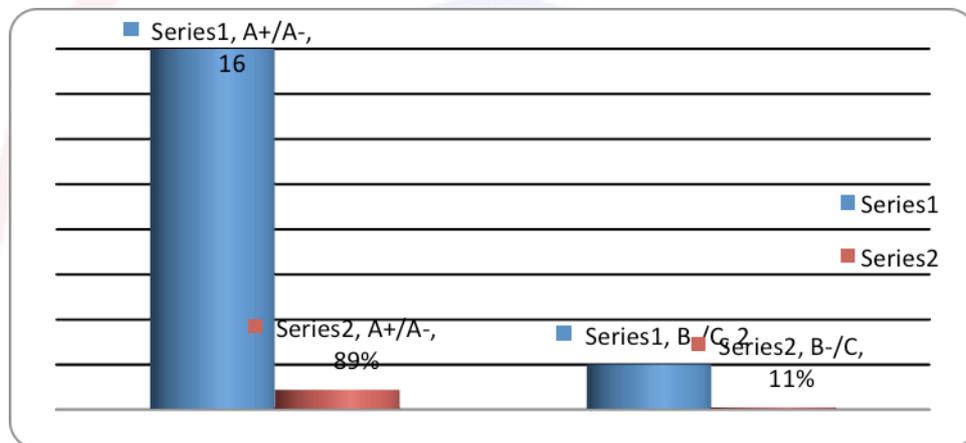


Figure 2

### Conclusion

Overall, it was found that the use of research-based theories about learning and teaching -- when compared to participant’s previous traditional educational experiences – propelled students to consider teacher education as a possible career. In addition, the interactive exchanges that participants had with student colleagues regarding other empirical research findings as well as with the examination of scientific theories heightened student reflection to unprecedented levels; these lively encounters are hardly found in university courses of education studies.

The interaction of the participants with theoretical assumptions and models of pedagogy and their own experiences generated a productive tension that makes the continuity of learning very probable. It was also clear that effective forms of learning occurred in heterogeneous class configurations, which accelerated the pace of learning in both formal (lectures, seminars) and also informal learning settings (e.g. the Internet). More profoundly, the use of new IC- technology makes it clear that the importance of informal learning (see EU Commission 2003) continues to grow and can be supported by targeted use of new media during the course of studies.

For future endeavours, advanced courses or educator preparation programs should connect to the vibrant student experiences of the Winter School Program on “Modern Teaching Methods”; this means that students should gain practical experiences in the field of practice alongside and reinforcing the theoretical participation in educational sciences and psychology of learning. In the scientific part of education, value must be placed on making these experiences independent objects of pedagogical reflection.



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The logo for the International Association for Educational Research (IAFOR) is centered on the page. It features the word "iafor" in a light blue, lowercase, sans-serif font. The text is enclosed within a circular graphic composed of two overlapping, thick, curved lines. The upper-left portion of the circle is a light red color, while the lower-right portion is a light blue color, creating a sense of motion or a stylized 'O' shape.



***Pre-service Teachers' Perception of Service-learning Instructional Strategy in Social Studies Curriculum in South-West Nigeria***

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**Abstract**

Nigeria at centenary is riddled with poverty and high illiteracy rate, corruption and corresponding increase in unemployment, ineffective governance and apathy on the part of the citizens among others. As a result of these situations, there seems to be a paradigm shift to envisioning many new approaches to educational system to bridge the gap between the school and community for civic engagement. Some of such new approaches may be captured in service-learning instructional strategy (hands-on teaching and learning strategies that integrate meaningful service and classroom content). Indeed, Nigeria is yet to incorporate the service learning into the academic curriculum, despite its' effectiveness. This paper, therefore investigated pre-service teachers' perception of service learning in social studies curriculum. A descriptive quantitative survey method was adopted by using random sampling technique to select three public Universities in South-West, Nigeria. Three hundred (300) Social Studies education students were purposively selected, employing Service-Learning Perception Scale (SLPS). The scale was validated and its reliability coefficient was 0.75 using Cronbach Alpha. The data collected were analysed using percentage and t-test Analysis. The findings revealed that students showed greater willingness to enrol for a course in service-learning, if it would improve their career development, promote their personal and social development among others. Based on these findings, policy recommendations were made such as integration of service learning into university curriculum and clear standard guides that are back up by relevant laws should be put in place for proper implementation for civic engagement.

Keywords: Academic programme; attitudes, Service-Learning, Social studies, University education, pre-service teacher

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## Introduction

Nigeria at centenary is riddled with poverty and high illiteracy rate, corruption and corresponding increase in unemployment, religious intolerance, drug abuse, HIV/AIDS, sexual immorality, gender discrimination, leadership problems, election violence, ethnicity, ineffective governance and apathy on the part of the citizens, among others. A critical analysis of these problems and issues that are imminent and recurring in Nigerian society, which to a large extent regulates her social climate, can largely be attributed to the type of attitude and disposition people have towards civic responsibilities. The situation is the same in Nigerian institutions of higher learning, whereby students' belief in their own capabilities to achieve a goal and feelings or mood towards civic responsibility is believed to be at the lowest ebb. This has directly or indirectly affected the nation's institutions of learning and society at large. The knowledge and corresponding attitude of Nigerians towards societal issues at various levels had been found to be generally low and unfavourable (Ajitoni & Gbadamosi, 2012; Ogunyemi, 2011). There is the need, therefore, to change these positions for the better.

Education has been responsible for the building of the societal values. Alade (2004) observed that through education, people are enabled to develop their knowledge and skills, adopt new behaviour and be able to survive in the society. In the same vein, Oderinde (2005) opined that all over the world, education is the key to development which clearly demonstrated that education plays vital roles in the development of the individual, society and the nation as a whole. Little wonder, the revised National Policy on Education (FRN, 2004), stated that no education system can rise above the quality of its teachers. This has made the subject of teacher's effectiveness a perennial one in educational discourse since the quality of education at any level is highly dependent on the quality and dedication of the teachers (Adu & Ojelabi, 2009; Obanya, 2009). Hence, there is the need for effective teacher education by universities and colleges of education for development of knowledge and pedagogical skills of teachers in training in various fields of studies such as Social studies, Economics, Geography, Physics, and Chemistry.

Consequently, there is a renewed emphasis on development through education, which seems to be a paradigm shift to envisioning many new approaches to educational system to bridge the gap between the school and community for civic engagement. Some of such new approaches may be captured in service-learning instructional strategy. Service learning is an instructional strategy through which students apply their academic skills and knowledge to address real-life needs of their own communities. It provides compelling reasons to learn; teaches the skills of civic participation and develops an ethic of service and civic responsibility. It also, promotes motivation and retention of academic skills, as specific learning goals are tied to community needs (Gbadamosi, 2012; Franco, 2000).

The concept of service learning is based primarily on the views of John Dewey, a philosopher and educator, who advanced the concept that, active student involvement in learning is an essential element in effective education. He viewed the community as an integral component of educational experiences for enhancing a student's education and for developing future societies (Waterman, 1997). Service learning evolved as a vehicle to strengthen student's learning, to reconnect them with their communities, to

counter the imbalance between learning and living, and to repair the broken connection between learning and community. Dewey views experience as what occurs when a transaction is carried out within the environment. Dewey proposes two principles to ensure that an experience becomes educative: the principle of continuity and the principle of interaction. An experience would therefore become educational when the interaction becomes a continuous experience exemplifying growth and learning, keeping in mind that the aim of education is growth (Holloram, 1967). Reflection on an experience is also noted as important by Dewey (cited in Holloram, 1967) and forms the basis of experiential education, implying that learning from experience in an appropriate way achieves far more than theoretical or technical knowledge.

Service-learning is receiving wide acceptance in higher education as an innovative educational practice that strengthens the acquisition of course concepts while also affecting students' attitudes regarding social problems, community issues and civic action (Franco, 2000). It was observed that if service learning is well incorporated and implemented in our educational institution it would to a greater extent develop positive civic attitudes among students.

### **Teacher Training, Social Studies Education, Service Learning and Civic Engagement**

Conventional teacher training programmes place a strong emphasis on ensuring that student teachers develop techniques of classroom management and the ability to help students acquire the knowledge laid down in mandated curriculum documents. Though an experiential basis for this knowledge acquisition is customarily provided through experience in the professional field, such as the teaching practice or teaching internships, institutional constraints often restrict what student teachers learn from this experience about young peoples' lives, the communities in which they live and the nature of their lives outside the school. This problem is addressed by service-learning, which is receiving wide acceptance in higher education as an innovative educational practice that strengthens the acquisition of course concepts while also affecting students' attitudes regarding social problems, community issues and civic action (Eyler & Giles, 1999).

The development of civic attitudes occupies a special role in Social Studies teacher education, because the overall aim of teaching social studies is to prepare young learners to an 'active and informed citizens' for effective participation in Society. Social Studies teaching has the capacity to make good citizens and patriots out of the Nigerian children and youths. It covers cognitive, psychomotor and affective development of learners. In cognitive terms, it presupposes the intellectual development of the learners in understanding their environment, with a view to finding solutions to various societal problems. Moreover, affective aspect of the curriculum is designed to assist the learners to acquire necessary values, attitudes, virtues and competences for meaningful living in the society. The selection of objectives, contents and procedures involved in social studies instruction, if carefully and appropriately directed, can prepare a student to participate effectively in the progress of his community. On the other hand, psychomotor aspect of social studies teaching has to do with acquiring skills to solve societal problems (Gbadamosi, 2013). It is perhaps on this that one of the objectives of social studies in Nigeria schools

hinges: *'to develop a capacity to learn and acquired certain basic skills, including not only those of listening, speaking, but those skills of hands and head analysis and inferences which are essential pre-requisite for personnel development as well as contribution to the betterment of mankind'* (FGN, 2004, pg. 9).

An active and informed citizen does not only possess the requisite knowledge and skills that would enable him/her live a meaningful life in the society, but should also imbibe those values and attitudes that are treasured by the society. It is when generations of learners continued to imbibe and nurture these values attitudes that the society is assure of survival. However, a number of studies revealed that service-learning can foster student teachers' engagement with the profession, enhance their self-esteem, their leadership mentoring ability, and increase their respect for and understanding of diverse communities (Honadle & Kennelly, 2011). It can also provide a compelling and broadening context for the transformation of teacher learning, leading to new understanding of ways of connecting with students at the margins of society (Shirley (2006); Lori & Cleary (2005).

Practices to increase engagement are multiple and varied, but service learning, is such promising practice, that links community service and academic study so that each strengthens and transforms the other (Honadle & Kennelly, 2011). It provides multiple opportunities to develop meaningful relationships and, in addition, enhances content - driven scholarship by focusing upon the application of knowledge to solve complex community problems. Students are able to integrate knowledge with experience and develop a better understanding of themselves, as well as an understanding of their role within the greater context of a democracy. Service-learning is recognized as one among many effective practices that stimulate greater levels of student involvement in "educationally purposeful activities," which, in turn, produce greater retention (Kuh, Kinzie, Schuh, & Whitt, 2005). In effect, service-learning creates and refines the social and learning connections thought to be important to institutional commitment and educational success.

As mentioned earlier, there are other studies conducted which have shown the benefits of students performing community service and service learning. One of the benefits of participating in community service is the development of a student's "self-concept" (Berger & Milem, 2002). In an earlier study Benger and Milem (2000), noted three dimensions of self-concept. These were academic ability, achievement orientation, and psycho-social wellness. A study by Rudy and Grail (2014) supports the importance of students developing their self-concept and he indicates that higher educational institutions have an important role in assisting the student with that development. Students learn about themselves through their interaction with others and the feedback they receive from that interaction. Community service provides the opportunity for students to learn about themselves through the interaction of people that they would not necessarily interact with in the classroom. He believes that students learn how to care for others and develop a commitment to the betterment of society through community service activities. Guarasci and Cornwell (1997) describe this as the "self-other" dichotomy. Students see how they are both different from and yet similar to others outside their immediate biographies; they begin to comprehend how self-respect and regard for others are intimately linked both in their development and in the needs of the communities in which they live (Gallini & Moely, 2003).

Thus, community service can have a transforming educational impact on undergraduate students.

However, there are four stages of service learning to ensure an ongoing academic connection while students develop in both cognitive and affective domains. These are:

**Preparation** includes all forms of research, social analysis, and planning. With guidance from their teacher, students identify a real community need. They use previous and newly acquired skills and knowledge from across the disciplines to understand the underlying problem and relate it to their studies. They often collaborate with community partners as they prepare to provide meaningful service. Students draw on the skills, talents, and interests of individuals while they shape the service to come.

**Action** is the direct result of preparation, enabling students to confidently carry out their plan and apply what they have learned to benefit the community. As students put their plan in motion, they come to realize how classroom lessons fit into their daily lives and shape the lives of others. Of course, learning continues as they meet new people and interact with their environment in meaningful ways. As they serve, students raise questions that lead to a deeper understanding of the societal context of their efforts.

**Reflection** is the vital and ongoing process that integrates learning and experience with personal growth and awareness. Students put cognitive, social, and emotional aspects of the experience into the larger context of the self, the community, and the world. They may compare initial assumptions with what they have come to learn through the authentic actions taken. They may consider what they would change or improve about a particular activity. Through varied modalities akin to using multiple intelligences, reflection proves truly essential.

**Demonstration** enables students to provide evidence of what they have gained and experienced through community involvement. They exhibit their expertise through public presentations—displays, performances, letters to the editor, class lessons for peers or parents—that draw upon the preparation, action, and reflection stages of their experience. Students take charge of their own learning as they synthesize and integrate the process through demonstration (Cathry, 2007).

It must be noted though that service learning has been shown to have benefits over conventional teacher training; service-learning also has its sceptics. It has been noted that there are those who believe that service-learning weakens the curriculum by spending valuable classroom time doing service projects in the community. Problems with service learning can also range from the demands of such a programme on faculty members to the quality of the learning activities assigned (Gender & Rene, 2007).

This concern has been echoed by others. Bender (2006) comments that applying educational principles in a practical setting is often less valued than theoretical in-class work. They note that service learning, with the integration of community service into an existing curriculum, is viewed with the suspicions that students are receiving academic credit for volunteer work and that academic standards are being

compromised. They however explained that the reason for this suspicion is the lack of faculty understanding or familiarity with service learning as an academically credible form of pedagogy.

To combat the concern that community service is not an academically valid form of pedagogy, the Campus Outreach Opportunity League (COOL) developed the following critical elements of thoughtful community service to assist schools in developing a legitimate community service programme as follows

1. Community Voice – Colleges and universities should build bridges with the community. Their voice concerning the real needs of the community should be heard.
2. Orientation and Training – This is an important first step. Students should learn about the community in which they are serving, the organization in which they will be partnering with and the specific problem that will be addressed by their service.
3. Meaningful Action – This one could be the most crucial of the five elements. Meaningful action means that the service which is being provided is necessary and valued by the community. Students need to know that they are making a difference through serving and that their time was appreciated and useful to the betterment of society.
4. Reflection – Reflection is very important to the community service learning experience. Reflection should take place soon after the service is completed so that critical academic elements are added to the experience.
5. Evaluation – Evaluation can be used to provide meaningful feedback from the student and the service organization representative or immediate supervisor. Evaluation provides the opportunity for overall improvement in relation to the student and the agency.

Reiterating the significance of service learning, review of literature indicates that a number of world organizations and institutions have successfully implemented service learning programmes, have to a large extent becoming useful strategies in community engagement. This may result to meaningful economic, political, cultural and rural development all of which are needed for social change and sustainable development. The United State of American, United Kingdom, Japan, and so on to mention but a few, are actively in the forefront in service learning activities. At African level, the review also showed that a number of service learning institutions exist in South Africa, Botswana, Ghana, Morocco, Senegal, Tanzania, where service learning and its components are fused into some programmes and courses with good results (Bender, 2006; Dugguh, 2013).

In Nigeria, research indicates that the traditional system of education is practiced particularly in universities which regard themselves as Ivory Towers - separated from the community in which they are located. Emphasis to a large extent is placed on Open, Distance and E-learning where community issues seem to have no place in the university curriculum. The universities may have not noticed that service learning activities are growing rapidly in other parts of the world. This might account for the world ranking of universities. This is because service learning has powerful impact on

young people, communities and their development. It is also a dynamic process through which students and social growth is tightly interwoven into their academic and cognitive development. However, some newly established universities like the Federal University, Kashere, Gombe State, ABTI University, Yola to mention a few, have service learning activities infused into the university curriculum (Dugguh, 2013; Gbadamosi, 2012)

Since this concept is emerging in some Nigerian universities and other institutions, it becomes imperative to investigate students' perception of service-learning before integrating this module into the teacher training curriculum. Uninformed students who participate in community service-learning programmes may develop negative attitudes and participate unwillingly. The voice of the student has been identified as an essential element of service-learning programmes (Rudy & Grail, 2014). Cathry (2014) added that people only learn what has meaning for them personally, and therefore they create their own learning through selective perception. Information about preconceived ideas gained by surveying the attitudes and perceptions students have, concerning service-learning and community service could provide information to lecturers about student teachers in teacher training programmes, so as to ensure successful integration of service-learning in teacher training programmes.

Furthermore, no study of this kind has as yet been done specifically for and among Nigerian higher education institutions and students, although, there are few studies on the topic of service-learning and its effect on learning outcomes for example, (Gbadamosi, 2012; Olabode, 2010). The Nigerian educational environment has not explored its possibilities and benefits in formal academic programmes and studies.

This study therefore, investigated the perception of pre-service teacher in adoption of service-learning instructional strategy to improve learning outcomes in Social studies. Furthermore, it sought to find out the factors that can motivate and deter pre-service teachers in adopting service-learning in Social Studies.

### **Research Questions**

The following research questions were formulated to guide the conduct of this study:

1. Do pre-service teachers participate in community service activities?
2. What is the level of pre-service Social Studies teachers' perception of service learning instructional strategy?
3. Is there significance difference in pre-service Social Studies teachers' perception of service learning instructional strategy based on gender?
4. What are the perceived factors that can motivate pre-service teachers in adopting service-learning in Social Studies?
5. What are the perceived factors that can deter adoption of service-learning in Social Studies?

### **Methodology**

This research adopted descriptive qualitative survey method. A sample of three hundred pre-service teachers who registered for Social studies methods was purposively selected from three federal universities. The 3 universities were randomly selected from the list of public universities that offered the course in south

western Nigeria. A total of 100 students (50 male and 50 female) were purposively selected from each university. The selection was done during Social Studies methods lecture periods and in the free time of students.

The researcher employed Service-Learning Perception Scale (SLPS) adapted from Bender and Jordan (2007) titled Service-Learning Attitude and Perception Scale (SLAPS). It contains both open-ended and closed ended questions. It was divided into three sections made up of a total of items. Section A consists of the demographic information of respondents - gender, age, level and marital status. Section B covered items about experience and participation of respondents in community service to draw out their previous and current knowledge and participation in community service, and to also find out if they would wish to engage in such activities in future. The respondents were expected to express their views in the affirmative or negative by selecting Yes or No. Section C was a four-point likert scale designed to measure perception of the students on service learning. The responses varied from strongly agree- (5) to strongly disagree-(1). Respondents were required to choose the most appropriate answer and provide answers in writing where necessary. This part was hence made up of two open-ended questions. The instrument was re-validated using experts' review and the internal consistency reliability measure was calculated using Cronbach alpha which yielded reliability value of 0.75. The researcher and two research assistants administered the questionnaires to the respondents and collected back on the spot after their completion by the students. The data collected were analysed using descriptive statistics of frequency count and t-test.

## Results and Discussion

The findings of this study are organized by the five research questions and the questions from the student survey related to each research question.

**Table 1.0: Percentage of Respondents on the basis of Gender**

GENDER	FREQUENCY	%
Male	150	50.00
Female	150	50.00
Total	300	100.00

Table 1.0 shows the respondents distribution by gender. There are one hundred and fifty participants comprising (50%) male and (50%) female.

**Research Question 1:** Do pre-service teachers participate in community service activities?

**Table 2: Descriptive Statistics on Pre-service Teachers Participation in Community-Service Activities**

S/N	ITEMS	YES		NO	
		Frequency	%	Frequency	%
1.	Have you heard of community service?	264	88.00	36	12.00
2.	Have you ever participated in any voluntary activity in your community?	76	25.76	219	74.24

3.	Have you participated in any voluntary activity in any other community?	42	14.00	258	86.00
4.	Do you participate in any public enlighten programme in your school?	61	20.89	231	79.11
5.	Do you currently belong to any voluntary association?	46	15.86	244	84.14
6.	Do you have any previous community service experience?	76	25.33	224	74.67

**Source:** Field work, 2014

According to table 2, 264 representing 88.0% of the respondents indicated that they have heard of community service. This is in consonance with, James, Stella and Paul (2010) in which 92.9% of the respondents indicating that they have heard of community service. Two hundred and nineteen representing 74.24% of the respondents indicated that they have not participated in voluntary activity. Also, 224 (74.67%) do not have any previous community service experience.

This shows that, majority of the respondents, have heard about community service but has not participated in community service and do not join voluntary association in the campus. This implies that pre-service teachers could not adequately utilize the knowledge acquired in school to meet societal needs while in school.

**Research Question 2:** What is the pre-service Social studies teachers' perception of service learning instructional strategy?

**Table 3: Descriptive Statistics on Pre-service Teachers Perception of Service Learning Instructional Strategy**

S/N	STATEMENT	AGREED (%)	DISAGREED (%)
1.	Community service gives opportunity to bring my expert knowledge to bear on my community	256 (85.30)	44 (14.70)
2.	I feel a sense of duty to participate in voluntary community service	105(36.33)	184(63.67)
3.	Community service broadens one's knowledge of diversity, career choices and social awareness	251 (83.67)	43(16.33)
4.	Community service gives opportunity for students to solve real life problems	231 (79.11)	61 (20.89)
5.	If there is opportunity, I will enrol for a course/module with community service	234 (80.41)	57 (19.59)
6.	I would like to participate in any community service activity in the near future	205 (69.73)	89 (30.27)
7.	It is important to me, to have a sense of contribution and helpfulness through community service	169 (57.88)	123 (42.12)
8.	Combining community service with curriculum makes learning relevant to the needs of the society	226 (77.66)	65(22.34)

**Source:** Field work, 2014

It could be deduced from the data that, 231 representing 79.11% of the total respondents perceived that community service gives opportunity for students to solve

real life problems while 61 (20.89) disagreed. With responses to whether community service gives opportunity to bring my expert knowledge to bear on my community, 256 representing 85.30 % of the respondents agreed, 44 representing 14.70% disagreed. The respondents 205 (69.73%) did however indicate that they would participate in any community service activity in the near future and would like to enrol for a course/module which included community service 234 representing 80.41% while 57(19.59) disagreed. This findings support the report of Bender & Jordan (2007). The respondents felt that they would benefit from carrying out community service while in school in terms of career, personal and social development. This implies that pre-service teachers had positive perception of the use of service learning in the teaching of social studies and ready to adopt service learning as indicated in the response that ‘if there is opportunity I will enrol for a course/module with community service’.

**Research Question 3:** is there significant difference in pre-service Social studies teachers’ perception of service learning instructional strategy based on gender?

**Table 4: T-test Analysis Comparison of Pre-service Teachers’ Perception of Service Learning Instructional Strategy in Social Studies based on Gender**

Pre-service Teachers’ Perception	N	X	SD	Df	t-cal	t-tab (0.005)	Sig.	Remark
Male	150	58.97	17.27	298	1.58	1.96	0.111	NS
Female	150	60.15	15.86					

\*Sig at  $p > 0.005$

Table 4 revealed that there was no significant difference in perception of male and female pre-service Social studies teachers on service learning instructional strategy. This is because; the t-cal (1.58) is less than t-tab value (1.96). Hence, it implies that there was no difference in the opinion of both sexes. Both male and female see the need to connect learning with real life problems.

**Research Question 4:** What are the perceived factors that can motivate pre-service teachers in adopting service-learning in Social Studies?

The respondents highlighted likely factors that would motivate pre-service teachers to enrol for a course/module which included community service. The majority indicated career/future plans and better performance in learning outcomes; personal development; understanding of social problems and appreciating students. These results highlighted the fact that students are career-oriented and would like to take part in activities that would benefit them personally, socially and also benefit their career development.

**Research Question 5:** What are the perceived factors that can deter adoption of service-learning in Social Studies?

Open-ended question on what might limit the likelihood that pre-service teachers will embrace service-learning was raised and respondents mirrored the perceived factors. Majority of respondents indicated that low knowledge as to how to use service-

learning would decrease their likelihood of doing so; many also suggested time constraint as a result of busy scheduled. Some also, mentioned lack of fund, choice of service to render, lack of reward on service rendered and insecurity in the nation. This latter finding is consistent with Patel (2005); Lori & Cleary, (2005) results that some factors can limit effectiveness of service-learning instructional strategy.

### **Conclusion and Recommendations**

From the outcomes of this study it can be concluded that pre-service teachers had very low participation in community service activities and had positive perception of service-learning instructional strategy; this shows a great willingness to do community service related to their current teacher-training programme in Social studies. It also, implies that there is urgent need for the universities to incorporate and emphasise the importance of participating in community service into the curricular package.

Prior knowledge about community service-learning should be regarded as important when considering the integration of this component into a course/module, as it has an identifiable influence on students' perception of community service-learning and their willingness to do service-learning as part of their teacher training. The result also indicated that there are some factors that can limit effectiveness of service-learning.

It is therefore recommended that:

- Faculties of education in the nation's universities and colleges of education should accept the full responsibility of preparing teachers by providing them with pedagogical skills to meet up with societal expectations by integrating service learning into the curriculum of Social studies.
- Proper planning, funding of community service and clear standard guides should be put in place that is back up by relevant laws for proper implementation.
- Teacher educators and their institutions should not only include service learning in their curriculum but should also provide practical experiences for pre –service teachers to be well equipped on the use of service learning instructional strategy.
- Teachers should develop clear learning objectives that could address real community needs. This will bridge the gap between the school and community.
- Students' disposition to community service-learning should be regarded as important when considering the integration of this component into a course/module.
- Government should organize a form of re-training programme for teacher's educators in the effective use of service learning instructional strategy through organization of workshop, seminars and conferences. This would help them to effectively apply the strategy in teaching of Social Studies to bring about change in the universities and society at large for civic engagement.

This research should be replicated in all universities in the six geo-political zones of Nigeria, so that a more generalization would be made. Further research could investigate on the effect of service learning instructional strategy on pre-service teachers' learning outcomes.

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## **Addressing Cultural Diversity in the International Classroom: A Challenge or an Opportunity?**

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### **Abstract**

Composition of classrooms in higher education is evolving as universities become more accessible to students from different social and cultural backgrounds. This change has led to an increase in campus diversity among faculty members as well as students. The diversity among students challenges instructors to examine their previously uniform, teaching practices.

To address this issue, it is necessary to consider the diversity that instructors themselves bring to the international classroom in terms of gender, ethnicity, social class, religious beliefs and other individual differences. Glossing over such differences blinds instructors to the effects of increasing student diversity on the classroom environment (Plank & Rohdieck, 2007).

This presentation highlights three outcomes of an “international classroom” that integrates student and instructor diversity. First of all, by recognizing student diversity, instructors are better able to design culturally sensitive courses and apply the most suitable teaching methods to address a diverse student group, maximizing students’ potential. Secondly, identifying diversity stimulates clearer communication between instructor and students’ appreciation for the student’s individual uniqueness, thus creating a positive learning environment. Finally, the unrealistic and inequitable notion of a culturally “neutral” classroom is dispelled (Timpson, Canetto & Yang, 2003). Instructors’ individual identities influence the language we use, the specific issues or points we discuss in the classroom, the ideas and values we share and ultimately our interactions with our students.

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## 1. Introduction:

The notion of culture embodies a vast and complex school of definitions. Culture can be defined as the shared patterns of behaviors and interactions, cognitive constructs, and affective understandings that are learned through a process of socialization. These shared patterns identify the members of a culture group while also distinguishing those of another group. According to Banks & McGee (1989),

“... Culture is the values, symbols, interpretations, and perspectives that distinguish one people from another in modernized societies; it is not material objects and other tangible aspects of human societies”.

Additionally, the broad definition of the international classroom entails a learning environment in which students from an international background convene to collaborate and share experience and knowledge and at the same time develop skills, which eventually prepare them for the global community of which they will later be a part. In our institute, the international classroom provides for students from a variety of ethnic, cultural and social background, who co-exist in an international environment in an effort to develop global and intercultural competencies, which are pertinent in a global society. Preparing students with intercultural skills is crucial to the current multicultural arena in which we operate. It is therefore necessary for students to develop cross-cultural skills and understanding of critical issues regarding the operation and management of multinational and transnational organisations.

I will address the issue of cultural diversity between instructors and students within the international classroom. The influence of an instructor’s character and behaviour on the ultimate performance of a student is not to be underestimated. Furthermore, there are other circumstances that contribute to a student's academic performance. These include personal characteristics, family background and societal experiences. However, research suggests that, among school-related factors, teachers matter most. Other research states that, compared with teachers, individual and family characteristics may have four to eight times the impact on students’ achievement. Although policy discussions focus on teachers because it is arguably easier for public policy to improve teaching than to change students' personal characteristics or family circumstances, effective teaching has the potential of boosting students’ ability to perform.

*“I prefer the teachers who know and take their responsibilities well. And treat students equally”<sup>1</sup>.*

Similarly, one of the more recent trends in higher education is to develop global citizens for global employability and global responsibility (Fielden, 2007) (Corbin, 1998) and therefore such trends are expressed in the internal strategies set out by many institutes of higher education. Accordingly, these institutions are increasingly placing high premiums on intercultural learning, an appreciation for cultural diversity, the development of cross-cultural communication skills and the fostering of a global perspective across all subject areas. In addressing cultural diversity in the

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<sup>1</sup> Interviewee: Chinese student (1)

international classroom, the following areas will be explored: First of all, the idea of the international classroom and its intricacies will be discussed. Secondly, I will examine the influence of international faculties and their effect on the international classroom. The third discussion ensues with an outline of three outcomes of the international classroom. These are:

1. How to recognise student diversity and allow instructors to be better able to design culturally sensitive courses and apply the most appropriate teaching methods when addressing a diverse student group in order to maximise the full potentials of students.
2. How to increase vivid communication channels between instructor and students, and students among themselves by identifying cultural diversity, thus stimulating appreciation of others' uniqueness, and ultimately creating a positive learning environment.
3. How to contend with the misconception that a culturally "neutral" international classroom is viable.

Finally, instructors' individual identities influence the language used, the specific issues or points discussed, the various notions and values shared and ultimately our interactions with our students in the international classroom.

The general purpose of this paper was to examine the issues relating to cultural diversity. As an opportunity, addressing cultural diversity:

- Enriches the educational experience – appreciating beliefs, experiences and perspectives that are dissimilar to our own, in a richly diverse intellectual and social environment.
- Builds strong teams, communities and consequently, the workplace. Education within a diverse setting prepares students to become global citizens in the current complex, pluralistic society. Additionally, it fosters mutual respect and understanding, and helps to construct communities whose members are evaluated by the quality of their character and contributions.
- Encourages personal growth and an enriched society, and questions stereotyped misunderstandings.
- Stimulates critical thinking, and assists students in learning to communicate effectively with people from a variety of backgrounds.

However, there are several disadvantages to the culturally diverse classroom. First of all, instructors' lack of experience in working in this relatively 'emerging' environment. According to Hooks, (1994 p. 37) "it's hard to put yourself in someone else's shoes and think about how his or her experiences may have been very different from yours". In other words it is extremely difficult to be culturally competent in the international classroom, when you do not share the same culture as your students. Secondly, the teaching methods applied in the traditional classroom might not be suitable for the culturally diverse classroom. Jenkins and Bainer (1990) reflect this at the presentation at the Lilly Conference (1990) on 'Chicago Teaching'. The disadvantage of this is that teachers must always be aware of their teaching methods and engage in a reflective process to be sure they are not treating one group of students differently from the other. Ineffective teaching methods are not conducive of

productive learning. Differentiation is also a common cause of concern in the culturally diverse classroom (Jenkins and Bainer, 1990). Different ethnic groups of students generally have different educational and cultural backgrounds and so instructors in the culturally diverse classroom need to devise different assignments that will be appropriate for all students. Finally, in a classroom representing a wide variety of cultures, misunderstandings are bound to eventuate. Misinterpretation of gestures, intonation, silence, social situations, body language and so on, will occur (Jenkins and Bainer, 1990).

## 2. Literature review:

According to Loomis and Sharpe (1990, p.1),

“Diversity is a celebration of differences and an appreciation of the bonds that unite people. Experiencing diversity is a common component of a quality educational experience; to achieve excellence it is also imperative to achieve diversity”.

Banks (1989) contends that educational institutes should be used to address societal inequalities grounded in ethnicity, social class and history. Campbell (1999) built on earlier ideas of Dewey (e.g., 1996) in particular to argue for the fundamental importance of multicultural education and its emphasis on particular ideas and skills (acceptance, tolerance, critical thinking, and cooperation) for what is necessary for citizenship in a healthy democracy. Nabhan, (1997) claims that there is comparable evidence that solidifies the definition of diversity; one that includes all life (biological) forms and processes, which is the foundation of what we generally refer to as our biological diversity. According to Nabhan, (1997) there is a relationship between life form on the planet and our appreciation for human diversity:

“[Wherever] empires have spread to suppress other cultures’ language and tenure traditions. The loss of biodiversity has been dramatic” (37).

Nabhan quotes Latin American ethnobiologist Bob Bye, who warns that “[biological] diversity depends on human diversity” (38).

According to Hall (1988), culture is central to understanding struggles over meaning, identity, and power. He is convinced that there is a relationship between culture and politics, as well as power and subjectivity. Additionally, Hall’s work provides a vital theoretical framework for establishing pedagogy as one of the pillars of politics and practice of cultural production. He contends that in order to comprehend pedagogy as a mode of cultural criticism, one needs to question the conditions under which knowledge and identifications are produced, and subject positions are accepted or denied (Hall, 1988). For theorists such as Hall, among others, culture is a strategic pedagogical and political terrain whose force as a ‘crucial site and weapon of power in the modern world’ can, in part, be understood in its contextual specificity (Gilroy, 2000 p. 135). Hall’s attention to the relationship between culture and politics provides a valuable theoretical service to educators by contributing to a notion of public pedagogy that makes the pedagogy a defining principle of cultural politics (Gilroy, 2000).

According to Hooks (1994),

“When we, as educators allow our pedagogy to be radically changed by our recognition of a multicultural world.... We can teach in ways that transform consciousness, creating a climate of free expression that is the essence of a truly liberating liberal arts education”. (p.44)

Campbell, (1999) argues for the use of democratic practices in the classroom. These practices entail setting rules and regulations, empowering students, raising issues and resolving eventual conflicts. Although these rules can be applied to any classroom, they are particularly essential in the international classroom with its multicultural composition of students especially with regard to complex and sensitive issues. These issues generally require substantial cross-cultural understanding and competence to navigate around. While Hooks (1994) declares that there is more anxiety in diverse classroom settings where critical pedagogy is applied, there is also more prospects for community building and freedom to “talk – and talk back” (p. 42). An example of democratising a classroom is, for example, soliciting feedback from students (Timpson and Bendel-Simso, 1996).

Orientation courses can help students develop both knowledge and skills necessary to learn from diversity content and from others who are themselves different (Timpson, 2001). One way to learn about cultural diversity is to experience it on campus. Instructors are a valuable resource by the instructional approach adopted. This approach should be student-centred, interactive and constructivist. In other words, students are guided through inductive methods in order to express meaning. Subsequently, the diversity of the student population should become a rich source, one that serves to enhance the entire campus community.

Developing prosocial skills is another way of helping students in the international classroom and teachers are of indispensable value in this cause. Johnson & Johnson, (1994) describe one of the most powerful paradigms for breaking down interpersonal prejudices and promoting appreciation of differences. They discuss some of the prosocial skills: communication – listening to empathy and consensus - and group dynamics, that students need to work successfully in groups. These skills have become increasingly important as global collaboration and interdependence proliferate (Timpson, 2001).

Another resourceful scaffolding methodology for stimulating student development about sensitive issues in the international classroom is clarifying values. This is different in every culture. Teachers can assist in this process by helping students to clarify what they believe, posit the choices available to them, manage peer pressure to conform, identify their own values publicly and eventually act on them confidently and consistently (Simon et al. 1972 ; Wolfgang 1999). Being able to clarify value can assist students in making sense of what happens both inside and outside the international classroom. For example, if students hear someone making a cruel ethnic joke, they can weigh their options and understand the opportunity they have to associate their core values with a public denunciation of such insensitivity (Simon et al. 1972 ; Wolfgang 1999).

Teachers' emotional competence is discussed by Gardener (1983, 1999) and Goleman (1994). They both make compelling cases for including more attention to the emotional component of learning, especially in the event of fear and resistance toward cultural diversity and about others who think differently. Although students have acquired the same knowledge and ability in order to enter university, they will need assistance from teachers to navigate through the demands of learning. Diversity in itself presents unique and emotive challenges that require highly responsive sophistication to administer. Hooks (1994) argues that there is a need to adopt democratic teaching practices attuned with multiculturalism. Likewise, a similar approach is necessary when dealing with the fears and challenges that teachers and students face in the multicultural classroom. In such a democratic setting, Hooks states that it is the goal of transformative pedagogy to give students and faculty a sense of responsibility to contribute to learning (p.39). By facilitating students in cultivating greater emotional responsibility, to listen and adhere to their own beliefs, we are helping them in their general individual growth (Gardner, 1983, 1999) and Goleman (1994).

### **3. Methods:**

#### **3.1. Participants:**

Students from our international programmes were asked to fill out a questionnaire (*see appendix I*) consisting of 17 questions pertaining to the effects of cultural diversity in the international classroom. A choice was made for this group because it is assumed that this group would be best able to provide the required information. The questionnaire was filled out by 89 students (*see details in appendix I*) from the Netherlands (55), Germany (16), Latvia (3), Bulgaria (3), Curacao (2) and Spain, Finland, China, Brazil, Slovenia, Switzerland, Rwanda, and Belgium all had 1 student each.

In addition, structured interviews were conducted only among international students (*see Appendix V*), by a Chinese student. I wanted to have these interviews done only among foreign students as I was merely interested in hearing from these students. This also provided vital information regarding behaviour – student to student. In some cultures, peer responses appeared to be more spontaneous and honest.

Interviews were also conducted among lecturers from in the international classroom. By using a list of 11 questions (*see appendix II*) we were able to conduct semi-structured interviews which provided us with some useful insights into our study. Additionally, some class observations were carried out during the second semester of the 2014 academic year. The reason for choosing this group was because they seemed best able to supply the information required.

After data collection, I decided to code the data using the Grounded Theory approach. This approach contained a set of research procedures which led to the emergence of theoretical categories. These categories were correlated as a theoretical explanation of the actions that determined the main concern of the participants in this area (Glaser and Strauss, 2009). I focused on three types of coding systems, namely: Open coding, Axial coding and Selective coding, whereby the axial and selective codes were based on the open codes (Charmaz, 2014). Thus the qualitative analysis which drew on information from the raw data collected as part of this investigation, provided

explanations, understanding and interpretation of the phenomena, people and situations studied. Ultimately, I aspired to examine the evocative and symbolic content of the information embedded. In other words, what I wanted to do was to identify and comprehend the underlying concepts, situations and beliefs (Bogdan, 2003).

Two sets of research questions were established: one directed to students and one to faculty members.

### **3.2 Research Questions (students):**

1. How do students experience cultural diversity in the international classroom?
2. What role does cultural diversity play in the international classroom and how does it ultimately influence students' performance?
3. How prepared are students for the culturally diverse classroom and what strategies do they apply when addressing cultural diverse issues within the international classroom?
4. How could cross-cultural awareness be improved in the international classroom among students and teachers?

### **3.3 Research questions (faculty):**

1. What general teaching method is most desirable when addressing students in the international classroom?
2. What role does cultural diversity play in the international classroom and how does it ultimately influence students' performance?
3. What strategies do educators apply when addressing cultural diversity within the international classroom?

## **4. Results**

Nearly all the respondents felt that the atmosphere in the classroom was positive, relaxed and very conducive to learning. Core reasons given were new insights into new and different cultures, exchange of knowledge of other cultures, learning new perspectives and improvement of English language skills.

“We have to speak English always in class, and so I think my English improves all the time and that is good....” (exchange student from Latvia)

A few students found the international classroom somewhat challenging in that especially when working on projects, there were, at times, challenges with regard to cooperation. Some students were more interested in their work than others:

“When I'm in a project group with other students, especially German students, I find I am forced to work harder than I normally work and that is sometimes annoying. I am satisfied with a 5.5 for a project, as long as I pass it. But not with German students. They force you to work hard because they want to get a 9 or a 10 and they work day and night for this.....” (Dutch student)

Cultural diversity plays a significant role in the international classroom and most students consciously elect to venture on an international programme based on the implicit connotation to a diversity in culture. They enjoyed the atmosphere and the

mixture of nationalities on campus. Sometimes some students spoke their first language when they were speaking with other students from the same culture. This was sometimes seen as a negative experience. However, generally speaking, most international students are good at speaking English, so the language used in all projects is English. Some students got annoyed when Dutch students – who were sometimes in the majority in certain classes, spoke Dutch all the time:

“I hate it when some Dutch students are always speaking Dutch in class all the time, even in the project group meetings and they know that not everybody in the meeting is Dutch, they will still speak in Dutch.” (Bulgarian student)

This was sometimes the case with German students as well. However, this was usually easily corrected if students simply communicate this to the students involved. There were also issues with faculty members: some Dutch faculty faced serious linguistic challenges and students have problems getting the intended message. Some teachers also had a very “Dutch” accent, which also posed the problem of miscommunication.

Students were generally well prepared to study in an international environment due to previous international experience: extensive travelling, lived abroad, have family and friends abroad. Seeing that most of projects were done in culturally diverse groups, students had to make compromises by being tolerant and respectful of others’ culture(s). Therefore, a constant assessment of strategies applied were taken into consideration. In order to improve the level of cross-cultural diversity in the international classroom, students believed that there should be an increase in the number of international students and the use of the English language should be stimulated among faculty as well as students at all times.

There should be a more open policy towards promoting an international culture on all campuses, according to some respondents. This should be done by placing the national flags of the countries where the students originate. Moreover, annual events promoting cultural diversity should be held several times a year. These events should allow students to show-case their country of origin and draw attention to the importance of mutual respect and recognition to each other’s differences. The students themselves were interested in playing an active role in all this. Faculties should also be encouraged to attend and participate in these events. By showing interest and being involved in what students do, faculty members will have a better understanding of the issues among their student body. Students on the other hand could also learn more about the background of faculty members.

Faculty members gave no specific teaching method for use in the international classroom. One stated that in the modular courses that are given, students were obliged to study culturally sensitive texts and travel literature that discussed a wide variety of cross-cultural issues. Students are given three travel stories to study each week and they are asked to provide comments on them. Moreover, they must provide at least three questions from the travel stories. Subsequently these questions are discussed in class. Other students are obliged to react to these questions.

Almost all faculty members agreed that there is no such thing as a general teaching method as this is highly dependent on the content of the course and the year in which the course is offered.

“We don’t work with a particular method for a number of reasons: the main one being, books are outdated very fast. Moreover, with the advent of the Internet, there is no need to use expensive books as most of the information is available online, or from some other digital platform”. (Faculty member)

“We work with readers, which are updated every academic year. In this way, students are provided with recent knowledge and the costs for students are minimized”. (Faculty member)

As to what is desirable, the comments varied. Indeed, there is a need to comply to the needs and wishes of the development of the market. More and more students are electing to do an international study and therefore the need for a multicultural methodology is urgent. However, with the advent of MOOCs and other online courses, faculty members are turning to an electronic learning environment (e-learning).

Another faculty member stated that the teaching method is generally agreed on by the department and that the issues dealt with are closely related to the projects being worked on by the students. Contents related to the industry are dealt with and there is no specific regard to cultural implications. Therefore, she had no influence on choices with regard to the international classroom.

According to the majority of the interviewees, cultural diversity played a very important role in the international classroom. Although sometimes there are not many students from abroad in some classes, the approach is the same. Everyone is obliged to speak English during class. It is also important to respect each other’s culture and an effort is made to treat everyone in the same fashion. The atmosphere is generally good and students on average seem to enjoy being in class. This is reflected in the study results as well: students tend to be friendly and extra helpful to those who meet challenges in their work, especially those who have trouble understanding the assignments. This could be in the form of extra explanation or sometimes even with the English language. There are some students who have difficulties submitting assignments on time. In such a case, there is psychological pressure from the rest of the group to speed up the process or to encourage the student who is lagging behind.

Another matter of concern is regarding oral performances: some students are very nervous to give presentations or hold debates. Although students can take extra classes for this, there are other students who take it on themselves to help others. Here, again, collaboration is of the essence. Students tend to help each other.

Dealing with feedback can have implication for the international classroom in that this could affect a student’s generic performance. It is, therefore, very important how this issue is addressed.

The responses provided were varied: one faculty member said that this depended on the nationality of the student(s). There are some students who would not dare asking

questions, for example, Chinese students are very shy and are sometimes afraid to approach the teacher, especially during class. A Chinese student would generally not raise his or her hand and ask a question. He or she would likely to save the question to the end of the class and then when everyone is gone from the room, the student would pose the question. This could be a cultural issue: Chinese generally tend to behave differently toward teachers than, for example, a Dutch or German student.

Another faculty member stated that the level of English varies considerably in some of his classes. In this case, he has a totally different working method. He would sometimes even split the group: the students who are better are given extra work, while the students who need more attention are given this.

Certain students tend to ask more questions than others. Here again, this depended on the cultural background of the student(s).

“We are now working more with video-clips and web-lectures. This is a good way to integrate more culturally diverse learning methods and topics. This also helps us to work at a variety of levels even in one classroom.” (Faculty member)<sup>2</sup>

One faculty member often works with case studies which, according to him, simulates a multi-cultural working environment. “Students tend to really appreciate this method of learning as it provides an opportunity to disclose cultural issues.” (Faculty member)

Another mentioned that the strategy applied depended largely on the goal of the lesson. When practicing oral skills, such as presentations, debates, interviews, meetings and so on, a different strategy is used than when practising written skills like, reporting, letter-writing, essay writing etcetera.

In general, the strategy applied depends on the skills that students are learning.

## 5. General discussion

For this research three key principles regarding cultural diversity in the international classroom will be addressed. These principles are mainly based on adult learning strategies (Knowles, 1989) and (Knox, 1986) and principles of reflection in action (Brubacher, Case, and Reagan, 1994).

The first of such principles is: *Getting Students Prepared for and Involved in Their Learning*. Not only should students be prepared for general issues impacting their respective communities, they should also be aware of the international community to which they will ultimately contribute. That is why, getting students involved in their individual learning is crucial for effective learning experiences (Schatz, 1997; 1987). It is therefore vital that students, irrespective of their backgrounds, collaborate not only inside the classroom, but outside as well. This can be done by accepting that everyone learns differently, by exhibiting mutual understanding and appreciation for each

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<sup>2</sup> For excerpts of the interviews, please see interviews in appendix IV.

other's individual learning processes and expectations, and, as it were, putting on *Cultural lenses* - the windows through which we look. These cultural lenses exist for the learners, the university and the community at large. Additionally, it is important that students are assisted in developing creative yet critical thinking skills by combining research-based practises with fundamental concepts, thus honing the experience for themselves. Furthermore, utilizing innovative tools that help students demonstrate their skills: tools that go beyond the traditional methods, enables them to stay abreast with the latest technological innovations in the current learning environment. Blended learning - MOOCs, video-clips, weblectures and other e-learning media - enriches students' experience and communication skills by exposing them to a vast array of teaching methodologies, didactical approaches and cross-cultural issues.

Another technique that is applied is story-telling. Teaching should also be a process of sharing knowledge and experiences. Connecting life experiences to the content of the course is another way of providing students with the practicality of the theories of the course being taught. Most students value the stories shared by teachers. This sharing of knowledge could serve as an inspiration for students to share their own individual stories with the group. This knowledge sharing process stimulates students to provide information about their individual culture. Students tend to enjoy this aspect of teaching and learning, as it not only helps them to remember the issue at hand, but also provides them with a more vibrant representation of the subject matter.

Finally, a teacher's ability to apply openness and empathy within the classroom can be an effective tool when addressing cultural diversity. From a teacher's perspective, a culturally diverse classroom provides the unique opportunity to learn about other cultures and at the same time share one's own culture with others. Students should be encouraged to share their ideas and backgrounds by discussing interrelated issues. Before embarking on this exercise, it is important that the teacher prepares the class for this discussion by first divulging information about his or her own cultural background.

The second principle is regarding *Culture and Learning*: The way a student learns is highly dependent on the student's cultural background. Learning generally reinforces cultural identity and cultural development. That is why when teaching in the international classroom, it is essential to first be aware of how students were taught in their former place of education. Besides a dominant model that exists, every university has its own cultural environment for learning: a cultural map, so to speak. It is therefore of utmost importance that faculty members, despite their subject area, gain experience in multicultural environments in order to bring effective diversity discussions into the classroom. There are some faculties who claim that their subject area does not allow for matters relating to cultural diversity. Conversely, faculty and researchers in every discipline must be willing to further examine their specific subject areas in search of cultural diversity issues (Schatz, 1997; 1987).

The third principle: *Dialogue*, should be practiced on a regular basis when in the international classroom. Dialogue, in this context, is referred to as an experience of shared exploration toward greater understanding, connection, or possibility (Co-Intelligence Institute, 2001). Dialogue by means of group discussion offers ample opportunities for transformative experiences and valuable networking, both

professionally and personally, especially when applied in the international classroom. In fact, in a true dialogue, the aim is to move toward a greater understanding and a sharing of meaning. According to Bohm and Nichol (1996) and Krishnamurti and Bohm (1986), a process that leads to development of true understanding of meaning leads to transformation. When examining cross-cultural issues within the international classroom, it is advised to select issues that are relevant and conducive of lively classroom discussions, issues that are inviting and comprehensive, thus stimulating students' full participation. These issues might be sensitive and/or polemic as these allow for students to provide and examine their individual perspectives. Additionally, students should be encouraged to bring similar texts and articles by authors from diverse cultural backgrounds. In so doing, students are stimulated to play an active role in their own learning process, learning from each other in the meantime.

The introduction of topical, cultural issues from news stories is also a method which could be applied to stimulate cultural diversity in the international classroom. This could be an excellent opportunity for engaging students in a topic that might otherwise be considered too delicate to introduce. For example, by introducing a case study, a delineation of someone who is pressured in the office, due to socio-cultural motivations – one could communicate a subtle topic and postulate a valuable, tangible viewpoint.

The aim of this study was to gain insight into the effects of cultural diversity in the international classroom. Due to the fact that this investigation was carried out in the English language, there might be inconsistencies with regard to the responses from students whose command of the English language is limited. A similar study could be conducted using respondents' first language. Additionally, a majority of the teachers interviewed were English teachers. By interviewing teachers of other subjects, a broader perspective could be gained. Finally, although this research has managed to provide an insight into how cultural diversity is dealt with in higher educational institutes in the Netherlands, further studies need to be conducted into its effects in other European countries. This is why, it would be interesting to do further research into cultural diversity in higher education in other European countries.

## **6. Conclusion**

According to most of the respondents, the atmosphere in the classroom was positive, relaxing and very beneficial to learning. Primary reasons given were fresh understandings of novel cultures, an interchange of awareness of other cultures, knowledge of new perceptions and an improvement in English language skills. A few students find the international classroom rather challenging in that, when working on projects, there are various issues relating to collaboration. Some students show more interest in their work than others. Other have difficulties with the (high) level of the English language.

Cultural diversity has a vital function in the international classroom and most students intentionally elect to undertake an international programme based on the integral association with cultural diversity. They enjoy the vibrant dimension and the mixture of cultures on campus. Students are generally well prepared to study in an international environment due to previous international experience: extensive travelling, and having friends and family overseas. Seeing that most of their projects

are done in culturally diverse groups, students have to make compromises by being tolerant and respectful of each others' culture(s). There should be a more open policy towards promoting an international culture on all campuses, according to some respondents. One way of implementing this is by placing the national flags of the countries where the students originate, in the main auditorium of each campus. Providing a platform where students can show-case their country of origin – organising intercultural events, for example, would be a way of demonstrating this.

With regard to faculty members, there are no specific teaching methods used to address students in the international classroom. One faculty member stated that in the modular courses that are given, students are obliged to study culturally sensitive texts and travel literature that discuss a wide variety of cross-cultural issues. Another faculty member stated that the department decides upon the teaching method and that the issues dealt with are closely related to the projects being worked on. Almost all faculty members agreed that there is no such thing as a generic teaching method as this is largely dependent on the content of the course and the year in which the course is offered. As to what strategies educators apply when addressing cultural diversity within the international classroom there was a variety in the responses. This depended largely on the nationality of the students and the configuration of the class. This also affects the broad level of communication. One faculty member often works with case studies which imitates a multi-cultural workplace. Students seem to really appreciate this learning approach.

## **7. Recommendations:**

There are some general recommendations that could serve to increase the efficiency and satisfaction with regard to cultural diversity in the international classroom. First of all, it is not necessary to spend time on improving the atmosphere in the class; seeing that most students who participated in the questionnaire thought that the atmosphere was very positive and conducive of learning. Instead, focus should be placed on the formation of culturally diverse project groups. Many students argued that it was difficult to reach consensus on deadlines, working attitudes and learning approaches applied by students from certain cultural backgrounds. That is why attention should be paid to group formation. Secondly, due to the fact that most projects are done in culturally diverse groups, students need to make compromises concerning tolerance and respect for each other's culture. There should be a more open policy towards promoting an international atmosphere on campus. One way of implementing this is by placing the national flags of the countries where the students originate, in the main auditorium of each campus. Additionally, by organising more cultural events in which international students can show-case their cultures in their own unique fashion, more cultural awareness is epitomized. Finally, faculty should ensure that the classroom remain lively and inclusive for all cultures, by way of video-clips, web-lectures, story-telling, case studies and the use of interactive materials. They should also make themselves available for students not just inside the classroom, but outside as well. Students need to feel that they are welcomed and appreciated. By making themselves available for students outside the classroom, faculty members could help to create a better learning environment, one that is conducive of learning not only from an academic perspective but also from a cross-cultural one. Therefore, addressing cultural diversity in the international classroom

serves as an excellent opportunity by establishing a rich laboratory in which students are primed for the multicultural arena in which they will play an active role.



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***Best Inclusion Practices for Primary School Pupils with Special Education Needs***

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The European Conference on Education 2014  
Official Conference Proceedings**Abstract**

Over the last 40 years, there has been an increasing need to implement effective, inclusive school models, and these are often based on the principles emerging from the Salamanca Conference (1994) and the UNESCO *Guidelines on Inclusion* (2005). Although the current trend is to include students with special education needs (SEN) in a common school environment, the situation is still extremely heterogeneous: there are countries with inclusive school systems, others with partially inclusive models and others that resort to special schools. Many studies have tried to determine the most effective practices for promoting inclusive education, but their outcomes have been inconclusive. Using questionnaires and focus groups, this research project aims to determine which practices are more effective for promoting the inclusion of pupils with SEN in primary schools and, through a comparison of parents' and teachers' opinions, to work on improving school practices to enhance their efficacy. Data analysis shows that teachers and parents often have different beliefs regarding the most efficient method for promoting school inclusion. In this study, final-stage concordances and disagreements on the effectiveness of the implemented inclusive practices was discussed among groups of teachers and parents. This should lead to the design of methods of inclusion that are more suited to users' needs, as well as strategies of greater involvement/communication with families and local governments.

Keywords: inclusion, integration, Special Education Needs, disability, best practices, primary school

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## Introduction

Accepting and integrating people with disabilities are recent phenomena, as those who were considered to be different and weak were excluded from public life and community until the 16<sup>th</sup> century. In the 1800s, people started to take care of neurasthenics and developmentally disabled individuals. There arose a new kind of attention for people considered to be ‘marked by nature’ from philanthropists, ecclesiastics and scholars, which made the work of Jean Mark Gaspard Itard (1774–1838) and other scholars possible. His educational relationship with ‘the boy from Aveyron’ is the archetype of special education, and allowed education for people with disabilities to develop between the French Revolution and the second decade of the 20<sup>th</sup> century. In the 1800s and 1900s, mutual assistance associations promoted pathways of social awareness, aiming to make people more conscious of issues related to disadvantaged childhoods and disabilities, and mass education in many countries highlighted learning difficulties in all pupils who exhibited some kind of deficit. Again, the establishment of experimental pedagogy, psychoanalysis, sociology, and medical and scientific progress contributed to a wider interest towards minors with disabilities. Thus, the request for a new school institution arose, and schools for pupils with difficulties were created in Poland, Denmark, Spain and Italy (Pavone, 2010). Moreover, the devastating consequences of World War II led to the worldwide acknowledgement of the necessity to safeguard those who lived in disadvantage (UN, 1993).

The first document in which human rights were ratified was *The Universal Declaration of Human Rights* (UN, 1948), which, in regard to education, reported that ‘Everyone has the right to education. Education shall be free, at least in the elementary and fundamental stages. Elementary education shall be compulsory (...). Education shall be directed to the full development of the human personality and to the strengthening of respect for human rights and fundamental freedoms. It shall promote understanding, tolerance and friendship among all nations, racial or religious groups, and shall further the activities of the United Nations for the maintenance of peace’ (art. 26). Harsh criticisms and political-ideological activism against the system in the 1960s triggered examinations of diversity, discrimination and social exclusion. This resulted in the de-institutionalisation of the disable, more comprehensively in Italy, and in a more limited manner in Europe, the United States and Canada (Ianes, 2007). Italy stands as the forerunner in the processes for school inclusion, closing down special schools in 1977 and welcoming pupils with special needs in common instructional settings.

The *Declaration on the Rights of Disabled Persons* (1975) and the *International Covenant of Civil and Political Rights* (1976) make explicit references to the need for each country to take proper actions to guarantee rights to the physically and psychologically disadvantaged. In the *World Programme of Action Concerning Disabled Persons* (UN, 1982), it is mentioned that for everyone to obtain full participation in social and political life, it is necessary for people with disabilities to live within the ‘normal’ contexts of community life. In 1994, delegates from 92 Nations and 25 International organizations took part in the World Conference on Special Education Needs in Salamanca, Spain, and signed a commitment to educate all people, ‘recognizing the necessity and urgency of providing education for children, youth and adults with special education needs within the regular education system’, in

the belief that 'regular schools with this inclusive orientation are the most effective means of combating discriminatory attitudes, creating welcoming communities, building an inclusive society and achieving education for all; moreover they provide an effective education to the majority of children and improve the efficiency and ultimately the cost-effectiveness of the entire education system' (UNESCO, 1994).

A remarkable contribution to a new definition of disability was provided by the *International Classification of Functioning, Disabilities and Health*, which was developed in 2001 by the World Health Organization (WHO) and acknowledged by the United Nations as one of the international classifications that effectively describes the health condition of an individual. According to this definition, disability is not ascribed to medical or psychiatric factors only, but is seen under a bio-psycho-social perspective, which means that a disability is nothing but the interaction of the individual's characteristics with the environment: a person becomes 'disabled' when their setting is not properly equipped.

Many studies (Pijl & Pijl, 1998; Winzer & Mazurek, 2000; Canevaro, D'Alonzo, Ianes & Caldin, 2011) show that if appropriate conditions for learning are created, students with disabilities learn more in mainstream schools than in special ones. Furthermore, it has to be remembered that the differentiation of educational settings implies rising of social and financial costs, starting from the constant growth in certifications of pupils with SEN. Finally, some surveys show that adjusting the curricula and organization of mainstream schools, with the aim of including students with SEN, produces overall advantages in the educational system (Fiorin, 2007; D'Alessio, 2011)

### **Integration and inclusion**

Today, the terms *integration* and *inclusion* are often used as synonyms, although there are scholars who investigated the differences between the two. The word integration implies that there has to be a certain degree of adaptation of children with disabilities or special needs to a system/setting that is not designed for them; moreover, an assimilation perspective impregnates integration, implying that a child with special needs has to become like 'the others' (Canevaro, 2009; Dovigo, 2007).

The term inclusion mirrors the belief that everyone is a member of the community and adds value to it, and politics and society should adjust to the diversity of individuals. The traditional school system should be altered to favour the centrality of the student, with references to a complex model of disability in which learning is associated with problematic situations which develop the protagonists, the creation of social and personal representations, and the reduction of stereotypes. This is why the concept of inclusion has a primarily social connotation (Pavone, 2010; Caldin, 2013). According to D'Alessio (2005), integration is strictly related to the learning environment and to the students with disabilities individually; interventions are then made on behalf of the students, and then on their context; a psychological and compensatory model of disability and a medical response prevail. Conversely, inclusion focuses on the global consideration of educational, social and political settings. It considers all the students and intervenes first in regard to the context, and then on behalf of the individuals. Finally, the medical responses to disability are turned into ordinary ones, making reference to the social model of disability and to the feeling of empowerment, which

puts people with disabilities and their families at the centre of the decisional making process.

In the UNESCO *Guidelines for Inclusion* (2005), four key elements feature strongly in the definition of inclusion:

*Inclusion is a process, a never-ending search to find new ways of responding to diversity; it is about learning how to live with and how to learn from differences. Inclusion is concerned with the identification and the removal of barriers. Inclusion is about the presence, participation and achievements of all students. Inclusion involves a particular emphasis on groups of learners at risk of marginalization, exclusion or underachievement, which implies a responsibility to ensure that these groups are carefully monitored and, where necessary, measures are taken to ensure their presence, participation and achievement in the education system.*

### **Current situation**

The *World Report on Disability* (2011), produced by the WHO and the World Bank, provides us with a global perspective of disabilities. Around 1 billion out of 7 billion people live with disabilities, and children with disabilities have fewer opportunities to access education than their peers without disabilities. The percentage of children with disabilities who have access to education ranges from 10% in India to 60% in Indonesia. One of the most evident consequences of the lack of education is the endurance of poverty in adulthood. The inclusion of children with disabilities in common educational settings is seen as highly desirable to ensure equal opportunities and to guarantee human rights. Moreover, economically speaking, it represents the choice with the lowest costs.

A reconnaissance of the different school realities highlights the three ways with which Europe attempts to honour the right of education for students with disabilities:

- the one-directional approach, belonging to those countries where students with disabilities have access to ordinary schools (e.g., Italy, Norway and Sweden);
- the multi-directional approach, adopted in countries like France, where medical-educative institutions, special schools and special classes in ordinary schools coexist;
- the bidirectional approach, which considers two different educational systems: one for pupils and students with disabilities, and another attended by neurotypicals (Lascioli, 2012).

Statistics by the Ministero dell'Istruzione, Università e Ricerca (MIUR) show that in Italy, in 2012, there were 103,000 students with disabilities in State schools, plus 10,000 in scuole paritarie (private schools recognised by the State), 300,000 students with learning difficulties, 80,000 with attention deficit hyperactivity disorder (ADHD), and 200,000 borderline students, which collectively accounts for 8% of the total school population. Schools are required to provide appropriate educational plans for pupils who experience difficult family or economic situations, or belong to different ethnic groups, to enhance their potential and help them overcome learning difficulties.

After school autonomy was ratified in Italy with decree of the President of the

Republic (DPR) 275/99, schools became more capable of interpreting the educational requests of their students, and they managed to respond to the requests in a flexible manner. Moreover, schools had the opportunity to confront other subjects involved in the formative process at the local level. The directive on BES (Bisogni Educativi Speciali, SEN in English) of 2012 acknowledges the value of personalized teaching within the class, in connection with the social and civic community, through the guarantee of cultural, professional and economic resources (Moliterni, 2013).

### **Main criticalities in the current inclusive school system in Italy**

Criticisms of integrative systems, with a specific reference to Italy, were made by Meijer and Abbring (1994), Mittler (2000) and Ainscow (2000), who observed that in common educational settings, there was no attempt to reorganize contexts nor to focus on learning goals and teaching skills useful to all students, as would be expected in an inclusive system. Similar remarks, but referring to international settings, are present in the UNESCO *Guidelines*, which state that changes in special education have not been accompanied by parallel changes in school organization, curricula and learning/teaching strategies, which is one of the biggest barriers to the success of inclusive school policies. There is a need for widespread school reforms, as well as for the development of pedagogy, so that a synergy between these factors leads to a positive response to individual diversities, such that they do not remain as problems, but as opportunities for learning/teaching processes (UNESCO, 2005).

Annual reports by the Italian Premiership highlight the following criticisms:

- The endurance of middle-low educational goals for students with disabilities;
- Lasting difficulties of integration for the bearers of complex disabilities;
- The lack of process, outcomes and structural standards for the quality of inclusion;
- The need for a better definition of the competences of educational, social and health professionals (Pavone, 2014)

Some scholars strongly maintain that schools were left alone to face the demand for more commitment towards educational urgencies (personal and social disadvantages, deviances, drug addiction, etc.) without providing them with the means and tools to improve educational and training quality. The increasing inequality in social expenditure allocations has contributed to this problem, and requests for more expenditures for educational processes have not been granted (Moliterni, 2013; Iosa, 2013).

It is known that school systems that achieve better results are those that are allocated a higher percentage of the gross national product, and in Italy there has not been adequate investments in training and organizational conditions to build an effective educational action. The same policy, which has paid little attention to student welfare, has also not addressed the removal of cultural barriers amid the increasing prevalence of ethnic and cultural racism (Iosa, 2013).

Despite the indication of the implementation of personalized study plans, there has been an increase in the number of pupils per class and a decrease in teachers' co-working hours in the last years. This compromised the possibility of implementing diversification of educational strategies such as open classes, group work, peer

tutoring, cooperative learning, meta-cognitive processes development and others, which, combined with weekly planning teachers' hours, stood out as primary school proficiency indicators, according to TIMSS and PIRLS data (Moliterni, 2009).

Again: in Italy there is no official protocol on quality indicators for school inclusion; this lack of supervision prevents from highlighting situations of excellence as well as from recording dysfunctional realities. The development of research to collect reliable data and best practices on the complexity of the educational processes is therefore needed, for the stimulation of improving virtuous pathways (Caldin, 2013).

### **The study**

The present study consists of a survey of teachers and parents of pupils with SEN in primary schools in the region of Sardinia (Italy), and it has three main aims:

1. providing a definition of *best practices* in school settings;
2. providing evidence of practices promoting the inclusion of children with SEN in primary schools;
3. recording teachers' and parents' opinions about the inclusion practices they have experienced to highlight the strengths and weaknesses of the current system and to generate hypotheses for improvement.

Research tools included focus groups and questionnaires. This means that the study has qualitative features regarding the analysis and interpretation of the focus groups, and quantitative features in its statistical analysis of the questionnaires.

Because this study arose from the need to collecting more information on the practices of inclusion of pupils with SEN, and because the researcher investigated facts as they happened, the study can be classified as descriptive research (Baldacci & Frabboni, 2001). Its final goal is to provide workers in the educational sector with useful information to improve their practices, as educational research is meant to do (Mortari, 2011).

### **Methodology**

After the recognition of specific literature, to focus on issues related to the topic, five schools were chosen to participate in the survey. These provided a rather varied population, as there were two schools in Sassari, the main city of North Sardinia, one attended mainly by children from families originating from Sardinia, and the other with a high proportion of children from immigrant families (Chinese, Pakistani, Moroccan and others), and three schools from villages of about 14,000, 7,000 and 3,000 inhabitants in the district of Sassari. These school are labelled, not in the above mentioned order, school A, B, C, D and E.

Three focus groups were conducted with teachers from schools A, B and D, to build a questionnaire to administer to both teachers and parents of pupils with SEN from the five schools. Focus groups focused firstly on what teachers mean by 'best practice' at school, which was necessary because there was no such definition in the literature. Focus groups examined what inclusion means for teachers, on the strategies/activities that, in the teachers' experience, promote school inclusion, and on the factors that prevent inclusion. As previously stated, focus group results were used to design a

questionnaire. The questionnaire was administered to a sample of 17 teachers from another primary school to test its clarity and, if needed, to adjust its wording.

The final questionnaire consisted of a preliminary part comprising anonymous statistical data (e.g., teacher's age, years of work experience, pupil's age, school year attended by the pupils, etc.). It then presented four questions containing items with which the teachers and parents had to agree, according to a Likert scale (not at all, a little, enough, a lot and similar). Of the four questions, the first two were about parents' and teachers' opinions and experiences to be confronted. The latter two were only for teachers and were intended to check the coherence between teachers' beliefs and school practices. In Italy, the school year starts in the middle of September, thus, the questionnaires, which were distributed in November and December of 2013, were not administered to parents of pupils from year 1 because the researcher thought they did not have enough experience about inclusion practices.

After the questionnaires were analysed, another four focus groups were conducted with teachers and parents from schools A and C to discuss the main divergences between their opinions to find out the reasons for the disagreement and promote hypotheses for improvement. At the moment of the European Conference on Education by Iafor (July 2014), the focus group analysis was not yet completed; therefore, partial results are presented.

The study plans to inform teachers and parents involved in the survey regarding the outcomes; this is planned to take place in October 2014.

## Results

In regard to the first research aim, which is the provision of a definition of *best practices* in education, it emerged that what takes place in school settings has to be: *successful*, which means that it has to produce positive effects on children, and/or on their families, and/or on teachers. This success has to be perceived to some extent, even if only by teachers' observations, and may affect curricular outcomes, social abilities, and the pupils' wellness in general; *sharable* between school professionals, *adaptable* to different situations, and *transferable* to different contexts. Finally, to promote teaching improvement, they should be *part of a research process*, and, therefore, *recorded* to show progress and provide the opportunity to analyse its strengths and weaknesses.

## Questionnaires and focus group

The questionnaire completion rate among teachers was 63.9%, of which 70.6% were curricular teachers and 23.4% were support teachers; 57% of parents' questionnaires were returned

School	A	B	C	D	E	Total
Curricular teachers	43	21	24	47	52	<b>187</b>
Support teachers	13	2	10	10	14	<b>49</b>
Total	56	23	34	57	66	<b>236</b>

Returned questionnaires	34	18	20	46	33	<b>151</b>
%	60.7%	78.2%	58.8%	80,7%	50%	<b>63.9%</b>

School	A	B	C	D	E	<b>Total</b>
Parents of pupils with SEN	24	6	22	33	36	<b>121</b>
Returned questionnaires	12	4	14	21	18	<b>69</b>
%	50%	66.6%	63.6%	63.6%	50%	<b>57%</b>

The main results are shown below, question by question; detailed questions and results are reported in the tables at the end of the paper.

Question 1: ‘How useful do you think these items are for the inclusion of pupils with SEN?’

For teachers, the most frequent responses were: *experience sharing with other teachers* (option ‘a lot’ chosen by 79.33%), *teachers’ professional recurrent training* (75.33%), and *teachers’ personal experiences* (78%). The items that had the lowest level of appreciation for their usefulness were *implementation of ministerial recommendations* (‘a little’ useful for 13.33% of teachers, plus 0.66% who chose ‘not at all’ useful) and *implementation of values from the POF* (Piano dell’Offerta Formativa, the document that displays each school’s formative offer) (‘a little’ useful, chosen by 5.33%).

In answering the same question, 69.56% of parents thought that *teachers’ professional recurrent training* is a very useful item for the inclusion of pupils with SEN; *family participation in work plan design and implementation for pupils* was in second place (68.11%), followed by *experience sharing with other experts* (62.31%) and *teachers’ personal experiences* (57.97%). In regard to negative opinions, no item was clearly predominant.

The first recorded divergence came from the item *family participation in work plan design and implementation for pupils*, which was in second place in regard to its usefulness to parents, but was only in sixth place on teachers’ questionnaires. This seems to be due to the fact that many teachers consider family indications useful to build the study plan, but methodology and time for educational goals is held to be a competence of teachers only.

‘[family participation] can be useful if you have to work on autonomy, to do together at school and at home as well, [...] but if you have to work on methodology, it is the teachers’ duty, not the family’s’ FG4\_4

‘I don’t think it is appropriate [for the family] to intervene in the teaching’ FG4\_5

Parents seem to be confident in the teachers’ skills:

‘I’ve given them all my trust; I’ve seen my son’s improvement. Sometimes he has

difficulties at home, but at school, the teachers know how to help him.’ FG5\_4  
 ‘We do trust teachers enough. When I was called to sign the PEI, it was thoroughly read to me.’ FG5\_2

Another controversial aspect to be discussed was the item *experience sharing between teachers and other professionals*, which was in third place, in terms of importance, to parents, but did not seem to be very important for teachers. When questioned about this, some teachers listed experiences occurred with therapists, whom they believe undermine their own professionalism, while others acknowledge the parents’ need to be encouraged by many sides, and the therapists work can be helpful in this way. Teachers strongly asserted that school and therapists have different aims; the former works on socialization and abilities, and the latter works on medical rehabilitation.

‘School has different goals [from the therapists’ ones], different methodologies, different times; we cannot implement therapy here, it is not the right place, but when parents say there is no collaboration, they mean we should engage in therapy.’ FG4\_1

‘They start assuming that first there is the centre that follows the child, and school comes after. Sometimes teachers are not informed on the day the child will be absent because they have therapy to do. We can adjust to it if they want to collaborate.’ FG4\_9

‘We are always available to collaborate, we attended all the meetings, explained what we do at school, show notebooks [...] but we NEVER received feedback on what they do.’ FG4\_1

On their side, parents maintained that there is little chance for school and other specialized structures to communicate, and many times rehabilitation is not sufficient.

‘They did not manage to get in touch with each other... I mean, the doctor called and couldn’t be put through to the teacher and vice versa’ FG5\_3

‘I had to hand the letter [the certificate] over to the teacher and that was all. I don’t know if the specialists talked to the teacher or not, but I don’t think so.’ FG5\_4

‘As for speech therapy, they give an amount of hours that is only enough to start the process, after that nothing else.’ FG5\_2

‘My son is on the list; he did speech therapy two years ago and we’re still awaiting to re-start the treatment.’ FG5\_3

‘We’d need continuous interventions.’ FG5\_2

Question 2: ‘How much do you think these items affect school integration?’

85.33% of teachers believed that *communicating difficulties and needs with the teachers* affects school integration ‘a lot’; which was followed by: *receiving gratification for the work done* (80.66%) and *having the opportunity to respect their own attention time* (78%). Conversely, what was considered to have the least affect on school integration was: *making use of rooms with specific equipment*, which was

considered to ‘little’ affect school integration by 6% of teachers, *spending time with schoolmates outside school* (‘a little’, chosen by 4% of teachers), and *knowing whom to address for their own needs* (3.33%).

As for parents, what affects integration of pupils with SEN ‘a lot’ was, in first place, *having the opportunity to respect their own attention time* (66.66%); in second place, *knowing whom to address for their own needs* (62.31%), then *being able to move freely in the school areas and communicating difficulties and needs with the teachers* (both with 56.52%). What least affected school integration was, according to parents, *spending time with schoolmates outside school* (8% ‘not affect at all’ and 23.18% affects ‘a little’), *making use of rooms with specific equipment* (10.14% for ‘not at all’ and 11.59% for ‘a little’), and *having schoolmates and their families attentive to the needs of pupils with SEN* (5.79% replying ‘not affecting at all’ and 7.24% stating that it had ‘a little’ affect).

In questions 3 and 4, which were for teachers only, the rate of questions that were not answered increased to 16% (in questions 1 and 2 the maximum was 4%); these questions were concerned with what teachers actually did in class during the 2012 school year.

Question 3: *How often during the last school year did you [implement specific activities]?* 10% of teachers never *planned activities in collaboration between curricular and support teachers*, 24% did it 1 or 2 times per week (16% of them did not answer); 50% of them *re-elaborated and personalized activities any time it was considered appropriate* and 23.33% did it 1 or 2 times per week; 24% of teachers *changed class organization* 1 or 2 times per week, while 52.66% did it at any time that was appropriate.

Question 4: *How many times, during the last school year, did you [carry out the following practices]?* It emerged that 30% of teachers never *collaborated with other professionals*, and 42% did it 1 or 2 times (throughout the whole school year); 42.66% never *noted in official papers successful practices of inclusion*, and 32% of them never *made reference to ministerial recommendations or values from the POF*. In regard to families, 29.33% of teachers *had moments of comparison or collaboration with the families to plan interventions at school or at home* more than 5 times, and 28.66% had them 3 or 4 times (10% did not answer); 38.66% *made use of inclusion practices learnt from others or taken from their previous experience, in different contexts or situations*, 5 or more times, and 19.33% did it 3 or 4 times (12% did not answer).

It emerged that ministerial recommendations are difficult to put into practice because teachers work alone in a class with too many pupils, of which at least 4 or 5 need special education.

‘We cannot implement these recommendations. I should have more hours in the presence of another teacher. I am alone with 24 pupils. It’s impossible. We do what we can, but this is not what children need.’ FG4\_8

‘5 or 6 children need them [personalized activities].’ FG4\_3

'[in the ministerial guidelines] there are a lot of beautiful words, but they do not find confirmation.' FG4\_9

## **Discussion**

Experience sharing between teachers, professional training and personal experience are deemed very important for the implementation of school inclusion practices. This suggests that recording successful practices, which was not done by 42.6% of teachers, may be of benefit to all the school operators. Again, the literature shows that there is not appropriate teacher training on this issue, although the importance given to it indicates that a bigger allocation of financial resources to this cost element would be welcome. Nevertheless, it has to be considered how teachers, families and other professionals might be of real help to the children, which boundaries do not have to be crossed by them, and how it is possible to enhance each ones' resources, always with the children's good in mind.

The results from the second question show that the relational side is preeminent for children to feel welcomed at school, as well as having personalized work plans (communicating difficulties and needs with the teachers, receiving gratification for the work done, having the opportunity to respect their own attention time, and knowing whom to address for their own needs are what were considered to have the greatest affects on school inclusion, for both teachers and parents). On the negative side, teachers pointed out that crowded classes and the lack of co-working hours hindered inclusions. They also complained of a shortage of basic necessities, and they thought that schools should guarantee the provisions of such necessities to their students.

Most teachers maintained that the Government is far from classroom life when developing guidelines for the useful and effective implementation of educational theories, and that it was not adaptable when facing the complex and heterogeneous realities of schools. As for improvement indications, parents would need more support to help their children outside school, in terms of knowledge and human resources that they can rely on, and teachers are available for collaboration with other professionals if this is done on a peer-to-peer basis.

This study is intended to provide scholars, teachers and anyone interested in the topic with information about what works better and what has to be improved for the inclusion of pupils with SEN in schools. It relates to a small number of primary schools in North Sardinia, yet its outcomes can serve as a cause for reflection and as a comparison with other schools in Italy. The debate is still open and needs more research to obtain more definitive results.

Fig. 1: question 1 details and results

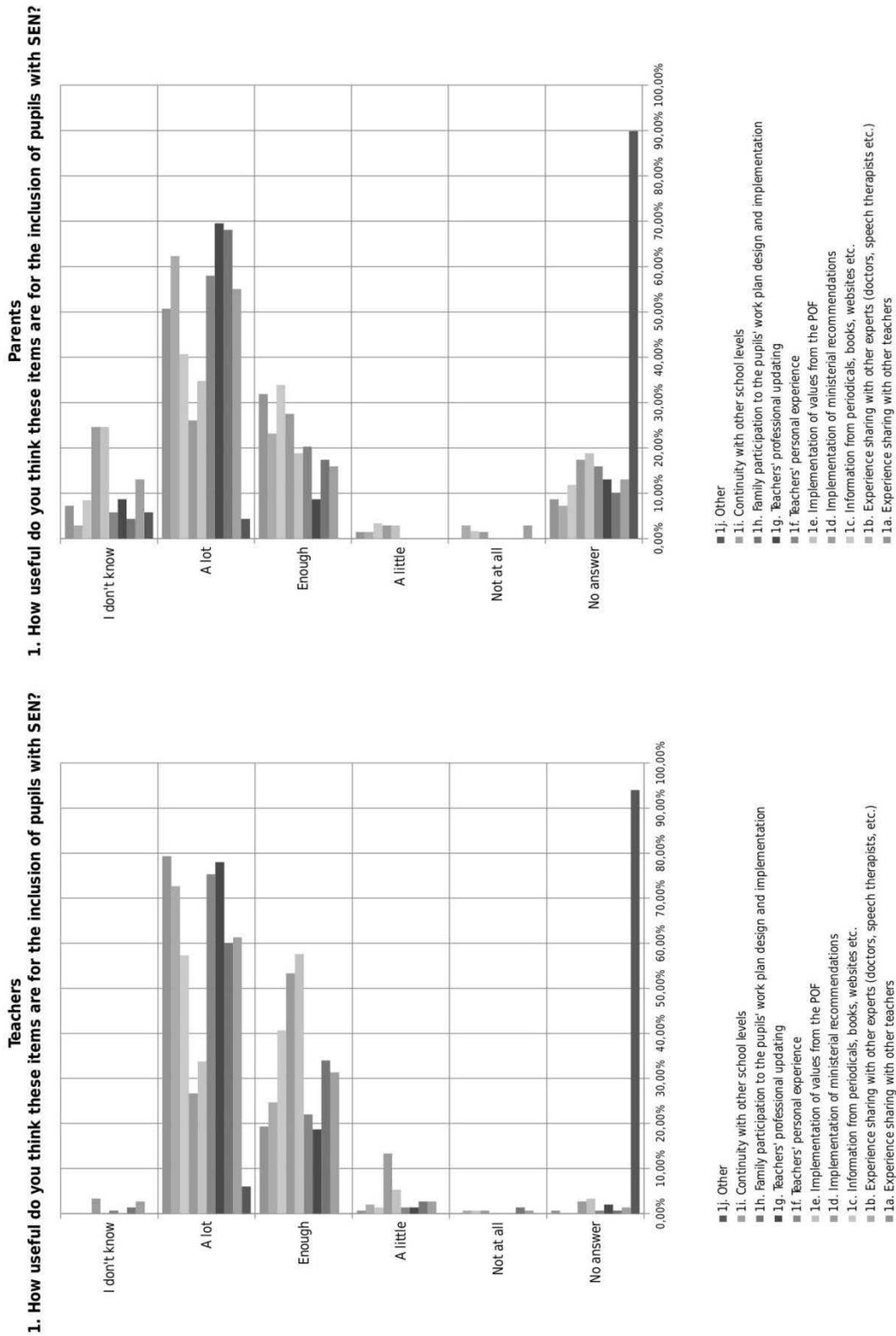


Fig. 2: question 2 details and results

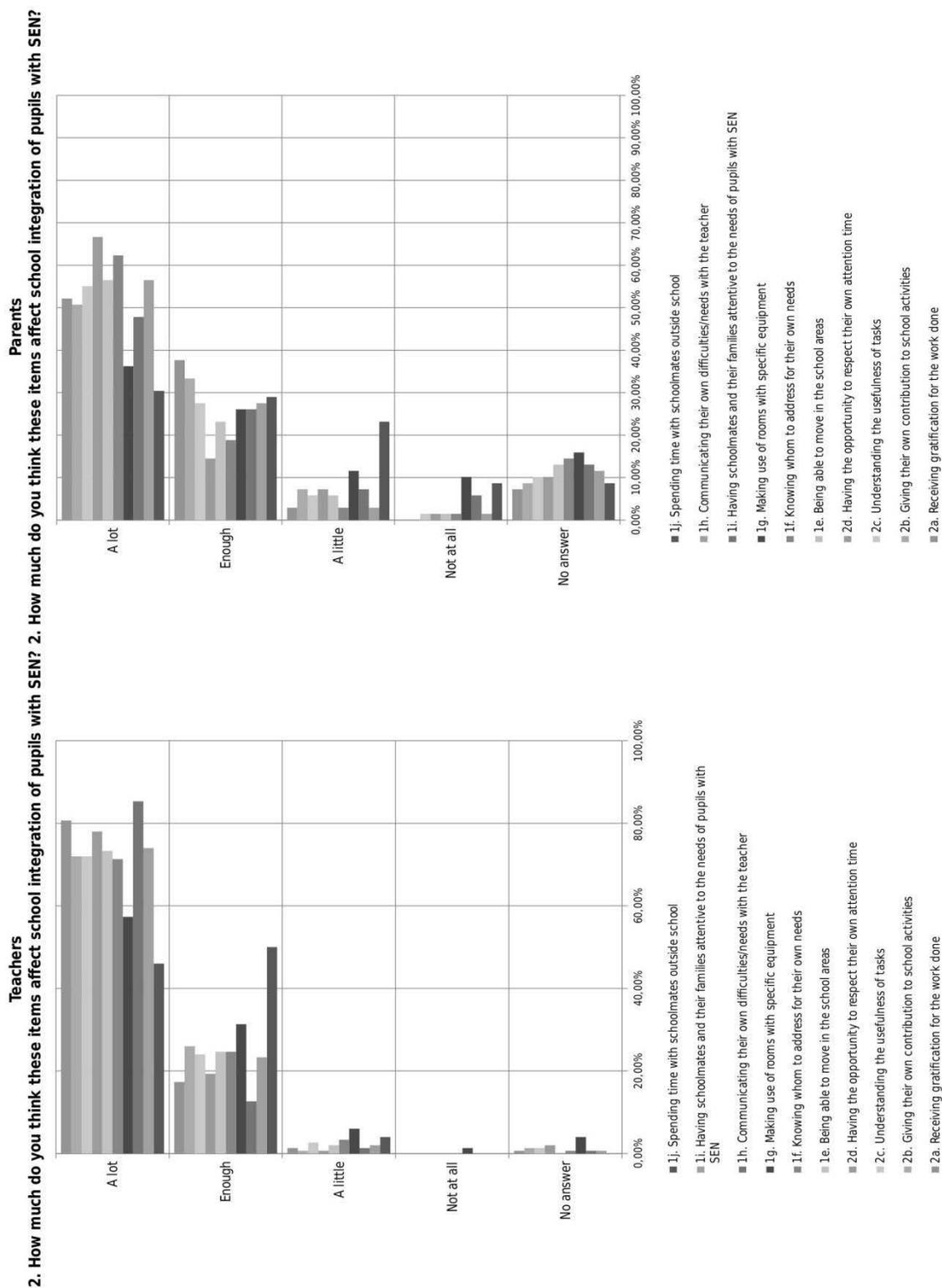
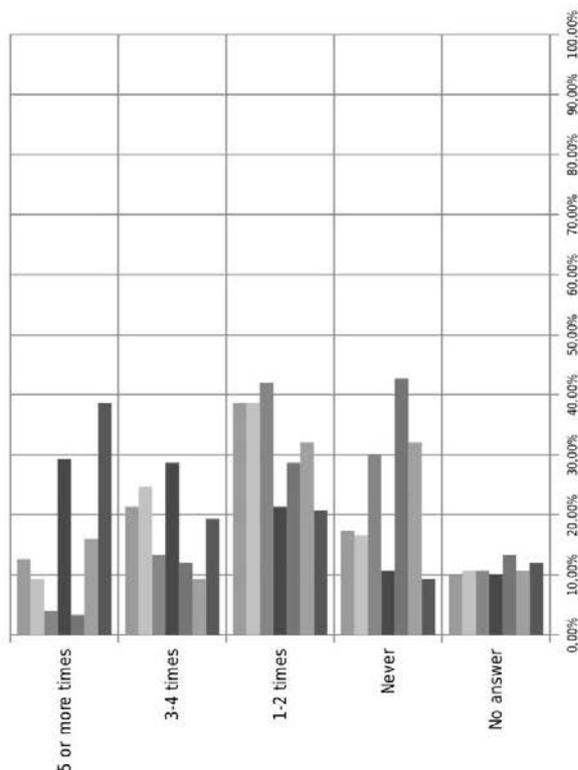


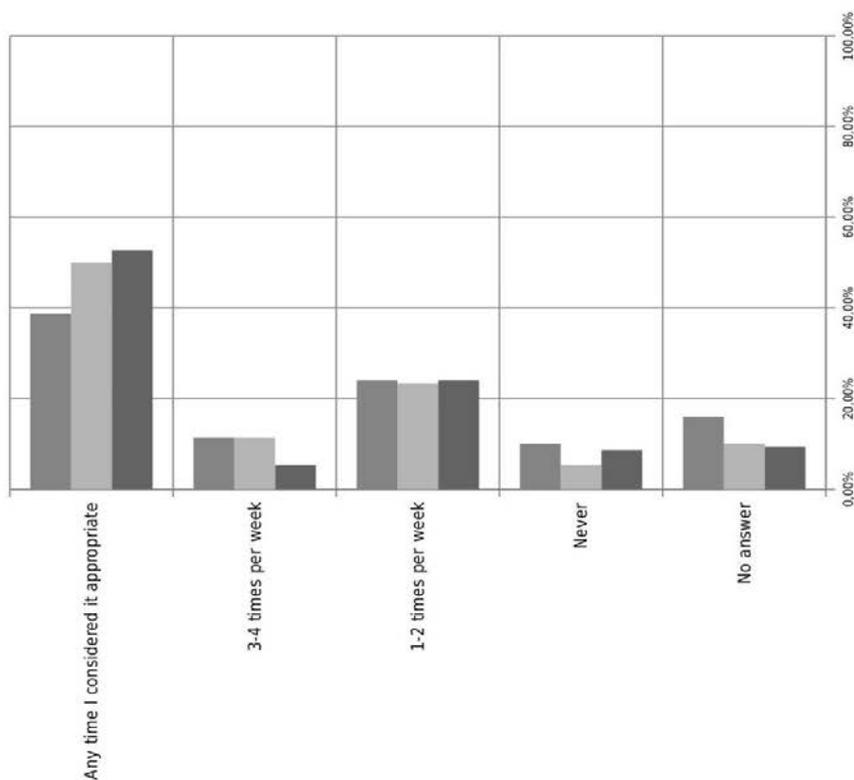
Fig. 3: questions 3 and 4 details and results

**4. How often, during last school year, did you**



- 4g. Make use of inclusive practices, learnt from others or taken from your previous experience, in different contexts or situations?
- 4f. Make reference, in your intervention, to ministerial indications or indications from the POF?
- 4e. Note in official papers successful practices for the inclusion of pupils with SEN?
- 4d. Have moments of comparison/collaboration with families, to plan interventions at school/at home?
- 4c. Have moments of collaboration with other organizations?
- 4b. Participate in research/debate groups with parents, therapists etc.?
- 4a. Inform yourself or took part in seminars, refresher courses etc.?

**3. How often, during last school year, did you**



- 3c. Change class organization (groups, one-to-one, individual)?
- 3b. Re-elaborate and personalize activities?
- 3a. Plan activities and collaborate with the curricular teacher and the support teacher?

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## ***The Role of Teacher's Written Formative Feedback on Students' Critical Thinking***

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### **Abstract**

Formative feedback in higher education has positive effects when it facilitates the development of students' reflection and self-assessment in learning (Nicol, Thomson, & Breslin, 2014). That said, the increasing pressures of workload on university teachers make the design of formative feedback strategies more difficult to implement (Yorke, 2003). This study explores innovative ways for promoting written formative feedback in the context of undergraduate studies and for assessing their effectiveness. The investigation entails close collaboration with one teacher of Biology at the University of Aveiro, Portugal, in the context of teaching 'evolution' over a semester (2012/2013). One of the particular challenges was to encourage 88 first-year biology undergraduates to produce critical analyses of a selected press note related to the topic of evolution (i.e., the advent of genetic diseases).

The research approach we use is based on a critical social paradigm, assuming principles of action-research (Cohen, Manion, & Morrison, 2007). Data were collected through naturalistic non-participant classroom observation and semi-structured interviews (conducted at the end of the semester). All written documents produced by participants were used as part of this analysis. Considering the nature of the data, we use content analysis (Bardin, 2000).

Preliminary results show that the teacher's written comments increased opportunities for students to search for further information, to negotiate and take decisions within their group, to auto- and hetero-reflect before sending their critical analyses to the teacher. Group work allowed the development of critical thinking, collaboration and argumentation. Further results will be presented and discussed in the paper.

Keywords: written formative feedback; critical thinking; higher education

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## 1. Introduction

Constructive alignment is one of the most influential ideas in teaching and learning in higher education. The basic premise is that learning activities and assessment tasks should be aligned with the learning outcomes that are intended in the course (Biggs, 1999; Biggs & Tang, 2011; Trigwell & Shale, 2004; Kim, Sharma, Land, Furlong, 2012). One of the challenges for higher education is promoting more student-centred approaches, where students should construct meaning from what they do to learn (Ruiz-Primo, Briggs, Iverson, Talbot, & Shepard, 2011, Pedrosa-de-Jesus, Lopes, Moreira & Watts, 2012). In actuality, promoting students' higher order competences is difficult to do where learning tasks have previously been designed as relatively passive (Chapman, 2001). The study we discuss here explores innovative ways for promoting written formative feedback in the context of undergraduate studies and for assessing their effectiveness. Our investigation entails close collaboration with one teacher of biology at the University of Aveiro, Portugal, in the context of teaching 'evolution' over one semester (2012/2013). One of the particular challenges was to encourage 88 first-year biology undergraduates to produce critical analyses of a selected 'press cutting' related to the topic of evolution (i.e., the advent of genetic diseases). Opportunities for generating learning tasks and assignments to encourage students' higher order competences in an introductory biology course like this, such as questioning competences and critical thinking, were previously infrequent and rarely taken. In this particular course, there was a strong emphasis on memorisation of scientific concepts throughout exams (Pedrosa-de-Jesus, Lopes, Moreira & Watts, 2012).

Critical thinking (CT) has emerged as an essential outcome of university learning (Dwyer, Hogan, & Stewart, 2014). Ennis (1987) presented one of the most well known definitions for critical thinking, distinguishing between abilities and attitudes and so-called 'dispositions'. Abilities refer to the cognitive dimensions, while dispositions relate to more affective aspects. These abilities are organised into five areas: elementary clarification, basic support, inference, elaborated clarification, and strategies and tactics. In addition, in the Delphi Project Report (Facione, 1990, p.2) critical thinking is said to be 'the process of purposeful, self-regulatory judgment'. That report formalised a list of core cognitive skills for critical thinking: 1) Interpretation (Categorisation, Decoding Significance, Clarifying Meaning); 2) Analysis (Examining Ideas, Identifying Arguments, Analysing Arguments); 3) Evaluation (Assessing Claims and Arguments); 4) Inference (Querying Evidence, Conjecturing Alternative, Drawing Conclusions); 5) Explanation (Stating Results, Justifying Procedures, Presenting Arguments); 6) Self-Regulation (Self-examination, self-correction). Critical thinking like this requires students to be engaged actively in the process of conceptualising, applying, analysing, synthesizing, evaluating, and communicating information (Scriven & Paul 1996; Paul & Elder, 2004; Vieira, Tenreiro-Vieira & Martins, 2011). Evidence of higher-order competences is usually related to the context of the learning environment and to an effective teaching presence that encourages participation and triggers immersive dialogue and discussion (Garrison & Cleveland-Innes, 2005).

In our case, we were specifically interested in developing critical analysis competency, to mobilise students' critical thinking abilities, broadly using Ennis' (1987) taxonomy: (i) to judge the credibility of a source, for example, through the

selection of the press note; (ii) to identify where clarification was needed during the process of knowing the aims and the scope of the research; (iii) inference abilities during the evidence and research outputs evaluation, and scientific articles recommendations as well ; (iv) the strategically and tactical abilities, described by Ennis (1987) as ‘deciding on an action’ and ‘interacting with others’.

The main aim of this study has been the design of strategies for appropriate written formative feedback to foster innovation within the context of an undergraduate biology programme, despite the well known constrains. One of the assignments in the semester on evolution challenged both teacher and students: the 88 first-year students were encouraged to produce a critical scientific analysis of a ‘press cutting’. Needless to say, this required both an understanding of the science involved, and a capacity to see where the ‘press cutting’ had either ‘managed’ or ‘mismanaged’ the news item. In this paper we: (1) describe the teacher’s written formative feedback during the assignment process; (2) evaluate and discuss the quality of teacher’s feedback towards the development of students’ critical analysis; (3) analyse teacher’ s perceptions of what constitutes good feedback in this context.

## **2. Feedback: possibilities and constrains**

Feedback is considered to be one of the most influential factors in the improvement of learner achievement. Evans (2012) stated that there is now a strong degree of consensus as to what constitutes effective feedback practice, particularly where assessment is considered as an integral aspect of teaching. For instance, Hattie and Timperley (2007, p.102) consider that feedback typically occurs ‘... after instruction that seeks to provide knowledge and skills or to develop particular attitudes’, and Nicol, Thomson and Breslin (2014) think that feedback has positive effects when it facilitates the development of students’ reflection and self-assessment in learning. Providing clear requirements for participation, and ensuring approaches to assessment and feedback are congruent with intended learning outcomes, are both important design goals (Orsmond & Merry, 2011).

Figure 1 presents the outline derived from a study by Tunstall and Gipps (1996). Feedback may be evaluative (that is, judgemental) or descriptive (that is, task-related). This results in four types of feedback (A, B, C and D), across a continuum representing evaluative-descriptive approaches to assessment. Thus, evaluative feedback types are: A1: Rewarding; A2: Punishing; B1: Approving; and B2: Disapproving. Descriptive feedback types are: C1: Specifying attainment; C2: Specifying improvement; D1: Constructing achievement; and D2: Constructing the way forward (Tunstall & Gipps, 1996).

		Type A	Type B	Type C	Type D		
		Rewarding	Approving	Specifying attainment	Constructing achievement		
		Rewards	Positive personal expression	Specific acknowledgement of attainment	Mutual articulation of achievement		
1 Positive Feedback			Warm expression of feeling	Use of criteria in relation to work/behaviour; teacher models	Additional use of emerging criteria; child role in presentation	1 Achievement Feedback	
			General praise	More specific praise	Praise integral to description		
			Positive non-verbal feedback				
		Punishing	Disapproving	Specifying improvement	Constructing the way forward		
		Punishments	Negative personal expression	Correction of errors	Mutual critical appraisal		
2 Negative Feedback			Reprimands; negative generalisations	More practice given; training in self-checking	Provision of strategies	2 Improvement Feedback	
			Negative non-verbal feedback				
		Evaluative		Descriptive			

Figure 1. Teacher feedback typology: a summary (Tunstall & Gipps, 1996, p. 392)

In our adaptation of this model as described later, Evaluative feedback includes teacher's criticism about the assignment (both positive and/or negative), while Descriptive/Constructive feedback presents teacher's questions for reflection, aspects that could be improved and suggestions that can lead to the improvement of the critical analysis. Within evaluative types of feedback, judgements are made according to explicit or implicit norms. Within descriptive types, feedback more clearly relates to actual students' competence. Therefore, Type C feedback shows a mastery-oriented approach to formative assessment and focuses on the idea of work as product, while type D feedback emphasizes process aspects of work, with the teacher playing the role of facilitator, rather than evaluator (Willian, 2011, p. 7).

The way a student interprets written feedback comments will also affect what impact the assessment has on learning: praise is not always interpreted in a positive light, just as criticism is not always interpreted in a negative light (Kingston, 2009). However, too often, feedback focuses on failings rather than achievements, and saps students' confidence levels. Positive feedback brings few problems to students or to staff giving it. It is the feedback on unsuccessful work that causes most heartache to staff and students alike (Peelo, 2002). Going further, Askew (2000) describes co-constructive feedback as a type of feedback with the following characteristics: dialogic, democratic, bi-directional, of sharing responsibilities, reflective, situated, metacognitive, formative, problem solving, enhancing learning. Besides the relevance of the teacher's role in providing oral and/or written feedback, it is also important that students engage and use feedback. Feedback, therefore, should be effective for both teachers and students if both are to prosper in their academic communities. Feedback strategies can stimulate students' motivation to learn in an academic context (Ivanič, Clark & Rimmershaw, 2000). In fact, when receiving formative feedback on their work, students can deal with their difficulties and improve the next element of their assessed work (Black & Wiliam, 1998; Hattie & Jaeger, 1998; Race, 2005).

According to O'Neil, Huntley-Moore & Race (2007) 'feed-forward' is a critically useful part of feedback, where students know about how exactly to go about improving their learning. In this vein, Race (2005) has already presented several aspects often referred to as 'feed-forward': details of what would have been necessary

to achieve better marks or grades, expressed in ways where students can seek to improve their future assignments or answers; direct suggestions for students to try out in their next piece of work, to overcome problems or weaknesses arising in their last assignment; suggestions about sources to explore, illustrating chosen aspects of what they themselves are being encouraged to do in their own future work.

### **Teacher workloads**

An increasing pressure of workload of university teachers makes the design of formative feedback strategies more difficult to implement in higher education context (Black & Wiliam, 1998; Yorke, 2003). University teachers find it difficult to spend sufficient time responding to students and their particular problems; the assessor's time and resources are usually constrained (Race, 2005). Crisp (2007) also reported that university teachers stated that producing formative feedback on students' assignments demands considerable effort and may not lead to learning improvements. Externally imposed time constraints due to the reduction in course duration may interfere with the 'feedback loop' (Sadler, 1989) or 'loop of reflection' that is formative assessment (Knight & Yorke, 2003). The danger of a focus on written feedback is that students will often misinterpret the comments as facts to be adhered to, rather than queries to be addressed, and so a key element of the feedback process is lost as the feedback loop is never complete (Gibbs & Simpson, 2002). One possible solution for these problems is to expose students to the whole databank of comments from which their own specific comments derive (Nicol, 2010). Feedback strategies could change in style, purpose, meaning and processes as it moves from evaluation to description.

Adapting individual comments to the students' needs, especially when student numbers are large and personal contact is limited in higher education, is one constraint that university teachers face in designing feedback strategies (Nicol, 2010). Many teachers find it less satisfactory putting feedback into a written format than when giving feedback in face-to-face contexts (Race, 2005). Additionally, students often report that they do not understand written feedback comments and/or that the comments they receive do not meet their needs and/or do not help to clarify areas that they do not understand (Nicol, 2010). Students also declare that the best way to enhance written feedback would be to support it with one-to-one meetings with the teacher (Higher Education Authority (HEA), 2010). Although all agree that it is essential to optimise feedback if we want to improve the quality of learning, this concise review show several context constrains. Our study, as referred earlier, pretends to present some concrete and contextualised suggestions of formative feedback, evaluating the consequences, in particular on students' critical thinking.

### **3. Innovative formative feedback and assessment strategies**

Our study took place in the teaching context of 'evolution' (2nd semester of 2012/2013) at the University of Aveiro. The curricular unit was organised in 2-hour per week lectures, lab sessions (2 hours per week) and theoretical-practical sessions (1 hour per week). The learning tasks and the assessment rules were established from the beginning: 85% for the final written exam and 15% for the critical analysis group work. Table 1 shows the curricular unit lectures timeline together with the students' assignment task (critical analysis).

Table 1 – Curricular unit lecture time-line

Context/ date		Assignment/Teacher's feedback <sup>1</sup>
Face-to-face sessions	20 February 2013	Lecture/Debate
	27 February 2013	Lecture/Debate
	6 March 2013	Lecture/Debate
	13 March 2013	Lecture/Debate
	20 March 2013	Lecture/Debate
	3 April 2013	Lecture/Debate
	7 April 2013	Group work final composition and selection of the press note for analysis
	10 April 2010	Lecture/ Debates
Autonomous work	21 April 2013	First teacher's written formative feedback (about 1 <sup>st</sup> task – April 7 <sup>th</sup> )
	5 May 2013	Students' handing of the first version of critical analysis
	19 May 2013	Final teacher's written formative feedback of critical analysis (2 <sup>nd</sup> task- May 5 <sup>th</sup> )
	22 May 2013	Final written exam
	10 June 2013	Handing over the final version of the critical analysis together with students' group written feed-forward

During once one week's lectures, the teacher organised several debates around the theme Evolution, the aim being to confront students with controversial ideas about the concept, the intention also being to collaboratively define this scientific concept. The students' discussions were under the teacher's guidance/ supervision, having scientific literature support (such as book chapters and papers) available on Moodle and Diigo (web 2.0 tool). As noted, the study was focused on the analysis of the feedback produced along one of the assignments, that is, the written critical analysis, scientifically supported, of a selected press release.

As suggested by the teacher, the 88 undergraduates organised themselves in 21 groups (2 to 4 students). During their autonomous work, each group selected an article from newspapers, books or Internet blogs. A supporting learning tool called Guidelines for a critical analysis of a topic about evolution was designed to help them do so, during the process of their critical analysis. This learning tool was organised like a scientific article, where groups had to write an abstract, an introduction, and specify the materials and methods, present results and discussion, draw conclusions and a list of references. The document also had a brief explanation and some guiding questions in each of the sections and formatting requirements. It was also established a limit of 1000 words, approximately 4 pages.

The group work was supported mainly by the teacher's written feedback, only by e-mail, and an evaluation grid developed in Excel form. Written comments included questions for reflection, suggestions for improvement (i.e. further reading) and also

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<sup>1</sup> by e-mail (from teacher to group/from group to teacher)

critical observations. Students had to submit the final assignment until 10th of June, expecting that they will have in mind the final teacher's written feedback.

All students had also self-assessed their performance in the course of their group work using online questionnaires (individual and group assessment). They had to score either their own performance or each colleague, about the group work process of each critical analysis.

#### 4. The research study

The study was organised in two phases: first, to design and implement strategies for formative feedback and assessment aimed at encouraging students' critical thinking within a curricular unit; second, to collect actors' opinions about that process in order to evaluate their perceived efficacy. The research approach was based on a critical social paradigm, assuming principles of action-research (Cohen, Manion, & Morrison, 2007). According to Schmuck (2006, p.36), action research implies that 'the researcher [an outsider] collaborates with practitioners [teachers] in identifying research problems, its causes, and possible forms of intervention'. Our collaboration has followed a model of co-researchers (Macaro & Mutton, 2002), which allows each participant to benefit from the enterprise. Consequently, the researchers had the opportunity to undertake research in natural teaching-learning settings and the teacher used the curricular unit 'Evolution' to analyse and evaluate new approaches to teaching and learning in a supported way. Data were collected through naturalistic 'low-participant classroom observation' during informal contacts with the teacher (before or after classes). All written documents were used for analysis, particularly the teacher's written feedback. Semi-structured interviews were undertaken (at the end of the semester) with the teacher. We used content analysis (Bardin, 2000), together with the adapted Tunstall and Gipps (1996) feedback typology (see Fig.1). Table 2 provides the description of each type of feedback.

Table 2 – Quality feedback for critical analysis.  
Adapted from Tunstall & Gipps (1996)

<b>Dimension</b>	<b>Category</b>	<b>Indicators</b>	<b>Description</b>
A. Evaluative feedback	A.1 Positive feedback	A.1.1 Approving	To approve students' work or engagement
	A.2 Negative feedback	A.2.1 Disapproving	To disapprove of student's work or behaviour
B. Descriptive/ constructive feedback	B.1 Achievement feedback	B.1.1 Specifying attainment	To identify and label aspects of successful attainment
		B.1.2 Specifying mistakes/failures	To identify mistakes/ failures in work performance
		B.1.3 Constructing achievement	To specify how something that is being learned can be corrected.
	B.2 Improved feedback	B.2.1 Specifying improvement	To shift the emphasis more to the student's own role in learning, where teacher is as 'facilitator' rather than 'provider' or 'judge' of feedback.

Dimension	Category	Indicators	Description
		B.2.2 Constructing the way forward	To give student greater responsibility to make choices for themselves, instead of telling student what to do to improve.

## 5. Research outcomes

### 5.1 - Teacher's written formative feedback and assessment results

Table 3 gives an example of the teacher's written feedback with Group 1 at different moments of the critical analysis process (initial, intermediate and final). Concerning the Evaluative feedback dimension (A) written feedback was mainly focused at the beginning of the assignment (press note selection and group work organisation - April 6th). Descriptive feedback (B) was used during the intermediate and final phase of the critical analysis process. This single example also shows that teacher's written feedback was more focused on the identification and amending mistakes, giving clues to improve the group work.

Table 3 – Examples of teacher' written feedback to critical analysis of Group 1

First feedback		Intermediate feedback		5 May	Final feedback	
3 April	6 April	19 April	21 April		19 May	2 June
Group Definition of group composition and selection of the press notes for analysis	<b>1<sup>st</sup> teacher written feedback: (A.1.1); (B.1.1)</b>	1 <sup>st</sup> Group feed forward	<b>2<sup>nd</sup> teacher written feedback: (B.1.1)</b>	Group Delivery of the first version of critical analysis	<b>3<sup>rd</sup> teacher written feedback: (B.1.1); (B.1.2)</b>	Group Delivery of the final version of critical analysis 2 <sup>nd</sup> Group feed forward

The same sort of analysis was used for the whole of the teacher's feedback to the remaining groups (21 groups in total). Table 4 shows the result of the total feedback occurrences in each category, giving an idea of the frequency and the 'quality' of teacher's written formative feedback. To enhance consistency, all feedback categorisation was carried out during a one-week period by a single researcher.

Table 4 – ‘Quality’ of teacher’s written feedback during group-work

Categories of Teacher’s written feedback	Moments of Teacher-Group Interaction		
	First	Intermediate	Final
<b>A. Evaluative feedback</b>			
<b>A.1 Positive feedback</b>			
A.1.1 Approving	20 groups	1 group	0
<b>A.2 Negative feedback</b>			
A.2.1 Disapproving	8 groups	0	0
<b>B. Descriptive feedback</b>			
<b>B.1 Achievement feedback</b>			
B.1.1 Specifying attainment	3 groups	1 group	18 groups
B.1.2 Specifying failure	2 groups	1 group	21 groups
B.1.3 Constructing achievement	18 groups	6 groups	21 groups
<b>B.2 Improved feedback</b>			
B.2.1 Specifying improvement	1 group	0	0
B.2.2 Constructing the way forward	0	0	0
<b>Total</b>	<b>52</b>	<b>9</b>	<b>60</b>

Table 4 shows that, at the first moment of interaction, the teacher wrote 58 ‘feedback statements’: 20 positive feedback (approving), 8 negative (disapproving), 23 achievement (Specifying attainment, Specifying failure, Constructing achievement) and 1 improved feedback (specifying). By contrast, at the final moment of interaction, he wrote 60 statements, all of them descriptive feedback. That is, a more constructive and positive achievement feedback. During the group-work process (intermediate moment), the teacher wrote 8 feedback statements, most of them in a positive mode.

The following examples illustrate some of this feedback written interactions during the first moment:

**A.1.1-** “O.K. your theme is already registered. Good choice.” [Positive feedback - approving - Group 10].

In 33 % of the situations (7 groups), “teacher’s negative feedback” was related to group composition. For instance, some groups did not sign in and send the compulsory ‘code of conduct’ outlining students’ responsibility and ethical commitment within the work:

**A.1.2 -** “Concerning the group composition we are having a problem: one of you did not send the Code of Conduct as established on the assessment rules.” [Negative feedback - disapproving- Group 13].

Just one group had negative feedback concerning the selection of the press note. However, the teacher, in a constructive manner, specified the problem stressing that the content of the press note did not fit the topic of ‘biological evolution’. Additionally, he also questioned the credibility of the source of information. Above that, he emphasised the students’ important role on their autonomous learning.

In fact, according to Ennis, (1987), the ‘bases for a decision’ implies the development of students’ critical thinking abilities, such as ‘Judge the credibility of a source’. The following excerpts show examples of what we have been discussing above:

**A.1.2** -: *“It seems to me that your choice of text could give you a considerable headaches to elaborate a critical analysis”*. [Negative feedback - disapproving-Group 3].

**B.1.2** - *“The press note you have chosen, in my opinion, it is a little on the side of evolution”*. [Achievement feedback - Specifying failure - Group 3].

**B.2.1** - *“You should have already thought about your choice, knowing how you are going to discuss the ‘news’, therefore how to write the critical analysis. So I’m not saying that you should find another text... However, I think the theme is not going to help you... But I believe that you are going to demonstrate that I’m wrong.”* [Improved feedback - Specifying improvement - Group 3].

The teacher identified aspects of successful attainment from three groups. For instance, Group 7 selected a press note with strong potential for group discussion. Much of the scientific information presented in the text showed the main controversial aspects of evolution theories:

**B.1.1**- *“Concerning the theme, it seems to me that it has a lot of potential for discussion. It is a big challenge because most of the information presented has already been changed/ developed/ replaced...but, for this reason, it will be a challenge for the group.”* – [Achievement feedback - Specifying attainment - Group 7].

Eighteen groups (86 %) were advised to search for the scientific article that gave rise to the press notes, for instance, write to the authors:

**B.1.3** - *“My suggestion is that you should find the original scientific article that give rise to the press note. One suggestion is to write to the authors...”* [Achievement feedback - Constructing achievement - Group 11].

During the intermediate teacher-group interaction moment, six groups requested further written feedback. For instance, as a consequence of the written feedback, Group 3 decided to select another ‘press note’ for their critical analysis. This could be seen as a positive consequence of the first teacher-group interaction, explained above. For this case, the teacher approved their new choice:

**A.1.1** – *“It seems to me that you made a good choice”*. [Positive feedback- approving - Group 3].

Although they had a supporting learning tool (Guidelines for a critical analysis of a topic of evolution) as noted earlier, Group 5 had a need for additional clarification, such as how to make an abstract:

**B.1.3** - *“The abstract should reflect your critical analysis. Your critical analysis should follow the structure of a scientific article. In this case, the abstract also*

*synthesize the entire article. What I want, when I am reading your abstract, is to have a general idea of what you did in the critical analysis.”* [Achievement feedback - Constructing achievement - Group 5].

After delivering the first version of the work, the teacher sent his final written feedback to individual groups. Broadly speaking, this last teacher’s formative written feedback revealed a prevalence of the following within categories: “B.1.1 - Specifying attainment” (18 groups); “B.1.2 - Specifying failure” (21 groups); and “B.1.3 - Constructing achievement” (21 groups).

The next example illustrates a positive feedback concerning the adequacy of the critical analysis:

**B.1.1** - *“In general, the "Abstract", the "Introduction" and "Results and Discussion" are well done. Congratulations.”* [Achievement feedback - Specifying attainment - Group 12].

However, all groups showed some sort of difficulties to write their critical analysis according to the teacher required Guidelines. So, the teacher identified mistakes/failures of some kind in groups’ work performance:

**B.1.2** - *“In my opinion, the main problems detected in your critical analysis are related with the "Introduction" (it did not fully frames the theme), the connection between the "Material and Methods" and with "Results and Discussion" (R &D)”.* [Achievement feedback - Specifying failure - Group 3].

The teacher had to be very specific on how to improve and even change/correct the final critical analysis for the 21 groups:

**B.1.3** - *“The abstract should be rewritten because it does not describe the scientific study. When I am reading the abstract I must understand what is (are) the problem(s) addressed (s), what has been done to address these issues and what are the main conclusions. This abstract does not do that.”* [Achievement feedback - Constructing achievement - Group 1].

The overall results show the low frequency of ‘improved feedback’ envisaging future assignments, such as ‘B.2.1 - Specifying improvement’ and ‘B.2.2 - Constructing the way forward’. This means that, it was not provided enough suggestions as to how improve future assignments in order to promote the development of students higher order competences, such as, questioning and collaborative work.

As referred earlier, it was defined from the beginning that the written critical analysis group work should have a 15% (3 values) of the final marks. Table 5 shows the assessment results of all groups (21), involving 88 students. Students from the same group have the same assessment grade.

Table 5 – Assessment results of the critical analysis

Critical analysis [0-3]	n° of Groups	n° of students	% of students
1,9	1	4	5%
2,1	4	15	17%
2,2	1	5	6%
2,3	1	3	3%
2,4	1	5	6%
2,5	1	5	6%
2,6	4	19	22%
2,7	5	20	23%
2,8	1	5	6%
3,0	2	7	8%
<b>Total</b>	21	88	100%

These results show the great involvement of all students despite this being the first time of using this kind of assessment learning task. The global marks were very positive indeed and had, in turn, a positive impact in their final grade on the discipline. Approximately 65% of the students (56) had a minimum of 2.5 values, with two groups having the maximum grade (3 values). The remaining groups (8) were scored between 1.9 and 2.4 values, where only one group had the lowest score (1.9).

## 5.2 The teacher's opinions

The teacher's perceptions were collected through a semi-structured interview at the end of the semester. The content analysis allowed identification of important text units, and these were clustered to identify general and unique categories (Cohen, Manion, & Morrison, 2007).

Regarding the innovations introduced in the teaching and learning practices, the teacher confirmed the fact that it has been the first time he has implemented written group's formative feedback by using a critical analysis development process:

*- Compared to previous years, this year... in quantitative terms ...I have maintained three values (15%) for the critical analysis. However, some 'nuances' were introduced, particularly the kind of feedback I have sent to groups. In some of the situations, I made suggestions for changing, in other cases, I even wrote that they should amend or re structure specific sections of the critical analysis. So, I gave some feedback, playing the role of a referee for this critical analysis. And, so, this part did not exist in previous years.*

However, he also stated that sending formative feedback to 21 groups involved a huge effort, not only from the point of view of the time spent, but also in the identification of mistakes, and the design of the questions and suggestions for improvement:

*- This feedback exercise involved a lot of work to the teacher. Because.... the feedback was given as follows: I made an overall assessment... therefore, I*

*had an Excel sheet for each group where a general review of the critical analysis was registered and then I reviewed, in detail, the entire critical analysis. Each document handed in has x text lines and each of my comments were reported to line y or z. Those comments really, in my perspective, were made in order to improve the groups' critical analysis, sometimes aiming at a better 'speech articulation', a better prose. Other times, I simply asked for a better scientific support of their statements. Frequently, I also advised them to add references supporting what they were saying in the critical analysis and, therefore, this gives me some work".*

On what concerns the efficacy of this task, the teacher considered that it allowed him to develop various students' competences, such as the selection and evaluation of scientific information, and the group work collaboration:

*– Well, I think that this activity promoted students' critical reflection. On the other hand, it also promoted the collaborative group work, since, as you know, the groups could go up to five elements. And therefore only for that it was worth it.*

Furthermore, he considered that the self-assessment process could be integrated in the students' summative assessment, making it of mandatory character:

*– The self-assessment is also very important. Some students were extremely objectives when doing their own critical analysis. Some even said: that peer/colleague only saw the text at the end. Anyway, here we have some critics and I think that this experience was extremely important for students at this stage. However, the fact of knowing how to work in group, accepting the others opinion ... and that is not always easy. To develop/write text documents, to search ... I think it was worth for all of this.*

Also, the teacher stressed how important is to involve groups during the critical analysis feedback process. He considered that it helped to develop several students' competences, such as argumentation:

*- In the end, it was not necessary for students' agreement with my suggestions and opinions, they could disagree with me. However, it was required that they prove/justify their opinion and some groups were looking for extra bibliography in order to argue against what I was saying about their critical analysis.*

When asked about new developments for the following academic year, teacher stated that it will be important to continue implementing this kind of learning activity, providing the same sort of guidelines and suggesting scientific bibliography aiming at promoting students critical thinking. Regarding the teacher's role during this process, he considered the importance of acting as a non-participant observer during the group work to collect additional information about their learning process (i.e. using distance web tools):

*– If I had the opportunity to be a non participant observer, when groups were developing their critical analysis, I think it would be extremely interesting for*

*me in order to understand the dynamics of some groups. Obviously, they probably would not feel comfortable with the teacher looking at their work and listening to them. I have the idea that most of the work was developed during the evening interacting through distance web tools, email, etc... I also think ... that the group did it because they had no opportunities to meet. However, I consider that it is also important to know how to use all these new web tools.*

When questioned about the influence of this type of teaching and learning strategy on his academic practice, he stated that it was very useful since it helped him to better align teaching with learning outcomes, therefore changing the way he taught "Evolution":

*– As a teacher, these strategies are extremely pleasant since I'm going to the lectures always taking something new. I'm not going just to transmit knowledge for students to memorize and then they go to the exam ... no ... this is a deliberate strategy having a specific purpose, where all the intermediate steps are planned in order to maximize the final result [the students learning outcomes]. Therefore, this is what I most value in these strategies being develop during this curricular unit as a result of this collaboration.*

## **5. Conclusion**

The overall results show the great involvement of the teacher and all students. Although the teacher stressed, during the interview, his enormous effort in carrying out written feedback for 21 groups, over a 10-week period, he also faced this strategy as a personal challenge and recognised several benefits for students.

The students' overall quantitative marks were very positive indeed and, as noted, had a positive impact in their final grade in the discipline. Data show that teacher's written comments increased opportunities for students to search for further information, to negotiate and take decisions within their group, to auto- and hetero- reflect before sending their critical analysis to the teacher. Group work also created conditions for the development of higher-order competences, such as critical thinking, collaboration and argumentation. Students' most common difficulties were related to group organisation issues, such as different schedules, compatibilities and commitment were identified.

The main findings of this preliminary study allow us to present the following suggestions and recommendations for all teachers interested in implementing concrete feedback strategies in Higher Education: i) to decide which type of formative feedback that could be provided according to the nature of the learning task designed, and the appropriate moment of the process; ii) to value students' peer and self-assessment, as part of the whole learning process; iii) to discuss with students the purpose of written feedback in order to reach a common assessment understanding. Table 4 could provide a good suggestion to clarify different modes of feedback in order to develop students' higher order competences such us critical thinking. There was much time and effort investment from all participants (teacher and students) so there is an obligation to attain this goal.

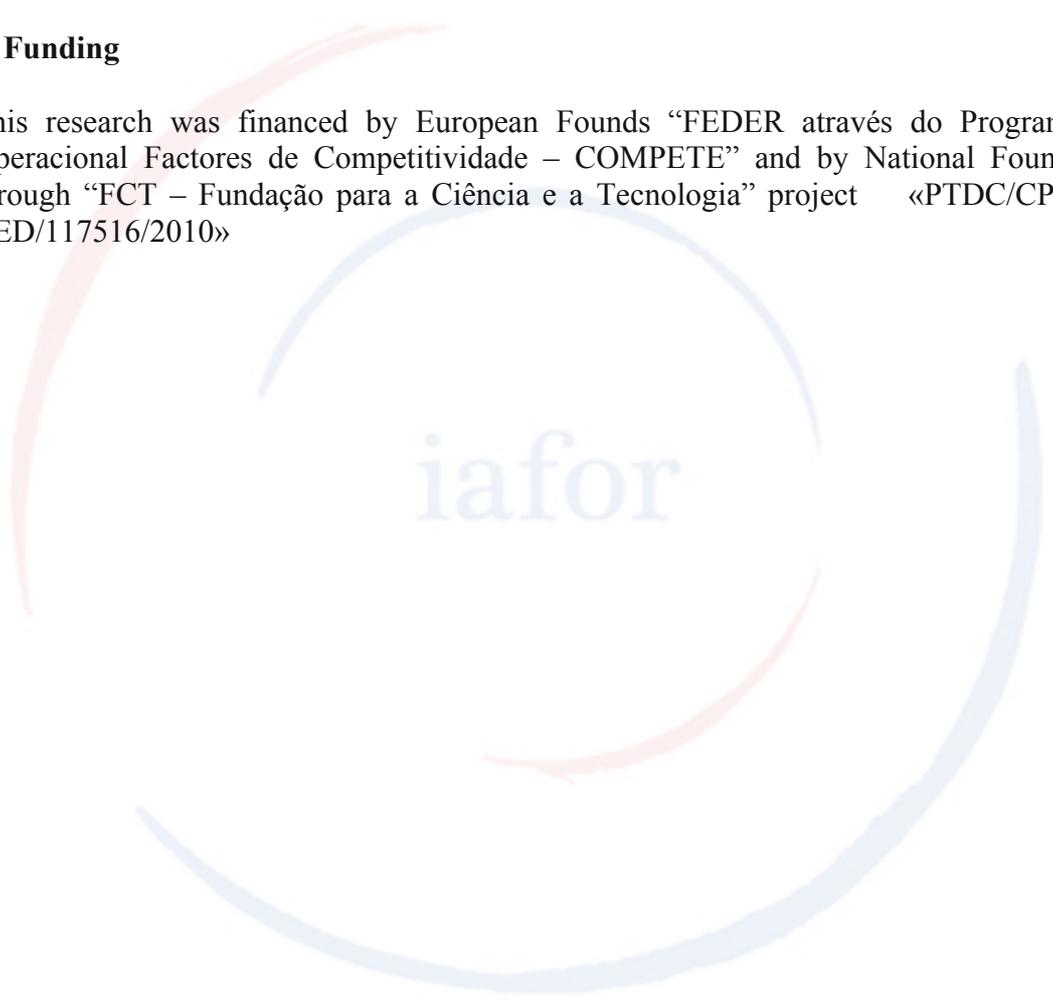
In this study, there was an implicit assumption that students would know how to use teacher feedback for future work. However, the teacher priority seemed to be the final product, therefore valuing Achievement feedback (B.1). However, we still need to confirm this assumption. To make students aware of this objective, teachers may have to teach them how to do this, and consider this wish as an aim of the learning tasks.

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The logo for 'iafor' is centered on the page. It consists of the lowercase letters 'iafor' in a light blue, sans-serif font. The text is enclosed within a circular graphic composed of several overlapping, semi-transparent arcs in shades of blue and red, creating a sense of motion or a stylized globe.

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***Engineering Co-Curricular Role Model Interventions to Develop Women Engineering Students Self-Efficacy at a South African Comprehensive University***

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**Abstract**

Women engineers face often negative stereotypes regarding their competence in the workplace. In the same way, women engineering students face various identity and professional obstacles in their study environment that may affect their feelings of self-efficacy. Furthermore, as the engineering environment is often described, as “a man’s world”, engineering is often perceived as a man’s job. Therefore, women are often deprived of women role models in engineering disciplines. Role models can have a positive influence on attitudes, identification with, and intent to pursue a career in the engineering field. This paper is a qualitative, descriptive and interpretive study of the rationale and operational aspects of the Women in Engineering Leadership Association (WELA) interventions to expose WELA members to role models and to create the opportunity for WELA members to be role models. The objectives of this paper are to provide suggestions for the design of the role-model interventions and to provide insight into the process of developing such interventions specifically for women engineering students. It is envisaged that these co-curricular interventions can be implemented at universities and higher education institutions concerned with improving the self-efficacy of women in engineering and other non-traditional employment fields for women.

Keywords: co-curricular interventions, role models, women in engineering

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## I. INTRODUCTION

The need for women to enter science, technology, engineering and mathematics (STEM) fields is indisputable, not only to draw on a pool of talent and expertise that has been untapped, but also to foster gender equality and challenge gender stereotypes (Young, Rudman, Buettner & McLean, 2013). Furthermore, it is known that women engineers bring diversity to the monoculture-engineering workforce, and extend the impact of engineering on society (European Commission, 2006). Usually, women show interest in the social aspects of technology and science and in this way, they can make a significant contribution to social and environmental issues (European Commission, 2006).

Although far more women are pursuing engineering qualifications than in the past, they remain under represented in engineering related careers. Nel and Bosch (2011) reported that women represent 9 percent and 14 percent of teaching and research staff in South African engineering faculties respectively. Only 21 percent of all research grants funded by the National Research Foundation are for women scientists. As a result, the engineering environment is often described as “a man’s world” and engineering is perceived as a man’s job (Du Tot & Roodt, 2009). Because of all these factors, women are often deprived of women role models in engineering disciplines. Several authors, such as Young et al. (2013) and Austin and Sax (1996) propose that identifying with a role model has a positive influence on both implicit and explicit attitudes, identification with, and intent to pursue a career in the science, technology, engineering and mathematics (STEM) fields. Role models emerge when others choose to emulate them and when they meet three criteria. Firstly, a woman role model’s success needs to be attainable, secondly, the woman role model must be perceived as similar and, thirdly, the student needs to care about her performance in a certain domain (Marx & Roman, 2002). Identifiable woman role models in STEM fields can also increase women’s implicit identification with these fields, decrease, and invert implicit gender stereotypes in addition to lessening the association of masculinity with STEM. Women role models in STEM could increase how well women students feel they fit into STEM fields, which is a very important aspect in increasing women’s intentions to pursue a career in these fields. Furthermore, implicit stereotypes about STEM impacts on women’s STEM career aspirations.

In an effort to retain and develop women engineering students (WES), a South African comprehensive university based in Port Elizabeth established the Women in Engineering Leadership Association (WELA). The School of Engineering at the university offers formal qualifications in mechatronics, electrical, industrial, and civil and mechanical engineering. In addition, the School of Engineering provides a comprehensive curriculum, offers various informal courses, maintains close links with industry, and includes service departments to assist with co-curricular activities and student developmental activities. One of the initiatives housed in the School of Engineering is WELA, which is one of five projects initiated and managed by the university and the merSETA\*<sup>1</sup> (manufacturing, engineering and related services sector education and training authority) chair in engineering development. WELA commenced in 2011 with the goal of focusing on the academic, professional and personal development of women in engineering. Further to these goals, the WELA leadership development programme (LDP) was designed considering the university values, graduate skills required by industry, input from women engineers, women

engineering students (WES) and other national and international leadership development programmes (Lourens, 2013a)

## **II. OBJECTIVES**

The underlying premise of WELA LDP is to improve the feelings of self-efficacy of WES. Self-efficacy can be defined as an individual's belief in their capability to plan and take action to achieve a particular outcome (Bandura, 1986). Efficacy, however, applies to any situation and is particularly important in choosing and executing constructive actions in situations that can be barriers to a desired outcome. In engineering, such a barrier can be negative stereotypes, active discouragement by peers or faculty and/or poor exam results (Marra, Rodgers, Shen & Bogue, 2009). The main sources of self-efficacy includes mastery experiences (having a positive experience in completing a course); social persuasion (social support and mentors); vicarious experiences (the visibility of women in engineering fields), and physiological states (debilitating performance anxiety for those belonging to a group for which there is a negative stereo type related to the task) (Bandura, 1986; Marra et al. (2009).

WELA offers comprehensive co-curricular interventions in the form of a university short learning programme. This paper describes selected role modelling co-curricular interventions developed for WELA members. Other aspects of the WELA programme, such as the design of the WELA programme and the development of a Self-leadership Workshop has also been researched (Lourens, 2013a; Lourens, 2013b; Lourens, 2013c). The role modelling co-curricular interventions and activities discussed in this paper are aimed at improving the third source of self-efficacy, namely, vicarious experiences. Further to this objective, this paper describes the importance of role models to WES and the co-curricular activities designed to expose WES to women engineering role models. For the purpose of this paper, reference is made to the engineering field, whereas the reference can also be applicable to the other dimensions of STEM, namely science, technology and mathematics. This paper also describes an intervention designed to create a role-modelling situation for WELA members to influence women first year students entering, and those considering entering engineering.

## **III. METHODOLOGY**

This paper is a qualitative, descriptive and interpretive study of the rationale behind and design of WELA's interventions to introduce role models to the WELA community. WELA members who attended a seminar with working engineers completed a feedback form relating to the relevance and importance of the speakers as role models. The workshop format is designed to incorporate a three-tiered professional development typology (Bryan & Schwartz, 1998) consisting of formal (a compulsory seminar as part of the formal WELA leadership development programme), non-formal (emphasising orientation, contextualising and motivational intent) and informal aspects (emphasising self-reflection, role modelling and peer support) (Lourens & du Plooy, 2013).

Additionally, feedback pertaining to the yearly WELA publication, "Inspirational Women" was analysed because the feedback related to role models. This paper provides a descriptive and interpretive study of the rationale and operational aspects of WELA's role model seminars from the data analysis. The WELA seminar and the

publications form part on the current longitudinal study on self-efficacy of South African engineering students at the university.

#### **IV. THE IMPORTANCE OF ROLE MODELS TO ENCOURAGE SELF-EFFICACY THROUGH VICARIOUS EXPERIENCES**

Darby (1992) proposed that women, to a greater degree than men, consider supportive persons, including role models, as important. Zeldin and Pajares (2000) found that women valued persuasion (direct encouragement) and vicarious experiences (seeing a person similar to oneself succeeding) as opposed to men who valued mastery experiences as critical to their self-efficacy beliefs (Marra et al., 2009).

Further underscoring the importance of role models in encouraging self-efficacy via vicarious experiences is the definition of a role model (Lockwood, 2006) as “an individual who provides the kind of success that one may achieve and also often provide a template of behaviours that achieve such success”. By identifying with an outstanding role model, individuals can become inspired to pursue similar achievements however, it is not clear that matching on dimensions such as race or gender is necessary for a role model to be deemed relevant (Lockwood, 2006).

#### **MALE OR WOMEN ROLE MODELS FOR WES**

Men make up the majority of scientists and engineers in most industrialised countries, even if the percentages differ from one field to the next (Blickenstaff, 2005). The implication is that there are fewer role models in engineering fields for women students to follow. Furthermore, a low proportion of women in this field could send a message to woman students that the discipline is unattractive to women and they should avoid it.

Lockwood (2006) argues that women role models might be especially beneficial to women. Outstanding women could function as inspirational examples of success by illustrating the kinds of achievement that are possible for women around them. The women role model could demonstrate that it was possible to overcome traditional gender barriers proving that high levels of success were attainable by demonstrating their competence in traditional male fields. It is thus possible that highly successful women could challenge traditional gender stereotypes about women.

Drury et al. (2011) found that same-gender role models were helpful for women already in the engineering field. It is also proposed that women role models are valuable in preventing women who are highly identified with engineering from underperforming and retreating from the field. Women role models are thus particularly effective in *retaining* women in engineering fields (Drury et al., 2011). In contrast, Drury et al. (2011) and Nauta, Epperson and Kahn (1998) found that when *recruiting* women into engineering fields, providing women role models might not always be more effective than providing male role models.

#### **THE POWER OF ROLE MODELS**

Identifying with a role model has a positive influence on both implicit and explicit attitudes, identification with, and intent to pursue a career in the engineering field.

Identifiable woman role models in engineering fields could also increase women's implicit identification with science thereby decreasing and inverting implicit gender stereotypes about engineering fields in addition to lessening the association of masculinity with science and engineering fields (Young et al., 2013). Women role models in engineering could increase how well women students feel they fit into engineering fields, which is a very important aspect in increasing women's intentions to pursue a career in these fields. Furthermore, implicit stereotypes impact on women's engineering career aspirations (Young et al., 2013).

A women role model is particularly influential in areas where negative gender stereotypes exist, additionally, women who reported being influenced by positive role models had higher career aspirations in engineering fields (Marx & Roman, 2002, Nauta et al., 1998). It was found that woman role models who demonstrated that women could be successful in engineering contributed to women engineers' feelings of belongingness (Richman & van Dellen, 2011). An important finding of the Richman and van Dellen (2011) study was that successful women engineers developed means of coping with social identity threat that arose from being a minority in the field. Not only did these women have more experience with being in gender-imbalanced environments but they also felt comfortable in a male-dominated environment.

The European Commission's (2006) findings are corroborated by informal qualitative data collected from 22 South African women engineers working in the engineering field (Lourens, 2013a). These findings were explicit in recommending that women entering the workplace did not make gender an issue and that woman engineering graduates "must just get on with it". The respondents were unwavering in their opinion that woman-engineering graduates must believe in their own worth and value and that they must use their strengths to highlight their abilities, as well as stand behind their opinions and decisions. Women engineers stated that it was important to work well in a team, but, on the other hand, it was also necessary to be self-sufficient and able to work alone and unsupervised (Lourens, 2013a)

### **FIRST YEAR WES FEARS AND CONCERNS**

After considering the findings of various studies, it was evident that the fears and concerns expressed by WES, as illustrated in Table 1, show an apparent lack of confidence necessary to be successful in a male-dominated field. Table 1 illustrates the informal survey results obtained from the 2011, 2012, 2013 first year WES (Lourens, 2013a; Lourens, 2013b)

**TABLE I**  
**FIRST YEAR WES FEARS AND CONCERNS**

<b>YEAR</b>	<b>Percent</b>	<b>CONCERNS</b>
<b>2011</b>	37	Experiencing discrimination and lack of collegial respect
	20	Being Intimidated which leads to demoralisation
	20	Not being taken seriously
<b>2012</b>	50	Being underestimated
	41	Experiencing sexism and not

		being taken seriously
	33	Being seen as emotionally weak
<b>2013</b>	57	Being undermined
	33	Feeling inferior
	30	Not being be taken seriously

In 2011, 37 percent of respondents indicated that they perceived that their biggest obstacles as a woman employee in a male-dominated work place would be discrimination and a lack of collegial respect. A further 20 percent listed intimidation by male colleagues and demoralisation as perceived obstacles, and 20 percent were of the opinion that male counterparts would not take them seriously (Lourens, 2013a)

The 2012 informal survey indicated the greatest perceived challenges were being underestimated (50 percent of respondents); sexism, again in the form of not being taken seriously resulting in not being accepted (41 percent of respondents); and being seen as emotionally weak and unable to cope with a tough working environment (33 percent of respondents) (Lourens, 2013a). In 2013, it was found that 57 percent of respondents listed a fear of being undermined and 33 and 30 percent respectively were concerned that they would feel inferior in a male-dominated environment and that that they would not be taken seriously (Lourens, 2013b).

The survey results clearly indicated that WES displayed fears and insecurities about how they would be accepted and treated in a traditionally male-dominated field, be it as a student or as a working engineer. Based on the findings of several authors, (including Marx & Roman, 2002, Nauta et al, 1998, Richman & van Dellen, 2011, Blickenstaff, 2006), Lockwood, 2006, Drury, Siy & Cheryan, 2011) it was found that exposing WES to role models might lessen their fears and insecurities. Further to these findings, several co-curricular interventions were designed to assist WES, by means of the WELA LDP, to overcome women engineers' fears and insecurities and to improve their feelings of self-efficacy. Section 5 discusses the interventions aimed at introducing role models.

#### **V. CO-CURRICULAR INTERVENTIONS TO INTRODUCE WOMEN ENGINEERING ROLE MODELS**

Women in engineering fields often contend with negative stereotypes that can cast doubts in their abilities to perform in these fields (Drury et al., 2011) the fear of confirming these stereotypes is known as stereotype threat and it causes women who are personally identified with the domain to underperform. It is proposed that interventions designed to prevent harmful effects of stereotyping threat could protect women by preventing them from underperforming and leaving the field (Drury et al., 2011).

Explicit in the WELA programme were two interventions created to expose WELA members to women engineering role models.

## SEMINAR

At the university, a yearly seminar is organised whereby working woman engineers are invited to address WELA members. The invitees are selected to represent various industries, ages and race. Topics ranges from “Being a woman in a man’s world” (2011), “The road to success: a woman’s perspective” (2012) and “Engineering across borders: a global engineering perspective” (2013).

The 2012 seminar included three women of different ages and educational backgrounds. The panel members shared their experiences in a male-dominated working environment and gave advice on strategies for coping in such an environment. Two of the panel members recommended the following for success in the work place:

Watch your attitude – you do not have to be overly aggressive to prove you are as worthy as your male co-workers. Your intelligence and work product should speak for itself (Louis, 2012).

Do not be afraid to reach out to women or men in senior positions (highlighting the importance of finding a mentor within the organisation) (Louis, 2012). Women in male-dominated fields typically have to work harder to prove themselves. You should remain positive and confident in who you are and what you stand for. It is important for women not to invest in the belief that they are at a disadvantage because of their gender (Gathercole, 2012).

The value of the panel discussion was in the interaction of the WELA members as aspiring engineers with women working in the field. Apart from motivating and assuring the WELA members that they could be successful in a male-dominated environment, the panel members shared their personal work experiences. A valuable lesson taught was that their first job might not be the right job for them and that they had to persevere and not think that it was just because they were women that they could not cope with the job.

The 2013 seminar included two practising male and three women engineers who have been involved in international engineering projects. They were briefed to include in their presentation what the differences were between working in South Africa and working overseas as well as their views on women working in male-dominated environments overseas. The 2013 seminar was seen as particularly relevant in light of predicted trends for engineering leadership education (Graham, Crawley & Mendelsohn, 2009). It was found that global engineering exposure to increase students’ ability to operate in complex international and multi-disciplinary team would become an important factor (Graham et al., 2009). It was also proposed that engineering students had to cultivate a stronger awareness of national and cultural differences in approaching engineering problems (Graham et al, 2009). Furthermore, by extending the invitation to male speakers, the study explored the possibly that WELA students could view males and women and relevant role models.

## FEEDBACK

Thirty-two WELA students who attended the seminar 2013 were asked to complete feedback forms (Lourens, 2013c). The feedback form consisted of questions relating to the relevance and importance of the speakers and the seminar itself. Responses were based on a five-point Liker scale (1=strongly agree, 2=agree, 3=not sure, 4=disagree, 5=strongly disagree). Table 2 presents a summary of the averages of the responses.

**TABLE II**  
**SUMMARY OF RELEVANCE AND IMPORTANCE OF SPEAKERS**

Question	Women speakers	Male Speakers
I can relate to the...	Agree	Agree
I am motivated by the...	Strongly agree	Agree
I would like to hear from them again...	Agree	Agree
They should be invited yearly to speak to WELA members...	Yes	Yes

From Table II feedback, the majority of the students could relate equally to both the male and woman speakers. They were, however, more motivated by the woman speakers than the male speakers, but indicated that they would like to hear again from the male and the woman speakers.

Table III summarises the average responses pertaining to the women speakers only.

**TABLE III**  
**WOMEN ROLE MODELS**

Question	Response
When I listen to the women engineers, I am happy about my career choice	Agree
I view the working women engineers as role models in their field	Agree
It is important to expose WELA students to women role models	Strongly agree

The responses in Table III clearly indicated that the women engineers confirmed that the students had selected the right career by enrolling for engineering studies. This indicated that they found the seminar and the speakers inspirational and motivating. They also viewed women engineers as role models and felt strongly that it was important to expose WELA students to women role models. The responses confirmed the importance of exposing WELA students to woman role models and the importance of the “Inspirational Women” booklet.

## INSPIRATIONAL WOMEN PUBLICATION

Drury et al. (2011) proposed that women who read about a successful graduate from their university in their own field rated themselves higher in success-related traits if the role model was a woman compared to a male. Since the inception of WELA in 2011, a publication called “Inspirational Women” has been distributed to students, schools and Industry. Yearly, the booklet features ten women from the Eastern Cape

across the spectrum of race, gender, religion and age (Inspirational Woman, 2011, 2012, and 2013). The women also represented a variety of industries, such as automotive and related, engineering consulting, fast moving consumer goods, construction, logistics, chemicals, academia and pharmaceuticals. Professional photographs were taken of each woman and they were asked to write responses to the questions listed in Table IV.

**TABLE IV**  
**PARTICIPANT'S QUESTIONS**

	<b>Typical questions</b>	<b>Rationale for question</b>
1	What do you do?	This question exposes students to a variety of possibilities and employment positions possible with their respective qualifications.
2	What is it like being a woman in a typical male-dominated environment?	These questions aim to orientate WELA students for entering a male-dominated field.
3	What advice would you give to women entering a male-dominated career environment or to those considering a career in a male dominated field?	
4	What is most challenging about your job?	These questions aim to give insight into the day-to-day activities of each featured woman and to prepare WELA students for the world of work.
5	What is a typical day?	
6	What characteristics and qualifications do you need for your current position?	This question allows for WELA students to focus on their strengths and weakness in relation to the career for which they are preparing
7	What are your goals for the future?	This question shows the possibilities for growth and further development
8	What do you do when you are not at work?	These questions allow the women to share personal hobbies and interests, often showing typical woman interests such as cooking and baking. This shows that being a successful engineer in a male-dominated field does not mean that typical woman interests need to be neglected / ignored?
9	If you weren't in this particular career what would you be?	

From Table IV, questions that should be highlighted as facilitating the most impactful response were the questions relating to being a woman in a male-dominated field and advice to women entering a male-dominated field. In their response to these questions, the women often suggested that gender should not be made an issue; they must just believe in themselves and work hard. One women engineer stated that it was important not to be a victim and not to allow the possibility that someone was treating a women differently because they were a woman enter their mind. Realistically, some of the women admitted that it was tough being a woman in male environment, but again stressed that a women engineer needed to earn respect by showing that she was competent and committed. Noticeably, some of the younger women mentioned that women felt more pressure to prove themselves constantly and that men still

undermined their capabilities because they were women (Inspirational Woman, 2011, 2012, and 2013).

This publication was not only inspirational to WELA students and other women in the manufacturing industry, but being selected for inclusion in the booklet was also recognition for the women featured.

## **VI. WELA STUDENTS AS ROLE MODELS- INSPIRATIONAL STUDENTS' PUBLICATIONS**

In conjunction with the yearly Inspirational Women booklet, WELA also published an Inspirational Student booklet. The aim of the publication was not only to showcase WELA students, but it also created an opportunity for them to influence woman students positively by considering engineering careers for themselves as well as for their peers. The importance of this role for WELA members was supported by McIntyre, Paulson, Taylor, Morin and Lord (2011) who stated that woman students might seek role models to which they compare or to collective agents (in-group members). The in-group members might help restore or create feelings of self-efficacy when a woman engineering student felt threatened or reduced.

Upon completion of the first year of the WELA programme, WELA members were also asked to write reflective articles in which they were required to write about themselves, their experiences as WELA members, the benefits of joining WELA and to name their personal highlights.

It might appear as if the questions were not the typical questions that would be asked of a role model. However, it was found that a role model could be inspirational or deflating, depending on how they achieved their success (McIntyre et al., 2011). This is consistent with the reasoning that when role models were perceived as having achieved their success through dispositional ability as opposed to situational advantages, then other members of the group could perceive themselves as able to overcome negative stereotypes and perform satisfactorily (Lockwood & Kunda, 1997). In the WELA student publications, some students referred to themselves as being raised in a single parent household in very trying circumstances, coming from the rural areas and battling to adapt to city life. One student mentioned that she had learnt that she was the only person that could determine her future while another mentioned that when she joined WELA she was unsure if she was coping with her engineering studies, but through the WELA programmes she had gained strength and felt empowered by many of the other WELA members (Inspirational Students, 2012, 2013). Given the definition of a role model (Lockwood, 2006) the WELA members featured in the Inspirational Students booklet had achieved some form of success and agreed that they would inspire woman students interested in an engineering field to pursue similar achievements, and be more comfortable and confident to enter the engineering field.

The majority of the WELA members wrote about how helpful the WELA programme had been to their self-development, confidence and adjustment to not only the university, but also to the Engineering School where 81 percent of students were male. The students' reflective writing pieces were inspirational, showing young woman students considering the engineering field that young women, be it from rural

areas or the city, from different cultures, race, and nationalities could support each other and adapt successfully in not only in a male-dominated course, but also in the workplace.

## VII. CONCLUSION

As a developmental initiative, WELA is aimed at the academic, professional and personal development of women engineering students. The role model seminar and the WELA publications co-curricular interventions presented as part of the WELA LDP could be seen as an attempt at increasing the self-efficacy of the WELA members. Specifically, the WELA LDP focused at creating vicarious experiences for WELA members by making women in engineering fields more visible, thus creating role models for WELA members. It was intended that the interventions would advance the self-efficacy in participants, while also encouraging them to act as role models for aspiring women engineering students.

The planned co-curricular interventions to improve the self-efficacy of minority groups, such as women in engineering described in this paper could be implemented by other universities and institutions concerned with establishing role models as well as encouraging and retaining women students in engineering (and science, technology and mathematics). The impact of the seminars and publications, along with the rest of the WELA LDP will be determined statistically and more formally, when the university's longitudinal study on the self-efficacy of South African engineering students that commenced in 2013 concludes.

\*1. SETA is an acronym for Sector Education and Training Authority. The members of SETA include employers, trade unions, government departments and bargaining councils where relevant, from each industrial sector. The Skills Development Act (1998) provides a framework for the development of skills in the workplace. Amongst other things, the Act makes provision for skills development by means of a levy-grant scheme and the establishment of sector-specific Education and Training Authorities – or SETAs – to administer the scheme's funds and manage the skills development process [31].

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The logo for the International Association for Educational Research (IAFOR) is centered on the page. It features the word "iafor" in a light blue, lowercase, sans-serif font. The text is enclosed within a circular graphic composed of two overlapping, semi-transparent arcs: a larger, light blue arc and a smaller, light red arc, both of which are slightly offset from each other to create a sense of depth and movement.

***Neuro-Teaching in Primary School: The Principles of Feuerstein's Mediated Learning Integrated into School Curriculum.***

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The European Conference on Education 2014  
Official Conference Proceedings

**Abstract**

The aim of this experimental research is to examine R. Feuerstein's educational theory.

By expanding on theories from Piaget and Vigotskij, Professor Feuerstein described a method to teach students how to study through the development of an active structural approach. This is effective for learning because it develops habits for seeking novel strategies when faced with new and complex problems.

The study, after analysing the international literature on the application of the method in Primary School, investigates one of the problems arising from the examination conducted so far: why isn't the Feuerstein's Instrumental Enrichment process consistently affects student performance in all subjects always?

The assumption of this research is that the Feuerstein program cannot influence the academic performance if it is not integrated into the school curriculum. It can be assumed that if the Feuerstein principles of mediated learning were applied to all subjects, a neuro-curriculum can be developed, resulting in a significant improvement in the school performance.

The study consists of a two-year quasi- experiment in a Primary School (2013-2014, 2014-2015). 82 students in the fourth and fifth grades and four IE (Instrumental Enrichment) trained teachers were involved. They were divided into four independent groups (which are equivalent to four classrooms): two are experimental and two are for comparison. Quantitative and qualitative assessment tools will be used before and after the process.

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## Introduction

This research project is about a process for integrating cognitive education into a Primary School curriculum. Specifically, it is focused on a complete and systematic program that allows the transfer of knowledge through concrete pedagogical acts: the Feuerstein program. It is a comprehensive learning process that integrates, systematizes and harmonizes within itself different approaches: cognitive, meta-cognitive and psychosocial. The Instrumental Enrichment's (IE) offers a two-fold approach: to intervene when deficient cognitive and metacognitive functions are identified and to stimulate the affective-motivational component of learning through the care of the educational relationship. According to Feuerstein, is not sufficient to simply focus on deficient thinking processes, is necessary to create conditions for the reconstruction of a student's sense of competence and self-esteem, arouse emotions, feelings, and projects that build confidence to face the life's challenges (Vanini, 1999).

Feuerstein's method is a method *to teach how to learn*. The main objectives are:

- to develop an active structural approach which is effective for learning
- to encourage habits for a continuous exploration to identify flexible strategies when facing new and complex problems
- to continue the process of self-expansion of a person's intellectual potential.

Feuerstein's program is based on Piaget's theory about the stages of cognitive development of the child (Piaget, 1965), but it goes beyond that, and on Vygotskij's theory about development potential (Vygotskij, 1986). It is builds on two theoretical principles: the cognitive modification and the learning mediation

According to Feuerstein, brain structures can be modified. Researchers in neuroscience have confirmed this fact. Environmental stimuli, when appropriate, can modify the synapses network and through repeated efforts can become denser and thus aid learning. Knowledge is the matrix of thought. Feuerstein vision moves beyond the position of Piaget and advances towards Vygotskij's theories. An individual's ability to gain the maximum benefit from environmental stimuli is determined by the type of mediated learning experience (MLE) to which he was exposed. Critical to the MLE process is the mediator, who facilitates the environmental stimulus and the subject. The mediator should strive to make every encounter an opportunity for growth, development and change (Feuerstein R., Feuerstein R.S., Falik e Rand, 2008).

A teacher transmits knowledge and skills on the assumption that the student is capable of learning, and that if the student does not succeed, it is the fault of the teacher. The mediator, however, is concerned with the learning process rather than the result. Feuerstein, attributing to "*the teaching quality and learning experience the main responsibility for the learner's development*" (Vanini, 2003, p. 29) raises many questions about the school's and teacher's role in student success.

The Instrumental Enrichment consists of two parts: the program and the methodology. The program consists of 14 tools, 500 sheets in total. Each tool focuses on different cognitive functions. All programs require 300 hours of application. This has been an issue because in Primary School it is difficult to add many hours to the school curriculum or remove students from the classroom. However, the ideal process would

be to integrate the methodological issues into the school curriculum to build a cognitive educational curriculum or *neuro-curriculum*.

Methodological aspects include:

1. The **cognitive map**: before the lesson begins the teacher analyses the task by several criteria: content, language, cognitive functions, cognitive operations, level of complexity, level of abstraction, and level of expected efficiency.

TABLE 1  
The Cognitive Map

COGNITIVE MAP	
<b>Name:</b>	<b>Date:</b> <b>Test/Activity:</b>
<b>CONTENT</b>	What is this task about?
<b>MODALITY</b>	What are the “languages”?
<b>THE COGNITIVE FUNCTIONS:</b>  <i>input</i>  <i>elaboration</i>  <i>output</i>	Which are cognitive functions involved in this task?
<b>THE COGNITIVE OPERATIONS</b>	Which cognitive operations are required in this task?
<b>LEVEL OF COMPLEXITY</b>	What is level of complexity (elements number, colors, tables, graphs... on the page)?
<b>LEVELS OF ABSTRACTION</b>	Is this a concrete or abstract task? What is the level of abstraction?

<b>LEVEL OF EFFICIENCY</b>	What is the level of performance that I expect from pupils?
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(Feuerstein R., Feuerstein R.S., Falik e Rand, 2008)

2. The **lesson plan**: in stages four and seven the children work individually. In all other stages the teacher and the children work together to identify the elements and objectives of the task and they discuss strategies to solve the task. This part is a spoken lesson. At the end of the task the teacher helps the children to generalize what they have learned in other situations.

TABLE 2  
The Lesson Plan

<b>LESSON PLAN</b>
1. Overview of observation task
2. Identification and precise definition of objectives
3. Prediction for any difficulty 'and anticipation of possible strategies
4. Individual work and individualized mediation
5. Discussion, analysis of strategies, processes and errors
6. Clarifying the specific terms
7. Individual work and individualized mediation
8. New discussion on strategies, processes and errors
9. Generalisation

10. Bridging

(Vanini, 2003)

3. The **list of cognitive functions**: this list of intellectual roles is very important for monitoring children’s cognitive progress.

**TABLE 3**  
The list of cognitive functions for teacher

INPUT	ELABORATION	OUTPUT
Clear perception	Accurate definition of the problem	Using clear and precise language
Systematic exploration	Selection of relevant cues	Thinking things through before responding
Precise and accurate labeling	Internalization of information	Waiting before responding
Well-developed orientation in time and space	Planning behavior	Staying calm
Conservation of constancies	Broad mental field-remembering	Precision and accuracy in communicating data and information
Capacity to considerer more than one source of information	Recognizing and understanding relationships	Clear visual transport
Need for precision, accuracy and completeness in data gathering	Spontaneous comparative behavior	Adequate verbal tools
	Categorizing	Projection of virtual relationship
	Inferential-hypothetical thinking	
	Using logic to arrive at and defend conclusion	
	Spontaneous summative behavior	
	Adequate verbal tools	

(Feuerstein R., Feuerstein R.S., Falik e Rand, 2008)

In my research I created an easier list of cognitive functions for the children to allow them to self-monitor their cognitive progress.

TABLE 4  
The list of cognitive functions for students

I LOOK THE TASK	I THINK THE TASK	I DO THE TASK
Attention and concentration	To define the problem	To communicate clearly
Staying calm	To identify important data	Be accurate
To observe	To expand mind's space	To control movements
To listen	To compare	To overcome block situations
To read	To reason	Be sure of themselves
To understand what I observe, listen and read	To plan	
To specifically name	To "imagine vision"	
Orientation in space and in time	Be sure that the answer is right	
	To predict consequences	
	To communicate the need for help	
	To find the key concepts	

(Vedovelli, 2014)

4. The **parameters of learning mediation**: The teacher has to use this intercession during the lesson to promote learning.

Main mediations are: intentionality, mediation of transcendence and of meaning. Other mediations are linked to occasions that occur during the lesson.

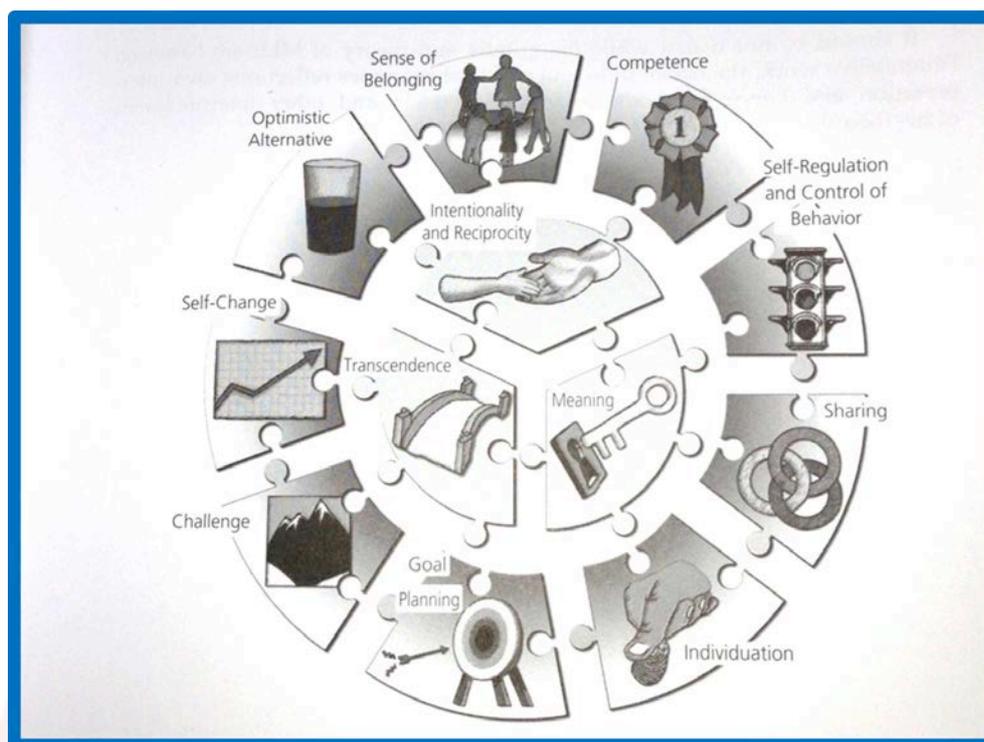


Fig 1. The mediation criteria (Mentis, M., Dunn-Bernstein, M. & Mentis, M., 2008)

### Criticism

The principal criticism of Feuerstein's method lies in the insufficient scientific evidence about the effects on school performance (Bradley, 1983; Moseley et al., 2005), which makes very difficult to predict the transfer effects. The majority of criticism has focused precisely on this point (Campione & Brown, 1987; Bransford, DelClos, Vy, Burns & Hasselbring, 1987; Loarer, 1998; Loarer, Chartier, Huteau & Lautrey, 1995).

This research aims to contribute to the question of the transfer process and we are looking at how IE promote the academic success.

Romney and Samuels (2001) conducted a meta-analysis about the results obtained from controlled studies (in english) on the program before 2000. After the initial year of intervention, academic performance results showed some improvement, but many were modest and in some cases inconsistent. The research shows that the process has the ability to improve more than the behavior, but that are not transferred in the school environment. This result reinforces observations identified by other researchers. For example, Loarer, Chartier, Huteau and Lautrey (1995) have shared: *“Des effets [...] ont été obtenus sur certains test d'intelligenza, mais pas ou tres peu sur les épreuves de personnalité, et il n'a pas non plus obtenu de transferts consistants aux résultats scolaires”*(p. 168).

This study merges the hypotheses of Jensen and Singer (1987) and Büchel (2007). According to Jensen and Singer transfer problems may be impacted by a lack of coordination between the school curriculum and the IE. The child's effective functioning requires both cognitive assistance and skills on which they can be applied.

The acquisition process alone will not impact cognitive function, but if a student does not receive material on which he can enhance his learning efforts with IE, no progress is likely to be made.

According to Büchel, attempting to intervene with a learning issue can take a long time. However, any cognitive program must understand that educational institutions cannot easily provide 300 hours teaching to apply the program. The problem might be different if the program is applied as a preventive measure. The school should introduce metacognitive elements and include the concept of "teach how to learn" in a systematic way during the school year.

We believe that integrating these principles to the curriculum will help to overcome the dichotomy between "content-cognitive ability" and the transition from an instructive education to a formative education. Feuerstein's educational tools, such as the lesson plan, the cognitive map, the list of cognitive functions and criteria for mediation, in the hands of a mediator, can promote continuous analysis of a pupil's abilities and his potential. Then schools can conduct an analysis of the knowledge and skills acquired and track the transfer of cognitive skills to the areas of academic content.

## **Research study**

### **Goals**

The goal of this research study was to determine the Instrumental Enrichment's strengths and weaknesses in teaching pupils of the Primary School. In particular, we investigated the following aspects of learning:

- whether and to what extent Feuerstein's educational tools can be integrated into the school curriculum and significantly affect pupils' performance and the quality of teachers' learning mediation;
- the extent to which the quality of teachers' learning mediation affects academic performance.

### **Hypothesis**

The assumption of this research is that Feuerstein's program does not positively influence academic performance if it is not integrated into the school curriculum.

It is thereby assumed that if the Feuerstein principles of mediated learning are applied to school activities, a *neuro-curriculum* can be built, resulting in a significant improvement in academic performance.

Vertical functions are specialized functions, are expressed in well-defined domains, are very sensitive to learning, change dramatically during the course of development, and are visible because they are associated with performance. In contrast, transversal functions are not specialized functions, are not domain-specific, change slowly, and are not visible because their role cannot be analyzed separately from performance. Vertical cognitive functions are also called "skills", and can correlate with well-defined areas such as motor skills, language, graphic-expression skills, reading, writing, and arithmetic. Transversal functions are "invisible", but are essential to cognitive activity and are inextricably linked to the task. These functions include

recognition, categorization, selection, planning, decision-making, representation, and control (Cornoldi, 1999).

The goal of this research study was to determine if application of Feuerstein's educational mediation principles and tools to the school curriculum facilitates the full integration of vertical and transversal cognitive functions, thereby promoting school success and the student's full academic development.

## Method

### *Participants*

This research study involved four fourth grade classes in Primary School over the course of two school years (2013-2014 & 2014-2015). Specifically, 82 students, 4 teachers/mediator IE, and an IE mediator outside the school context were included.

### *Participant selection*

The Authorized Feuerstein Centre from Sardinia provided a list of teachers trained in IE from the province of Sassari. From this list, we extrapolated teachers who worked with the third grade class. Then, six classes were selected where one teacher was trained on the Feuerstein method, but only five teachers agreed to participate in this study. Since we valued keeping homogeneity of school performance and quality of mediation by pre-test, one class was eliminated. Table 5 shows the tests results of the pre-test given in May 2013 regarding reading comprehension, listening comprehension, writing, numeracy, reasoning, prerequisite study skills, metacognitive study skills, and praxis skills.

Table 5  
Pre-test of basic and transversal skills

		N	Mean	Std. Deviation
<b>Reading comprehension</b>	Class group 1	19	8.32	1.701
	Class group 2	21	8.00	1.975
	Class group 3	16	7.56	2.476
	Class group 4	24	8.29	2.074
	Class group 5	18	8.61	1.501
<b>Listening comprehension</b>	Class group 1	19	8.89	1.595
	Class group 2	21	9.33	1.354
	Class group 3	16	9.13	1.586
	Class group 4	24	9.29	1.488
	Class group 5	19	9.53	1.577
<b>Writing</b>	Class group 1	19	1.63	.496
	Class group 2	21	1.52	.680
	Class group 3	16	*1.44	.512
	Class group 4	24	1.96	.690
	Class group e 5	18	*2.00	.333

<b>Numeracy</b>	Class group 1	18	17.50	2.834
	Class group 2	21	18.29	2.261
	Class group 3	16	17.38	3.423
	Class group 4	24	18.17	1.903
	Class group 5	18	19.11	1.491
<b>Reasoning</b>	Class group 1	18	20.28	4.322
	Class group 2	21	20.71	4.244
	Class group 3	18	22.44	4.693
	Class group 4	22	20.45	6.231
	Class group 5	18	21.89	2.988
<b>Prerequisites study skills</b>	Class group 1	19	8.42	2.411
	Class group 2	21	9.24	2.256
	Class group 3	16	*7.69	2.915
	Class group 4	24	9.08	2.302
	Class group 5	18	*10.22	2.074
<b>Metacognitive study skills</b>	Class group 1	19	3.84	1.068
	Class group 2	21	3.43	1.660
	Class group 3	16	3.06	1.289
	Class group 4	24	3.79	1.215
	Class group 5	18	3.56	1.199
<b>Praxis skills</b>	Class group 1	19	8.00	2.544
	Class group 2	21	6.62	2.872
	Class group 3	16	7.11	3.445
	Class group 4	24	6.73	3.467
	Class group 5	18	7.33	2.086

The statistical analysis showed a significant difference between the Class group 3 and Class group 4 relative to the prerequisite study skills test (ANOVA:  $F(3,4) = 8.684$ ,  $p = 0.21$ ). For the writing and praxis tests, a non-parametric test was used for different independent samples, and the Kruskal-Wallis H test was used to determine the difference in independent samples drawn from the same population. The analyses revealed a significant difference in the writing test results between the groups tested (Kruskal-Wallis H Test: Chi-square = 14.685,  $df = 4$ ,  $p = 0.005$ ). The means reported in Table 1 show that Class group 5 reported the highest score. It repeated the text excluding this group from the origin school variable (Kruskal-Wallis H Test: Chi-square = 7.731,  $df = 3$ ,  $p = 0.052$ ). The results indicate that the Class groups 1, 2, 3, and 4 belong to the same population regarding the writing and praxis tests, even if the writing test was placed very close to the confidence level.

Table 6 shows the results of the metacognitive, motivational, and socio-emotional scores awarded by teachers in the observation grid.

Table 6  
Pre-test of metacognitive, motivational, and socio-emotional attitudes

	Class group 1		Class group 2		Class group 3		Class group 4		Class group 5	
	Mean	Std. deviation								
<b>Interp. relations.</b>	10.37	1.422	9.86	2.393	8.94	2.711	9.40	1.555	9.45	1.276
<b>Respect</b>	9.63	2.338	8.76	2.965	8.50	2.956	9.00	1.803	8.35	2.390
<b>Adaptability</b>	9.53	1.349	9.95	1.884	9.33	2.544	9.76	1.091	9.95	.887
<b>Participation</b>	*9.32	2.358	8.76	2.791	8.44	3.148	8.00	2.217	*6.45	1.986
<b>Responsibility</b>	9.89	2.052	8.67	2.671	8.83	2.915	9.16	2.035	8.30	2.203
<b>Engagement</b>	9.63	2.499	9.43	2.271	8.22	3.209	9.16	1.930	8.95	1.877
<b>Attention</b>	9.42	2.589	8.90	2.625	8.67	3.029	8.40	2.533	8.15	2.059
<b>Organization</b>	9.68	2.689	9.10	2.488	8.17	3.294	8.96	2.245	8.30	1.867
<b>Autonomy</b>	9.00	2.749	8.95	2.312	8.67	2.787	8.76	1.393	7.35	1.496
<b>Motivation</b>	9.63	2.060	8.67	2.033	8.67	2.590	8.64	1.800	8.55	1.432
<b>Control</b>	*9.79	1.932	9.10	2.488	8.67	3.199	8.84	2.192	*7.10	1.071

For these variables, the Kruskal-Wallis H test was applied for different independent samples. The statistical analysis revealed a significant difference between Class groups 1 and 5 with respect to the participation variables (Kruskal-Wallis H test: Chi-square = 13,535,  $df = 4$ ,  $p = 0.009$ ) and control variables (Kruskal-Wallis H test: Chi-square = 16,068,  $df = 4$ ,  $p = 0.003$ ). Even in this case, we repeated the test excluding the group class 5 and we have verified that the class groups 1, 2, 3 and 4 belong to the same population with respect to the student's metacognitive, motivational and socio-emotional attitudes.

Given these results by ANOVA and the Kruskal-Wallis H test, we decided to exclude the Class group 5 from the study, and to include the remaining four classes. There were no significant differences, however, in the quality of teachers' learning mediation. The role attribution to groups, experimental or comparison, was not random. In fact, only two class groups accepted the treatment, and the remaining two assumed the role of comparison groups. The pairing between experimental and control groups, however, has been attributed to random distribution.

### Procedure

This research study fits into the quasi-experiment typology. The factorial design provided four independent groups corresponding to four classes, two experimental and two comparison. The two experimental groups were subjected to two different types of treatment, as shown in Table 7. The two comparison groups followed the conventional curriculum.

Table 7  
DESIGN FACTOR BETWEEN INDEPENDENT GROUPS

GROUPS	TREATMENT 1	TREATMENT 2
EG 1: 24 students	3 hours of IE weekly substitute for 3 hours curriculum	Principles and tools of learning mediation integrated into 13 curricular activities in a year
EG 2 : 20 students		Principles and tools of learning mediation integrated into 13 curricular activities in a year
CG 3 : 20 students	Coventional curriculum	
CG 4 : 18 students	Conventional curriculum	

EG 1, submitted to the Instrumental Enrichment Program for a total of about 70 hours during the first year, worked with the following the first-level tools:

- Organization of dots
- Analytic perception
- Illustrations
- From Empathy to Action

The instruments were chosen in agreement with the classroom teachers, taking into account the annual program that the students need. In particular, teachers chose to strengthen some specific cognitive functions such as:

- Systematic exploration
- Need for precision, accuracy and completeness in data gathering
- Planning behavior
- Inferential-hypothetical thinking
- Categorizing
- Adequate verbal tools

This program was administered by the author, who has served as a Feuerstein mediator since 2004. The classroom teachers, however, formed at the IE, and have applied the principles and tools of mediation of learning in 13 curricular activities

during the first year. They were guided and supervised every 15 days. In particular, they were supported in the following tasks:

- Construction of educational units in accordance with the Cognitive Map principles;
- Lesson management according to the scheme developed by Feuerstein;
- Analysis of students's deficiency cognitive function;
- Application of the learning mediation criteria in the educational relationship.

The teachers were monitored through both classroom observations and video recordings. The four class groups involved in the research study were subjected to post-testing at the end of the first and second school years.

Table 8  
ASSESSMENT IN INTERRUPTED TIME SERIES

	Pre-test	Treatment (1° school year)	Post-test	Treatment (2° school year)	Post-test
<b>EG 1</b>	O1	X1	O2	X1	O3
<b>EG 2</b>	O1	X2	O2	X2	O3
<b>CG 3</b>	O1		O2		O3
<b>CG 4</b>	O1		O2		O3

#### *Assessment tools*

Three assessment tools were used:

1. Q1 VATA: an assessment battery by the MT GROUP (De Beni, Zamperlin, Friso, Molin, Poli e Vocetti, 2005), used to explore basic and cross skills, including reading comprehension, listening comprehension, writing, study skills, reasoning, numeracy, and praxic skills. It also includes an observation grid to assess metacognitive, motivational, and socio-emotional attitudes.
2. ASSESSMENT QUALITY OF LEARNING MEDIATION by Carol Lidz (Lidz, 1991) adapted to the group class. The Mediated Learning Experience (MLE) Assessment Scale by Carol Lidz provides a tool to assess the mediation degree and quality that characterizes the interactions between a mediator and a child. It is used for children aged 2 to 5 years, but is potentially adaptable to a wider age range. It was developed to meet various needs:
  - to consider the multiple factors that occur within teaching and parenting relationships that can affect a child's cognitive development;

- to monitor the progress and to evaluate the effectiveness of educational intervention;
- to develop a profile of mediators' strengths and weaknesses.

This scale is intended to provide a behavior assessment of mediators that may be relevant for a child's cognitive development.

Table 9  
ASSESSMENT QUALITY OF LEARNING MEDIATION

MEDIATION	SCORE	NOTE
Intentionality and reciprocity	0   1   2   3	
Mediation of meaning	0   1   2   3	
Mediation of transcendence	0   1   2   3	
Sharing child's experiences	0   1   2   3	
Sharing teacher's experiences	0   1   2   3	
Competence (regulation of the task)	0   1   2   3	
Competence (lode/encouragement)	0   1   2   3	
Competence (challenge)	0   1   2   3	
Psychological difference between child and mediator	0   1   2   3	
Psychological difference between subjects	0   1   2   3	
Answer to child's needs	0   1   2   3	
Emotional involvement	0   1   2   3	
Change	0   1   2   3	
Regulation and control of behavior	0   1   2   3	

0 = no mediation; 1 = incostant mediation; 2 = constant mediation  
3= constant mediazione with elaboration

3. FOCUS GROUP: this will be proposed at the end of the second year treatment, involving, at different times, the people directly and indirectly involved in research, such as students, teachers, and parents.

## Results

Does Feuerstein's methodology, when integrated into the school curriculum, have a significant impact on students' academic performance and on the quality of teachers' learning mediation?

We used different statistical analyses for parametric variables and nonparametric variables: for parametric variables, the *t-test* was used and for nonparametric variables, the *Mann Whitney test* was used. The analysis was performed for all tests in order to verify if there were significant differences between experimental and control groups. The data analysis collected at the end of the first year is still in progress; therefore, we only have partial results at this time.

This study compared EG 1 that used two treatments, with CG 3 that used the conventional curriculum as parametric variables, including reading comprehension, listening comprehension, numeracy, reasoning, prerequisite study skills, metacognitive study skills, and study skill performance. There were no significant differences between the two groups (fig. 2).

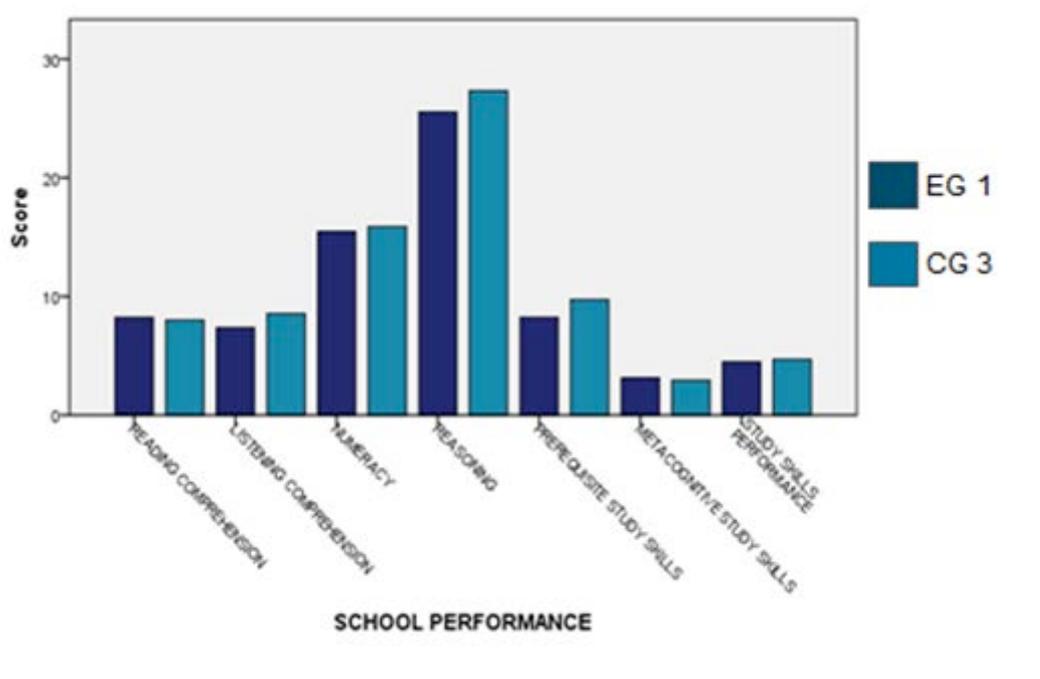


Fig. 2. Comparison between EG1 and EG3  
 Similar results were obtained for EG 2 and CG4.  
 There were no significant differences between the two groups (fig. 3).

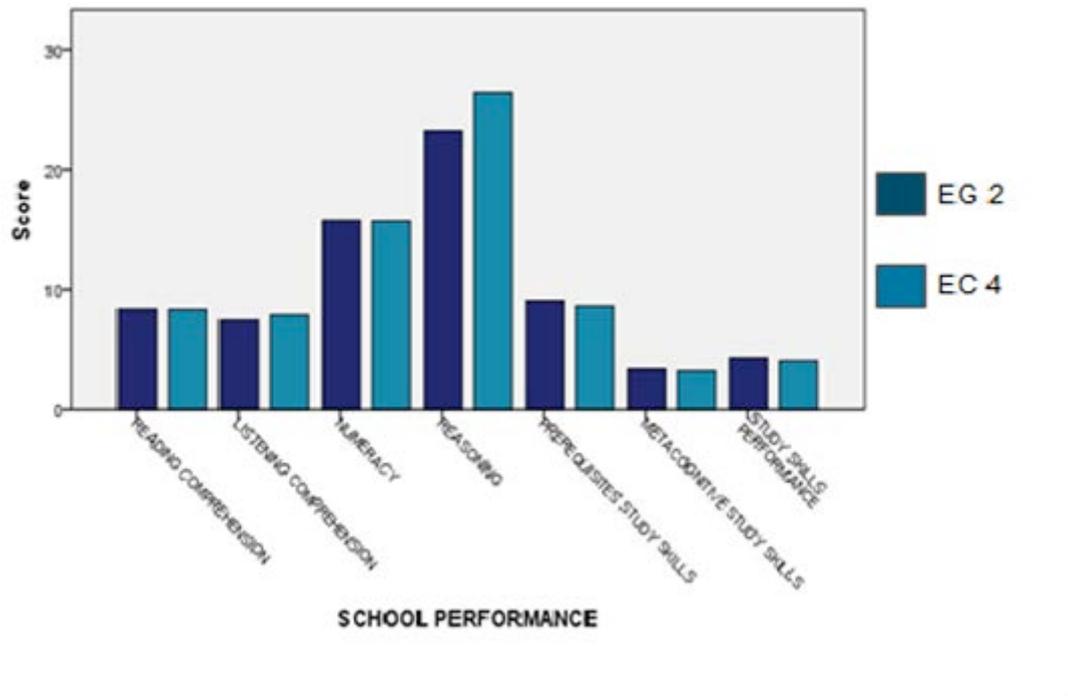


Fig. 3. Comparison between EG2 and CG4

The most interesting result was the assessment of teachers' mediation quality. It compared teachers from EG 1 with teachers from CG 3. Teachers in EG 1 had the highest score in five mediations, whereas teachers in the control group had the highest score in only one mediation (fig. 4).

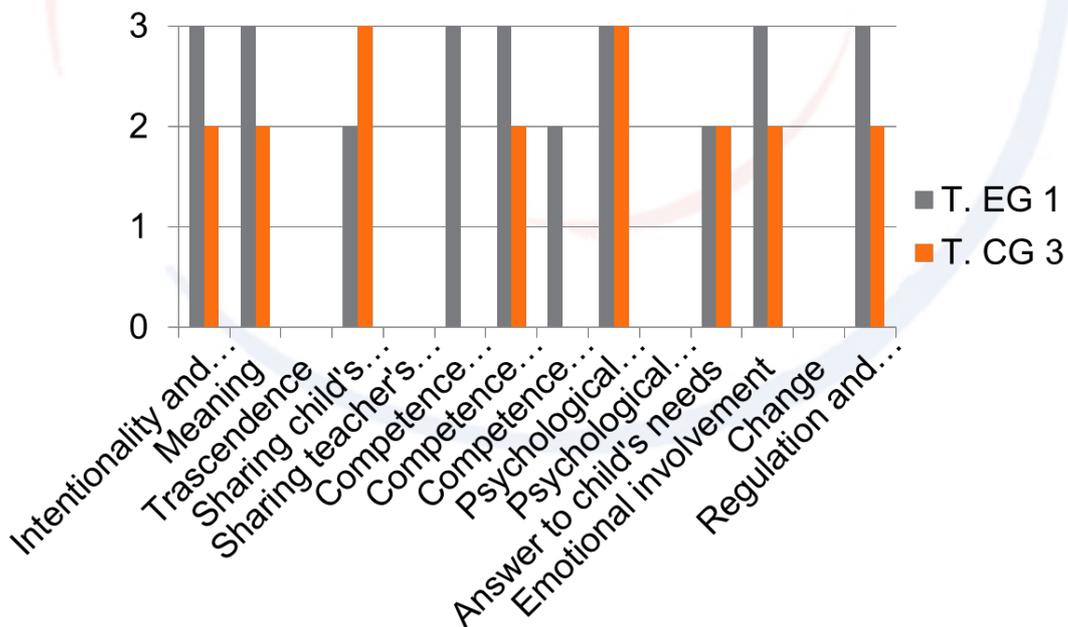


Fig. 4. Quality of teachers' mediation

There were significant differences between teachers from EG 2 and from CG 4. Specifically, teachers in EG 2 had the highest score in more mediations (fig. 5).

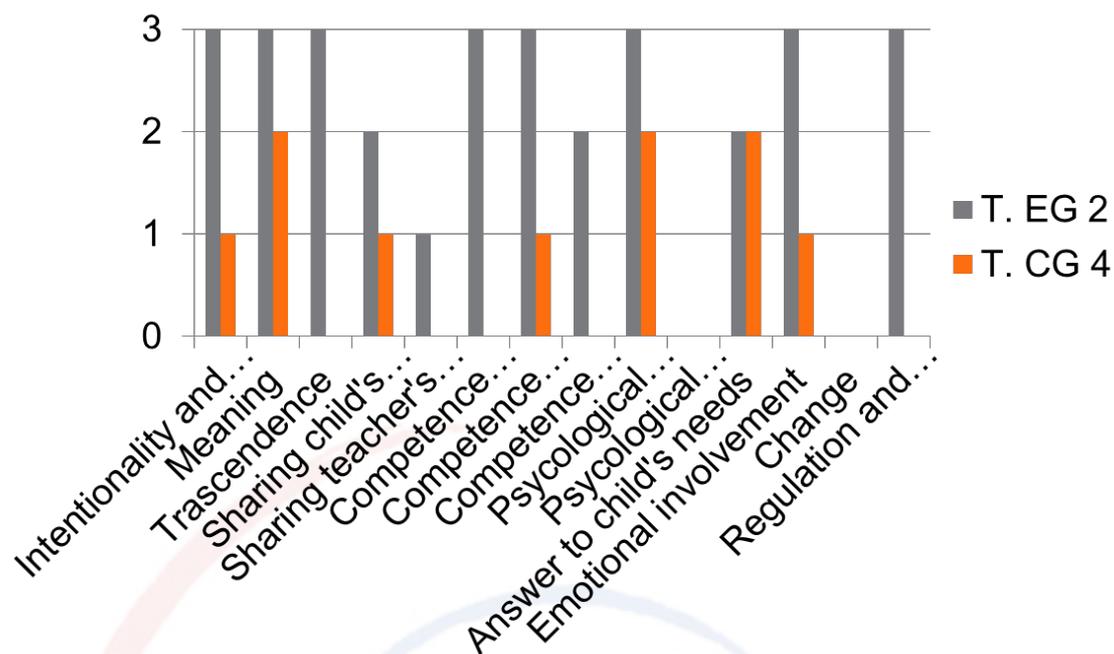


Fig. 5. Quality of teachers' mediation

These results, although incomplete, showed that the quality of teachers' mediation improved in the two EG, but academic performance did not improve.

## Conclusions

This research project aimed to integrate a cognitive education program; namely, the Feuerstein method, in the Primary School curriculum, and to measure the effects on students' learning and teaching quality. The main results that we expected to see were an improvement in students' school performance and in the quality of teachers' learning mediation.

The first statistical analysis conducted on the data collected in the first year did not show a significant difference in students' performance between the experimental and control groups. In contrast, we observed very interesting results regarding the quality of teachers' learning mediation. At the end of the first year, the teachers in the experimental group had higher scores than those in the control group in many mediations. This shows that it is necessary to potentiate students' treatment.

Regardless of the results "...cannot deny that the approach Feuerstein include declarations simple and understandable that allows the transfer of knowledge through concrete pedagogical acts" (Büchel, 2007). Using the principles and tools of Feuerstein's method, we experienced the development of a *neuro-curriculum* in which students can "shop" while they learn, can monitor their improvement, and with the teacher's guidance, can automate effective cognitive paths.

The Feuerstein's theoretical and didactic proposal is placed in the complex society horizon. The educational tools born of his educational experience responding to the training needs of the information and knowledge society: *to teach how to learn*. We

hope that the results of this and other research studies open the possibility of profoundly rethinking the curricula and teaching methods in all school grades.



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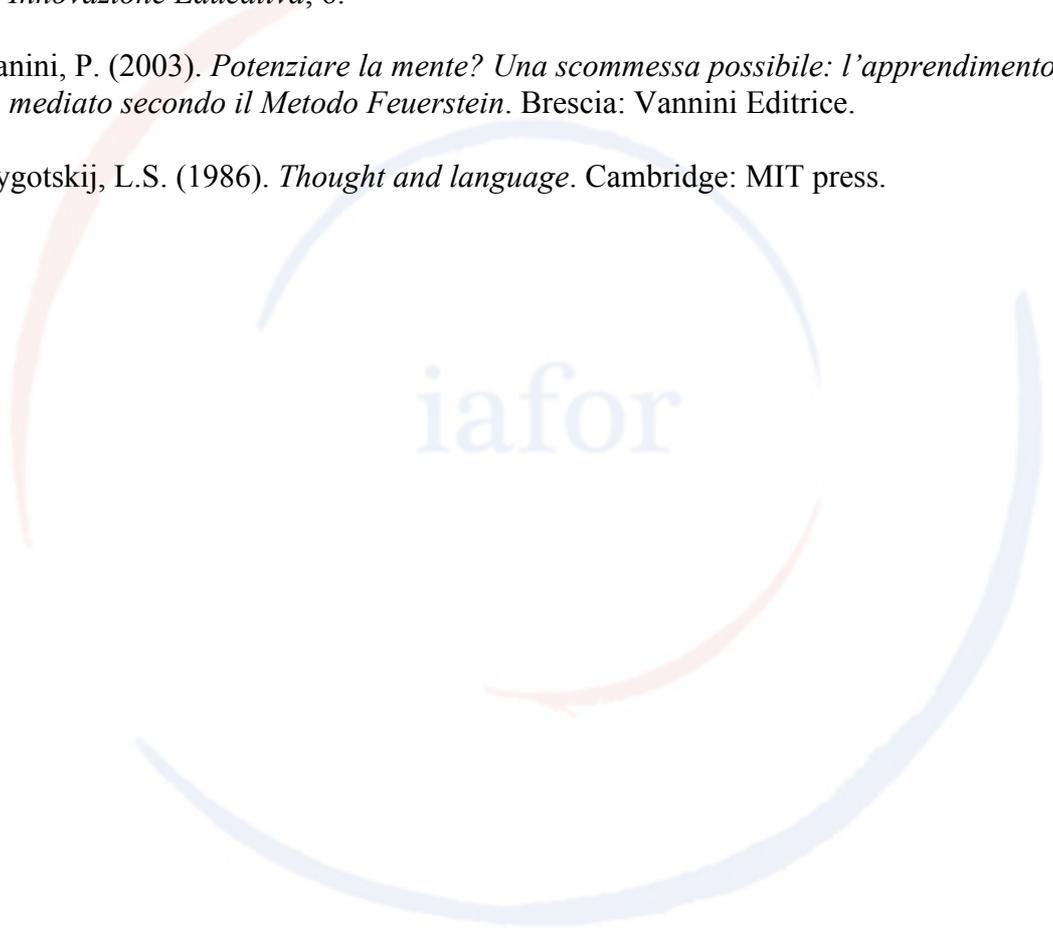
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The logo for 'iafor' is centered on the page. It consists of the lowercase letters 'iafor' in a light blue, sans-serif font. The text is enclosed within a circular graphic composed of two overlapping, semi-transparent arcs: a red one on the left and a blue one on the right, which together form a partial circle around the text.

*Education after the Arab Spring: Alternative  
Philosophy to Develop Awareness towards the "Other"*

Heyam Loutfi ElZein, Rafik Hariri University, Lebanon

The European Conference on Education 2014  
Official Conference Proceedings

**Abstract**

Young children of Arab countries after the Arab Spring and especially the Lebanese are, unfortunately, experiencing great political pressure, conflicting ideologies, humanistic annihilation, and are becoming a laboratory for violence and warfare, lacking positive relationships, community participation, and responsibility. What can be done to respond effectively to the seriousness of this problem? What is needed is a foundational system of values that the communities have to be aware of. Based on these values we have to put mechanisms and guidelines for ourselves so as to have a mutual acceptance and cooperation between the entire world's ideologies, spiritual movements, and ethical dimensions. In my point of view an evolutionary jump in the consciousness of the Arab families is needed for conflict resolution, anti-racial ideologies, multiculturalism, and techniques of negotiation. This jump as I see it is an education for a culture of peace that will help in developing humanity and communities. To introduce this culture of peace educating holistically, reorganizing the content of the curriculum and its delivery, and empowering caregivers are the ways that awaken the Arab families to the realities of oppression, violence, and suffering. These steps serve as a guide for revitalization of society and coexistence. This will be the focus of this paper. Specific ideas and strategies as well as suggestions will be discussed to bring each step into reality. In the end, a summative idea about the importance of revitalization and the link of these steps will be explored with few recommendations.

Key Terms: Peace education, equity, conflict resolution, social justice,  
multiculturalism

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## 1. Introduction

Young children in the 21<sup>st</sup> century are facing many challenges that are affecting their lives, to name a few: social inequity, political instability, conflicting ideologies, fragile economy, health issues, and migration (The World Bank, 2013). Consequently these children, among other groups, are expected to excel under the pressure of these conflicts in this challenging and fast changing world. Hence, to face the challenges, children need to be equipped with the necessary skills enabling them to be successful citizens contributing to their own good and to the good of their societies and humankind globally.

It is true that young people worldwide share common challenges and basic developmental needs but different aspects of development may be more important in different contexts (Palmer & Zajon, 2010). For instance, Lebanese people have been suffering from unstable political, economic and social conditions for forty years. This unstable period has started with the civil war (1975) that lasted fifteen years, and continues until our present time. In addition, they witnessed and still witnessing major dramatic events such as the assassination of Prime Minister Rafik El Hariri in 2005, the 2006 Israeli war, explosions, terrorist attacks, rise in sectarian divisions, periodic street clashes and the “Arab spring” that created a big turmoil in the Arab world affecting Lebanon among other countries.

Children achieve better outcomes when their diverse strengths, abilities, interests, and cultural practices are understood and supported. Valuing and respecting diversity is vital for children to develop a strong sense of identity. Principles of equity and diversity are linked to children developing a sense of belonging, identity, and wellbeing so that they become effective communicators and confident, involved learners (DEEWR, 2009; DEECD, 2009).

Among all of these events, parents, communities, as well as schools generally do not teach children what peace looks like or that we can live it. Peace education receives little to no coverage in traditional school curricula and materials. Further, when war is covered it is done with a sense of passion and excitement, while peace, when it is included, is portrayed as passive and boring. Even when we look at our curricular materials and try to analyze its content we find that it offers political culture. It often makes it sound as though there is no opposition to war and no human ability to live in peace because humans are by nature, aggressive.

As a result the Lebanese children are, unfortunately, experiencing great political pressure, conflicting ideologies, humanistic annihilation, and are becoming a laboratory for violence and warfare, lacking positive relationships, common identity due to the nation's sectarian segregation and social injustice among the different socio-economic groups (Nahas, 2009; Frayha, 2012). These national challenges coupled with the global ones require from education in Lebanon to plan programs that are culture fair and context specific. In fact, the UNESCO report (2009) concludes that factors critical to the future of education in the world of today and tomorrow should take into account the profile of cultures, values, and circumstances of each region and nation.

Having acknowledged the seriousness of our problems, what can we possibly do to respond effectively? Where do we start? The crisis we face is complex and multidimensional. How might we bring about a meaningful education that could truly lead to a culture of peace?

What is needed is a foundational system of values that the communities have to be aware of. Based on these values we have to put mechanisms and guidelines for ourselves so as to have a mutual acceptance and cooperation between the entire world's ideologies, spiritual movements, and ethical dimensions, in addition to developing an ecological sense of worth, and convictions. In my point of view an evolutionary jump in the consciousness of the Arab families in general and Lebanese family in particular is needed for conflict resolution, anti-racial ideologies, multiculturalism, and techniques of negotiation. This jump as I see it is an education for a culture of peace that will help in developing humanity and communities. To introduce this culture of peace educating holistically, reorganizing the content of the curriculum and its delivery, and empowering caregivers and stakeholders are the ways that awaken the Arab families to the realities of oppression, violence, and suffering. A holistic approach comprising different methods: dialogue, training, awareness raising, advocacy, capacity building, and formation of alliances and network building. These steps serve as a guide for revitalization of society and coexistence.

By revitalization and coexistence, I do not mean refining and improving the old system of education. I mean re-conceptualizing what schools are and how they should function when a culture of peace is introduced to the educational system. Families would interact and react when they acquire skills of dealing, understanding and communicating with the other. It is my intention to prove that when individuals change their level and way of thinking to the way they think, and break the barriers that bind them to the old ineffective structures revitalization and coexistence are attained.

In setting the foundation for revitalization, I suggest some basic steps, which will lead to a better transformation in educational and social system. The first step is introducing a vision of peace education that offers the idea of replacing the archaic relationship that exists between educators, children, and their parents by a more dynamic performance-oriented progress. When this vision is correctly planned and supported by key players and educators then growth is endless. The second step has to do with quality improvement, introducing peace education skills to teachers, and familiarizing them with these skills, the teaching profession will be enhanced, and working conditions will allow the teachers to think, reflect, and interact in professional development activities. In addition, students will develop a positive self-esteem and a positive reaction toward the other and toward learning. To reach this high level of performance, educators must keep on working and offering constant quality improvement thus making it a norm in their organization. The last step has to do with partnership where the stress will be on parental and community involvement. The link that has to be established between the parents, the community and the school will create a difference in the lives of the children.

In this case certain questions have to be answered in order to create a peaceful society with no discrimination and understanding of the other. The first is “what is needed to help children to be physically, socially and mentally accepting and understanding the

other?’ The second, “how to interact with the needs of children and how would be our attitude and behavior when implementing the core values derived from the first question?” Thirdly, “what would be the behavior and attitude of the ‘Other’ when all the community lives by these values?” Lastly, “how do we enumerate and evaluate the achieved standards and performance in order to add or delete goals?” The answer to these questions will be reflected through a vision, quality improvement, partnership and sustainability.

## 2. The Vision

One of the first obstacles that will come up is people's fear of change. Creating or adjusting a vision statement is an unmistakable indicator of imminent change. As important as the vision is, keeping it alive throughout the year is not an easy task. To get the most out of the vision, we must first remove the barriers from making it an integral, vibrant facet of the school and the community.

Peace education could be taken for granted, or it could be reflected through a foundational system of values that ensures a shared existence with different groups. These shared values are not very far from our understanding but we forgot to implement them. Bamburg (1994: 14) notes, "The schools that have been most successful in addressing and increasing the academic achievement of their students have benefited from a clarity of purpose that is grounded in a shared set of core values". If applied they should help in developing humanity and communities:

- All individuals are equal and have same rights and duties.
- Individual's happiness is built on the basis of love that leads to ultimate good and happiness.
- Collaboration and mutual respect are the basis of understanding.
- The true freedom of the individual is built on the knowledge of doing to others what you want others to do to you.
- Promotion of a universal language for communication worldwide, with no melting pot of the language of the other.
- Belief that interfaith and intercultural dialogues lead to unity and after that will lead to universal homogeneity in the world.

Based on these values we have to put mechanisms and guidelines for ourselves so as to have a mutual acceptance and cooperation between all the world's ideologies, spiritual and political movements and convictions. In this situation, I will present six important points that can be considered the essential requirements that every school can follow to achieve peace and justice on its grounds and spread it to all the people on earth. Accepting these points might be the first step to a unified world without problems and without annihilating the other:

1. Mutual understanding through respecting others' individuality.
2. Belief that all people belong to the same Origin and Destination.
3. Faith in the potentials of all the individuals in the community will help in creating a better world ruled by peace and justice.
4. No exclusion and zero reject. All ideologies, religions, sects, spiritual movements and convictions had their origin in their culture and developed on the basis of their cultural beliefs, concepts and values.
5. Testifying and not converting. The believers should present their ideas in an understandable language, that the dialogue between cultures, religions, and

traditions will lead to a better understanding, and to an exchange of values so as to enrich one's faith and the others' faith.

6. Our world is suffering from ecological, economical, social and financial problems. The best way to solve these problems is through global collaboration between religious and faith communities and the world of politics/economics.

These practical reasons will raise the expectations; create energy to change since the focus is on the future with no blame for the past, and generate foundation for decision making.

### **3. Quality Improvement**

As for the second question of our vision, “how to interact with the needs of children and how would be our attitude and behaviour when implementing the core values derived from the first question, the answer will be through quality improvement. Talking about quality improvement, the challenge that we will face is how to make the transition from a traditional system of teaching to a system of various roles and wide variety of tasks to offer a cooperative and comprehensive program in peace education as an equal partner with educational programs. The response will be through empowering the whole constituents of the school starting by administrators, staff, teachers, stakeholders, students and peers and whoever present in school environment.

There is evidence that human beings perform better, will cope more effectively, when they perceive themselves as possessed of inviolable dignity and worthy of unconditional respect (Norcross & Grencavage, 1989). With the continued emphasis on child development, the integration of Maslow pyramid, Cognitive Behaviour Coping Skills Therapy, and Social Ecology model can demonstrate success in helping these people change.

#### **2.1 Teachers' Empowerment**

Lebanese schools are diverse in social class, sexual orientation, gender identity and expression, age, ability, religious background, national and geographical origin, and language and culture. Like schools around the world, the Lebanese schools have become, in the last four years, diverse institutions with some identified trends: younger children are joining schools, in addition to Palestinian children; schools have to enrol Syrian, Iraqi children and children with learning or physical disabilities due to their exposure to traumatic situations (Frayha, 2012).

The thing is how to offer an educational environment that provides equitable treatment and supports identity development, learning and success of all students. Diversifying the curriculum is central in achieving this goal. Further, research shows that a diverse environment enhances the quality of the learning process for all children (Quaye and Harper 2007). As such teachers are in need of assistance to develop skills pertinent to deal with diverse children and diverse topics. To prepare teachers who will be both multicultural persons, practitioners and change agents, I view teaching for social change as teaching for educational equity, social justice, and activism.

To the researcher the first step that has to be done is to improve the well-being of teachers by improving their attitudes towards themselves and towards others: Developing competence, managing emotions, moving through autonomy toward interdependence, developing mature interpersonal relationships, establishing identity, developing purpose, and developing integrity.

Cuban (2001: 26) articulates, "people who develop skills in redefining familiar situations have in their heads more than one way of seeing the world. They have developed their capacity to juggle diverse ways of viewing daily occurrences, to the degree that one can hold in his or her mind multiple ways to see a situation, to that degree opportunity to reframe a problem and dilemma multiply".

Here a question that comes to mind is how to support teachers to reframe their views of diverse learners and challenges that they are experiencing? A response would be quoting Bolman and Deal (1994: 7), who argue that when teachers are able to reframe, they are able to see new possibilities and become more versatile and effective in their responses". Reframing enables the teacher to see a situation from multiple perspectives: managerial level, human relations and political level.

### **3.1.1 Managerial Level**

When it comes to classroom behaviour, and although group stereotyping is a common occurrence, the teacher has to strive to ensure to make accurate statements about people opposed to group stereotyping. Whenever appropriate, discussions of diversity should be encouraged in department meetings, especially with respect to topics such as curriculum, classroom climate, course content, course requirements...

To teach in such environment is very challenging. As a result teachers have to be trained in how to teach diverse learners and to deal with them as individuals with unique abilities and unique challenges (Kuh 2005). In this sense teachers will be as "cultural workers" (Freire, 1998), "border crossers" (Giroux, 1991) or bridge builders across language, social class, racial, cultural differences and academic abilities. As such, all teachers should be trained in the basic skills of psychosocial support, teaching diversity, communication skills, critical thinking... When teachers are trained on these basic skills, they will be able to help students cope with particular challenge in some cases. By applying this, the teacher will be using the first key to peace education: a helping and healing relationship.

### **3.1.2 Human Relations Level**

The human relations level identifies the classroom as a community defined by relationships between individuals with feelings and needs. Like the human resource frame from Bolman and Deal (1994, 1997), it spotlights the social system of the classroom, the caring interactions necessary between teacher and students, and among students. In an effort to foster an environment of equity, teachers have to be aware about their knowledge of different groups other than their own, and learn as much as possible about these groups. Teachers have to understand that marginalized people have the right to define themselves and their own issues, and have to recognize and strive to meet their distinctive needs.

### 3.1.3 Political Level

The political frame acknowledges the power differentials in the classroom and society, and can work to change them. In this case the teacher will be a helper and a facilitator in teaching, learning, and personality developer of the student. In addition, when I stress the importance of acquiring these skills, I am not devaluing teaching and academic skills, nor disregarding the value of knowledge that the teacher has, but I am trying to show that deficiency in interpersonal and intra-personal skills has a negative effect on teaching and learning. Today it is no longer enough for teachers merely to learn how to be sensitive to diverse students and their cultures; they must possess the habits of transformative practice and change agency (Cochran-Smith, 2004; Freire, 1973; Nieto, 2000; Oakes and Lipton, 2007).

### 3.2 Administrators' Leadership

Another important figure that plays a role in creating and developing peace education is the principal and stake holders. If they are supportive, involved, and engaged in what is happening, all the positive powers of students, teachers, teachers' assistants, and counsellors will be unleashed to their fullest. In this situation, they will be facilitators and managers at the same time.

One of the key findings of research carried out on successful leadership in multiethnic schools in England (Walker et al. 2005: 3) was that it is “based on the articulation and implementation of explicit values that promote an agenda of equality, fairness and respect” and that these leaders define their leadership ‘in terms of their commitment to principles of social justice’.

Leaders in education may benefit from ‘auditing’ their own views and encouraging and leading their staff to do the same (Begley 2003). Discussing the leadership of multiethnic schools, Shah (2006: 530) draws on the Muslim concept of *Adab* as a tool for leaders, arguing that this (roughly translated as respect) ‘underpins diverse aspects of relationships, celebrates diversity, supports vulnerability, rejects discrimination (racism!) and promotes innate human dignity’.

#### 3.2.1 Professional development

Professional development in the form of training should be inclusive to all who often act as education developers, caregivers, stakeholders, and the gatekeepers who recruit and interview prospective senior staff (Coleman 2005; Coleman and Campbell Stephens 2009). Mentoring is a particularly useful form of professional development. It can be used for supporting individuals who face the additional difficulties of overcoming stereotypes and prejudice.

The more that a school or other educational institution has integrated its values into the thinking of staff, students, governors and parents, the easier it will be to ensure that a united front is presented to those who are outside the immediate boundaries. It is particularly important that leadership training includes training for social justice and awareness of diversity issues, stereotyping and discrimination.

### 3.3 Students' empowerment

Empowerment can be attained by creating awareness at the levels of mental, emotional and social. The common problems experienced by Lebanese children have to do with the unsafe setting of the country itself, physical, mental and social. As for the physical setting, children are interacting with displaced Syrian and Iraqi's poor general conditions of which hygiene, nutrition, isolation, overcrowding, varied socio-cultural conditions...etc (Frayha, 2012). They are developing a fear of losing some of safety that leads in its turn to anxiety, depression, low mood, low-self esteem and emotional behaviour disorder. As a result they turn out to see the displaced as a threat to their existence and so refusing to accept them as normal children like them.

Each of these factors may influence the children in one way or another. The negative effects of the prevalent conditions can be reduced through the holistic integrated program that offers developmental and preventive measures. Thus the provision of adequate prevention and intervention services is both beneficial to the Lebanese children as well as to their peers. To start with, the first thing to do in the provision of intervention program is to apply Maslow's Pyramid of hierarchy of needs. The most important basic needs for the children are:

- Safety, environmental stability and predictability;
- Reliable assistance from persons and settings;
- A sense of being appreciated and cared for, and a desire for relationships that provide emotional sustenance and empathy;
- Services that facilitate self-advancement, self-improvement and autonomy.
- Privacy and autonomy;
- Personal development and respect from others.

When these basic needs are satisfied then the next step is moving to the complex needs those that are related to psychological problems. Factors that may account for psychological problems can be due to lack of coping skills and discrimination, or day-to-day stresses. Moreover, continuous exposure to conflict and threatening events may represent a loss of freedom, and loss of social support, fear of the unknown, uncertainty and fear about the future (Fosket & Hemsley-Brown, 2001). A suggested comprehensive prevention program that is characterized by a number of cognitive, behavioral and social activities will create basis for understanding.

#### 3.3.1 Cognitive activities:

- Assessing the nature and type of skill deficits in every child.
- Increasing the child's ability to cope with high-risk situations including both interpersonal difficulties and intrapersonal discomfort (such as anger or depression)
- Training children to use active behavioral or cognitive coping methods to deal with problems.
- Through simulation, children will develop the skill of self-efficacy and be persuaded by the possibility of change.
- Teach coping behavior through instruction, modeling, directed practice and feedback.
- Teach specific problem-solving strategies.

- Elicit from the significant other some important positive aspects and explore how they can work together to overcome the discomfort.

### **3.3.2 Behavioral and Social Activities:**

Physical activity constitutes an important factor in creating a culture of acceptance and equity. In fact, physically active people tend to have better mental health than their inactive counterparts. The physically active usually score better in regards to positive self-concept, and self-esteem. Physical activity has also been used to treat mental health problems such as depression (Active Living Research, 2009).

Practical ways of enhancing resilience include but not limited to:

- Access to sports and fitness facilities
- Opportunities to participate in the arts
- Opportunities to practice enjoyable and fulfilling use of time, for example involvement in the theatre, arts, music, drama or exercise
- Opportunities for socially useful activity, for example through peer support or community involvement etc...

## **4. Collaboration**

Thirdly, “what would be the behaviour and attitude of the ‘Other’ when all the community lives by these values?” Collaboration between teachers, staff, administrators, families and stakeholders can be grouped into shared core values and respect, proper training, and continued cooperation. Each level depends on and potentiates the other.

In establishing the program of collaboration we need to be cognizant of what really bothers each group if we are going to develop ways of genuine empathy and caring. We have to be aware about the issues and problems that make individuals anxious, such as lack of justice, equality, security, rights, equal opportunities, survival... Emphasizes in this section is on the social ecological model as a form for collaboration where interaction in relationships have to be between the parents and the surrounding community. The researcher suggests horizontal multilateral rather than vertical approaches to service delivery through creative use of volunteers, paraprofessionals, peer support, and social networks, in addition to professional services.

### **4.1 Partnership with Parents/Organizations**

In establishing the program for peace education, we need to be cognizant of what really bothers each group if we are going to develop ways of genuine empathy and caring. We have to be aware about the issues and problems that make individuals anxious, such as lack of justice, equality, security, rights, equal opportunities, survival etc.

Families need help in developing parenting skills that will encourage the kind of conditions that promote cooperation and the development of a positive self-concept and acceptance in their children. Parent involvement in developing a culture of peace is an important assistance to school revitalization and individual coexistence, especially when parents are exposed to different psychosocial support programs and learn the necessary skills relevant to today’s conflicting situation. Harris and Goodall (2008: 286) point out that: ‘parental engagement increases with social status, income

and parents' level of education' and that 'differential strategies are needed to secure the engagement of a diverse range of parents'

Jeynes (2003) asserts that parental involvement positively affects the academic achievement of minority students, higher test scores, regular school attendance, better social skills and improved behaviour, as well as more positive attitude about school, completed homework assignments, graduation and continued education. If you want your school to be a good and safe place, you must enhance family *collaboration*. For example Foskett and Hemsley- Brown (1999: 222) identify the fives Cs: 'consistency, clarity, concern, cooperation and confidence as key components of the interface between the institution and the community'

Parents have to be offered instruction in effective child management techniques to help them with parent-child conflicts. They need assistance in dealing with aggression, developing their children's self- confidence, improving family communication, and getting their children to assume responsibility. So by increasing parents' involvement, building collaborative relationships and providing extended services we move towards making revitalization a reality. Possible programs include films, speakers or discussions for parents and guardians on topics such as bullying prevention, identity development, racial experiences, gender expression, sexuality, learning differences and family diversity.

A core component of anti-bias education is learning to take action against exclusion, prejudice and discrimination; it can be especially powerful for students to do this in their own schools and local communities. Research shows that when parents are involved students have higher grades, better attendance, increased levels of self-esteem & motivation, decreased use of drugs & alcohol, and fewer instances of violence (Jeynes, W., 2010). When parents come to school regularly, it reinforces the view in the child's mind that school and home are connected (Horvat, E., Weininger, E., & Lareau, A., 2003).

Certain steps can be done to establish partnership with parents and the community, if implemented it will lead to involvement that is more parental.

These suggestions include:

- Finding out about the needs of parents and communities
- The second, if you cannot bring parents to you, try to go to them. This will allow the educators to get to know the families, their values expectations, and customs.
- A third point is to use positive communication strategies with parents to erase the negative attitude established through experience.
- Fourth, the environment of the school has to become a receptive of diverse individuals, comfortable, and encouraging one. Administrators as well as teachers and key players have to create ways for parents to know how to help in order to create an excellent atmosphere for the children.
- Implementing these, strategies will take time and might be frustrating when response from parents in the beginning of the implementation of the program might not be up to the intended goals. In this situation, creative ways and insistence on cooperation in a positive and gradual way will lead to change.

In general this horizontal cross-training can plant the seeds for the development of awareness, knowledge and appreciation especially if all the working members are receptive to these messages. The triangular relationship established between the parents, staff, NGOs and teachers is the ultimate goal to a just and safe society.

## 5. Sustainability

Fourth question asked in developing the framework for social justice and equity was: “how do we enumerate and evaluate the achieved standards and performance in order to add or delete goals?” The researcher considers four steps to be followed in order to answer this question; implementation of governance, accountability and order, abiding by legislations around the world that stipulate information about dealing with displaced and diverse children and their rights, enhancing partnership with educational organizations and the children’s community and exchanging practices (Brown, 2011; Clark, 2011). The success in delivering all the services needed demands dedicated and well-trained educators, but they in their turn need support and recognition from the administrators. The more this positive environment is maintained the clearer the emotional resilience among children is observed.

Cooperation with community agencies is vital to secure continuity of psychosocial support and to facilitate acceptance of diverse children into the school community (Epstein, 2001). Another factor that leads to sustainability of intervention program is to do continuous evaluation of the program in terms of:

- Respect of children’s rights
- Application of the processes suggested
- Quality of care and equity
- Continued meetings between parents, professionals and teachers
- Quality of the physical and social climate of the child

## 6. Summary

Lebanese children are the most valuable asset. We have to provide support for their personal, educational and emotional needs, taking into consideration the stress and vicissitudes of life. Offering education for a culture of peace extends beyond techniques of negotiation and conflict resolution, beyond multicultural and anti-racist curricula, even beyond spiritual practice: it is an education for a new, expanded worldview, an evolutionary leap in consciousness. Skills, knowledge, strategies and cooperative community are the key elements for sustaining integrity, multiplicity and social justice in educational organizations. Whether the individual is a teacher, administrator, parent or student there is a need for empowerment, guidance and counselling, support and practice. This paper was intended to offer a framework to help facilitate the important work of promoting equity and social justice for the benefit of the Arab community in general and the Lebanese children in special.

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## *Can Computer Science Students Do Without the Desktop?*

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### **Abstract**

Prompted partly by potential space release and reuse, and also by international trends in moving away from desktop computer learning environments and traditional classroom set-ups, we have begun exploring alternatives to computer science (and other) students' use of fixed desktop computers in traditional computer laboratory configurations. Although many studies and reports detail how mobile computing, especially tablet and smart phone use, have been replacing desktops, certain disciplines (particularly engineering and sciences) have continued to rely on the greater computing power available in the desktop. This has resulted in, amongst other things, a continued enforcement of older classroom seating arrangements where rows of individual students face a single teacher at the front --- an arrangement widely viewed as non-conducive to optimal student collaboration and learning. This paper looks at a new institution of higher education in the People's Republic of China, HEI-A, and examines how suggestions of reallocation of computer laboratory space are being received by some students and staff within the computer science department.

Keywords: Learning Environment, Mobile Learning, Higher Education

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## 1. Introduction

We have witnessed many changes in education, including the reform of classroom practice made possible by evolving computing device use, particularly personal mobile devices and the Bring Your Own Device (BYOD) trend (Sangani 2013).

With the advances in pedagogical practice that we have seen, an observed irony is that many of these changes which have been facilitated by computer science (such as the mobile devices) have impacted mainly on disciplines outside of computer science and engineering — computer science students, for example, are often still constrained in the devices that they can use, sometimes still needing the greater processing power of the older desktop computer set-up, often configured in a traditionally laid out classroom of rows of computers facing a single teacher's computer (Hollingsworth & Powell 2011).

The economy of the People's Republic of China (PRC) has been developing very strongly, and linked to planned future economic success are recent reforms in higher education (HE), including an opening up of the sector to foreign input. The institution under study, HEI-A, one of the newly introduced Sino-foreign partnerships, has developed very successfully over the ten years since its establishment in 2004. HEI-A has been able to introduce many innovations, and has grown both significantly and quickly. The rapid growth at HEI-A has led to pressure on space allocation and usage, a phenomenon common to many other educational institutions. This pressure has included recent suggestions that perhaps the time has come to cease provision of larger computer laboratories containing only desktop computers, and reassign these spaces.

The rest of this paper is structured as follows. In Section 2, some background information is presented, including China's economic growth, and some recent changes in Chinese higher education. The institution involved in our study, HEI-A, is also introduced. Section 3 describes how student use of computing devices has been changing, which has partly prompted an examination at HEI-A of how current computer laboratory space might be revised. Section 4 looks at how computer science students, amongst others, face challenges in adoption of many of the modern smaller devices, and, by extension, how they may not be able to benefit as easily from some advances in classroom techniques. Some initial reaction to computer laboratory reallocation suggestions from HEI-A computer science students and staff is also included. Finally, Section 5 concludes the paper.

## 2. Background

### 2.1 PRC Economic Growth

As discussed in Towey (2014), China has seen incredible economic growth over the past thirty years, fuelled by a manufacturing industry boom that, it has been suggested, may now be coming to an end (The World Bank 2013). It has been argued that the best hope for continued economic growth may involve the Chinese economy changing from manufacturing to a more service-oriented economy (Brown 2012, Morrison 2013, Phillips 2012). A challenge to this is a predicted shortage of appropriately skilled workers, especially in terms of tertiary-level education (Marsh 2012, Ray et al. 2012): Figure 1 shows the predicted 2020 Chinese labour demand and

supply (by education level), according to which the PRC will face a shortage of university and vocational labour of about 24 million workers (Chen, Mourshed & Grant 2013). To address this problem, China has already initiated strategies to enhance its HE provision.

## 2.2 Changing PRC HE Landscape

Higher education in the PRC refers to that “conducted on the basis of the completion of senior middle-school education” (PRC MoE 1998). It has been noted that an interesting feature of recent PRC educational reforms has been the focus on tertiary level, rather than on primary or secondary (Li et al. 2012). These reforms have included a number of projects aimed at enhancing the quality and prestige of some of China’s universities, such as: Project 985, Project 211, and the C9 League (CEC n.d., Lixu 2004, Sainsbury 2009, THE 2011).

Since joining the World Trade Organisation (WTO) in 2001, the PRC has allowed foreign investment in the education sector in the form of Chinese-foreign cooperatively-run schools (CFCRS), which require a partnership with a Chinese institution. By 2013, there were 775 approved Sino-foreign projects (including joint venture universities and programmes leading to foreign degrees) (QAA 2013, p.6), and estimates of over a thousand foreign institutions expressing interest in establishing private universities in the PRC (Tsang 2013, p.655).

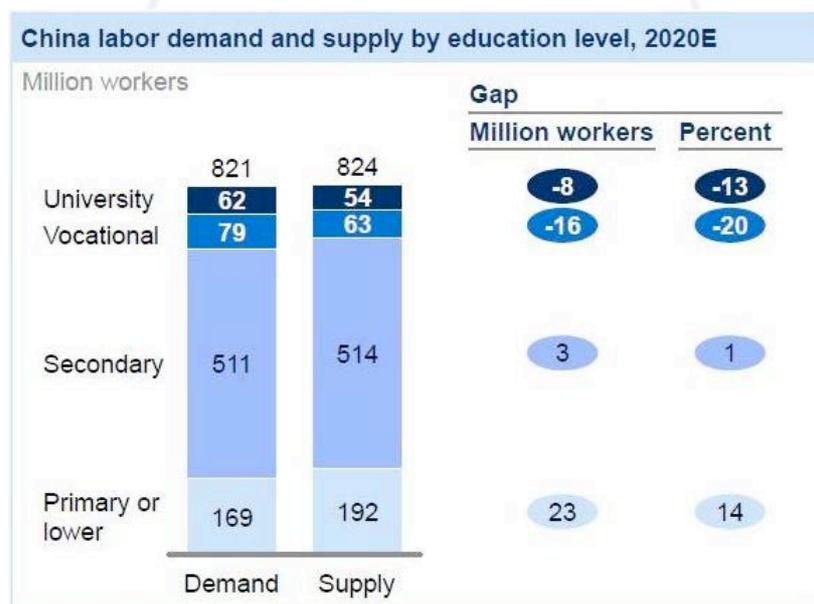


Figure 1: Predicted 2020 PRC labour demand and supply, by education level (from Chen et al. 2013, p.4).

## 2.3 HEI-A

The institution under study, HEI-A, was one of the first Sino-foreign partnerships resulting in a tertiary institution. It was established in 2004, and has since then grown in both student numbers and provision of academic programmes. Due partly to its successful development, HEI-A has recently faced space challenges, in particular, the pressure to schedule classes and to house staff and tutorials has meant that the institution has had to look again at its allocation and usage of all university spaces.

One suggestion currently being examined by the administration at HEI-A is to reduce the number of large computer rooms currently housing desktop computers. It has been argued that these computer rooms, which have been laid out in a traditional configuration of rows of computers on desks facing towards a single teacher's computer and desk at the front, are no longer necessary, and would represent an opportunity to reuse significant space on campus. Some of the arguments for reducing the desktop computer room provision include the reported changes in how students are using and owning computing devices.

### **3. Changing Student Computing Device Use**

Over the past twenty or so years, we have witnessed many changes in how university students (and others) have made use of computing devices. In the late eighties and even early nineties, most students made use of the university provided desktop computing environments (Allan 2001). In the nineties, as laptop computers became more affordable and accessible to students, we saw more students making use of these more portable devices, although, often in addition to, rather than in place of the university desktops.

A smaller version of the laptop, often referred to as the netbook (Descy 2009), began to appear over the last ten years. Typically, the netbook was less powerful than the laptop, but was also usually considerably cheaper, and more portable (Demb, Erickson & Hawkins-Wilding 2004, Surry, Stefurak & Gray 2010). Interestingly, it seemed that few students actually used netbooks instead of their laptops — Smith & Caruso (2010) found that only about 13% of students favoured the netbook over the laptop; while Cassidy et al. (2011) found only about 8%.

Perhaps the most well-known innovation in mobile computing devices has been in the advent of the iPad<sup>1</sup>: the tablet computer. Tablet computers — and their smaller cousin, the smart phone — have become ubiquitous devices. Johnston et al. (2013) reported that more than 85 million iPads had been sold by 2013, and predicted that this would rise to over 377 million by 2016. Similar devices (such as the Amazon Kindle Fire, Samsung Galaxy, Google Nexus and Microsoft Surface) have also reportedly seen a significant increase in their adoption (Johnston et al. 2013). Although many of the tablet devices lack the computational power of the desktop (or even the laptop or netbook), we have been seeing their processing power grow, and Bradley (2011) has noted that they already suffice for most users' computing needs. The power of the apps (applications, especially those designed to run on mobile devices), and the recent trends for Cloud computing have made it possible for the tablet to replace other computing devices for many students (Hollingsworth & Powell 2011). One of the most exciting things about the tablet devices has been the impact that they have had on the classroom, and on how lectures and classes can be delivered (Eichenlaub et al. 2011, Fischer et al. 2013, Keller 2011, Mang & Wardley 2012).

### **4. Challenges for Computer Science Students**

While we have seen a number of changes in the classrooms of many disciplines, and these changes can be connected to developments in computer science devices, we

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<sup>1</sup> <http://www.apple.com/ipad/>

have also noticed that some disciplines, including computer science, have continued to use older devices and classroom configurations, such as the desktop environment laid out in a traditional classroom arrangement of rows of student desks facing the teacher in the front (Hollingsworth & Powell 2011).

When HEI-A first began investigating the possibility of reassigning the space currently occupied by computer laboratories, some of the experience of other institutions, as reported in the literature, was examined. Current computer science faculty and students at HEI-A were also invited to give their opinion on this proposal, and to offer suggestions for either how best to implement it, or, if against the proposal, to suggest alternative, space-saving initiatives.

The rest of this section presents some of the main obstacles facing a removal of the desktop environment, including when proposing BYOD as an alternative.

#### **4.1 Text Input**

Text input has been identified as a challenge for students using both smart phones and tablet computers, especially when using a virtual keyboard, with interviewees often expressing a preference for traditional keyboards (Chaparro et al. 2010, Edwards & Barnette 2004). Given the large amount of text entry associated with programming and other computer science subjects, the view of computer science students that tablets and smart phones are ill-suited to their needs can be understood.

#### **4.2 Display Size**

As Bradley (2011) also found, reactions from both students and faculty at HEI- A to suggestions of replacing desktop computers with laptops or other devices were met with complaints that the screen size would not suffice. Indeed, in many cases, the larger monitors and displays attached to some desktop computers are augmented by second or third displays to further facilitate programming and debugging.

#### **4.3 Multi-tasking & Processing Power**

Bradley (2011) also found that more efficient multitasking is often needed than is (currently) possible with the smaller computing devices. When using iOS (Apple's mobile device operating system), apps behave differently in the *background* compared with when in the *foreground* due to system limitations, and battery life is also often adversely affected (Apple Inc. 2013). Therefore, for some very intensive operations, common in computer science and engineering, the only computing option is the desktop.

#### **4.4 Collaboration**

One of the major advantages identified with mobile computing devices has been the associated facility in collaboration in the classroom. In computer science, however, because of the greater need to share files and content, many of the current apps targeting, for example, software development, make this kind of sharing and collaboration more challenging. As Mang & Wardley (2012) reported, tablet operating systems lack a central file management system, which may mean that files stored within an app cannot be accessed without opening that app, and cannot be shared across apps. Although a possible solution may be to share files in a Cloud storage service (such as Dropbox or Google Drive), such an approach is not yet

supported by all apps, and may also represent a new challenge where such Cloud services are not available (Huang & Towey 2010).

#### **4.5 Subject Identity**

One of the major themes which has been emerging from conversations with HEI-A computer science students and staff is a sense of how strongly the identity of computer science seems connected to the computer laboratories (Stets & Burke 2000). Students report that, although they may also use laptops, netbooks, tablets, and smart phones, they still tend to gravitate to the computer laboratories to meet other computer science students, and to work on their coursework. This highlighting of the computer laboratory as an integral part of the university, and especially the student life of the computer science student, has been one of the most strongly voiced aspects of the stakeholder feedback.

### **5. Conclusion**

As the use of computing devices by students has been evolving, and in particular with the economic and educational developments seen in the PRC, the need for traditional computing facilities, especially computer laboratories configured with desktop computers, will be further eroded. As seen in HEI-A, this declining need, combined with ever-increasing pressure on space, is causing a rethink of how universities can provide for the computing needs of all students. An ironic aspect of the many innovations brought about in the classroom through advances in computer science and computing devices is the fact that, in many cases, computer science students themselves are not yet able to be free of the desktop computer — they need, and express a preference for, not only the superior processing power, text input facilities, and displays, but also the actual physical space which they can identify with as their own. Even as the processing power, displays, and other current shortcomings of the mobile devices are overcome, this need for a space to identify with may well continue, and represent the most significant challenge to the BYOD culture and to the goal of freeing the computer science student from the desktop.

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*The Experiences and Identities of Mainland Chinese  
Undergraduate Students in Ontario Universities*

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**Abstract**

Statistical quantitative analysis and interview method are developed to explore the satisfaction of life and study and identity construction of mainland Chinese undergraduate students in a small number of universities in Ontario, Canada. The research results indicate that Chinese undergraduate students are satisfied with their life and study in Canada. They seek help for study and life problems from people in their social network. Their life and study' satisfaction, with schooling year accumulating, are gradually going down. The study also analyzes the identities, Chinese students are characterized by international person with the boundary of nation-states strongly, which influences and constrains their satisfaction of study and life in Canada. Although they generally indicate a desire for forms of cosmopolitan learning and growth, these aims are less realized than are more pragmatic goals for their international study. The research at last shows how to understand cosmopolitan in the context of Chinese culture and history.

Keywords: Chinese undergraduate Students; Canadian universities; satisfaction; experiences, cosmopolitan learning

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## Introduction

The internationalization of Higher Education has become a trend around the world. In China, with the improvement of its comprehensive national strength, more and more students choose to pursue their further study in other countries. The number of overseas students from China has been increasing rapidly and attracts more and more attention. This study describes the academic achievements, living experiences, and their identities of mainland Chinese undergraduate students in Ontario, Canada.

## Method

In this study I use a combination of quantitative and qualitative research methods. Quantitative data from survey questionnaires is used to identify mainland Chinese undergraduate students' experience and their perception in Ontario, Canada. Questionnaire profiles the general picture of mainland Chinese undergraduate students on experiences and perceptions. It also answers what mainland Chinese students' experiences and perceptions are.

The study employs open-ended interviews in order to gain insight into the lived experience of Chinese students. I visited some universities, such as the University of Western Ontario, the University of Toronto, York University, and Waterloo University. In these universities, mainland Chinese undergraduate students were investigated and interviewed during the academic year of 2011-2012. A total of 119 questionnaires and 20 face to face interviews were conducted during the academic year.

## Findings

### Satisfaction with study

The results of this study indicate that the majority of the international students are satisfied with their lives.

The Survey obtained following data:

Availability of learning resources	63.5%
Social and recreational activities on campus	48.4%
Interaction with professors	63.5%
Interaction with fellow students	58.7%
Availability of interesting courses	54.0%
Services for international students	46.7%
Health services	41.3%
Coping with exams	50.8%
Coping with use of English	57.1%
Coping with course workload	54.8%
Opportunities for further learning	53.2%

One of the most important reasons for the higher study satisfaction is that many students are confident in their English; language abilities especially in course or academic paper are helpful for the satisfaction of study. One student made a comment

on it:

*Influent English is necessary for enrolling in a good reputation university in Canada, I practice speaking and writing English quiet often, although I am troubled by my writing, I can feel I am improved fast, because I have gotten better and better scores at paper writings.*

Mainland Chinese undergraduate students with good language abilities facilitate them to attend academic forum and get their paper published. They expressed English challenges can be overcome among their generations.

From the statistics of the survey, Chinese overseas students also list the four following aspects of their study abroad as their most dissatisfied things (the score scale: 1.the most dissatisfied, 2.not very satisfied, 3.satisfied, 4.very satisfied):

Special supports (ex. The language preparation courses) 2.48

The burden from the accommodation 2.49

Whether the course is related to overseas students like me 2.56

The service for overseas students 2.67

From those statistics we know that the three most unsatisfying aspects are: special supports (ex. the language preparation courses), the course is related to overseas students like me, the service for overseas students.

Special supports (ex. the language preparation courses) is the most unsatisfying factor, and the service for international students also let students down. All these show that some countries fail in making complete policies for helping overseas students study and live and fail in considering the culture shock for those students. At the same time, the language preparation courses show that the language barrier is the most daunting task for overseas students.

Students are also unsatisfied on the courses, yet another survey about why students choose Canada to study in, the three most important factors are:

The university affords courses that I want to take 3.67

The reputation of the university 3.56

The reputation of the program/courses 3.53

From it we know that the courses are the priorities for students to make decisions, but in real study experience abroad, courses cannot live up to students' expectations. It also shows that students get information about which country and which school to study in from the error sources. According to the data from a study named "The sources for information to study in Canada", most students get information and advice from: family members, websites, home schools (teachers or the principal). All the three above have highly strong subjectivity and uncertainty. It also shows that seldom students get their information from reliable agencies or office organizations. So there are no reliable organizations providing international Chinese students with correct information. Gaps exist between their expectations and realities.

### **Satisfaction with life**

The survey shows the satisfaction of the students with the life experiences in Canada: they are satisfied with "Canada's health service", "safe environment", "tolerance to different ethnic/religious differences", "the local people very friendly", these satisfactions reach more than 95%. In addition, the students are also satisfied with "easy to travel in Canada and around the country", "easy to find a social group to share my hobbies," and "easy to integrate into Canadian society", satisfactions reach up to 60% -80%.

Compared to mainland China, the scarce resource in China difficult to be obtained is relatively easy to obtain in Canada, satisfaction is high in this case, such as environmental safety, health, high degree of integration, and so on. But for the difference in food, cultural environment, and lifestyle, many people are not suited to the Canadian situation, which resulted in unsatisfactory conditions, such as cold diet, cold and wet weather, the high cost of living, and so on.

Generally, students are satisfied with their living experience in Canada, reporting it was easy to mix in Canadian society and it was a safe environment, and they experienced tolerance towards ethnic differences. Public transportation was available, it was an exciting lifestyle in Canada with many things to see and do. Travelling in Canada and the USA was easy, and quality of official administration services in Canada was good, especially Chinese students feel Canadian people very nice.

### **Social life in Canada**

Students feel satisfied with their stay, partly because they stay with Chinese, especially when they meet difficulties, they would like to ask Chinese origin. Mainland undergraduate Chinese students make more than 60% of closest friends from China during the abroad study in Canada, followed by making Canadian friends, around 30%, and rarely make friends from other countries, less than 10%. In addition, 60%-80% of mainland undergraduate Chinese students' friend are made in the universities, their social circles are limited to the universities or colleges.

Mainland Chinese students like to participate in various activities, such as learning, having dinner, celebrating birthdays etc.; more than 80% of activities they took part in are with friends from China too, followed by from Canada. Students participate less in religious activities, mainly because most students have no religion, even if a few students participated in the religious activities, mostly with Canadian friends. One student explained that the point of getting good academic results is to turn to Chinese students and friends, if he cannot grasp academic research. It shows the relation between high satisfaction and Chinese social circle.

*I like to stay with Chinese students, if I cannot understand academic things, I can ask Chinese students, and some people will clearly explain it in Chinese comparing my poor English understating abilities. I am satisfied with my experiences here, which helps me recognize that I am Chinese origin, no matter where I go, my life gets easier and happier when I identify myself Chinese.*

Their study and life circles basically are with Chinese, which made them have no many obstacles in Canada. This means they are not really emerged into Canadian life, the satisfaction is limited.

### Relation between life and study satisfaction and overseas study period

The research sorts the 119 students, according to their study period in Canada, into five groups: the one-year, the two-year, the three-year, the four-year and the five-year whose proportion are 8.5%, 42.4%, 28.8%, 13.6% and 6.8%. Research questionnaire categorizes the marks of overseas life and study satisfaction into 4: 1 for most dissatisfied, 2 for dissatisfied, 3 for satisfied, 4 for most satisfied. Based on the valid questionnaires, we have counted the satisfaction average and variance of the five groups' overseas students(see Table1-2).

<b>Study satisfaction</b>	The one-year group	The two-year group	The three-year group	The four-year group	The five-year group
Average	2.9433	2.8256	2.8938	2.6910	3.0667
Variance	0.066622	0.297048	0.374389	0.1224444	0.006667

Table 1: Study satisfaction of mainland undergraduate Chinese students

<b>Life satisfaction</b>	The one-year group	The two-year group	The three-year group	The four-year group	The five-year group
Average	2.7121	2.9286	2.8594	2.7837	3.1429
Variance	0.040208	0.248571	0.253568	0.268559	0.012755

Table 2: Life satisfaction of mainland undergraduate Chinese students

Fit average satisfaction of the five groups(see Figure1):

Quartic function will be perfect for the fitting average of study satisfaction (red in the figure) while cubic function for the life satisfaction (blue in the figure).

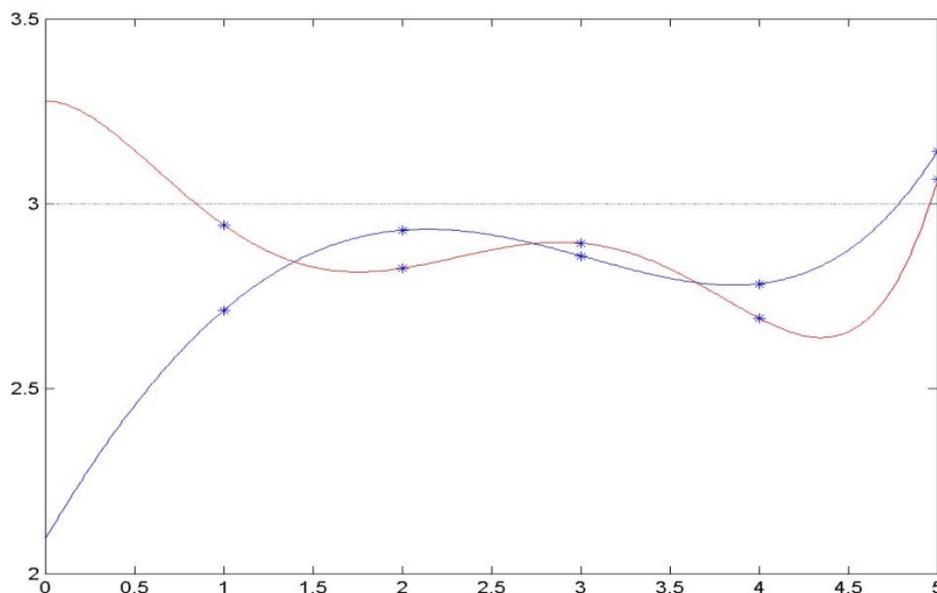


Figure 1: Study and life satisfaction

1. From the figure1 we can see the students' groups from one year to four years are commonly below 3 and the statistics of five-year group whose sample is relatively small can be ignored. As a result, we can conclude that undergraduate Chinese students are satisfied yet most satisfied with their life and study in Canada
2. Life and study satisfaction take wavelike changes with time going by. Except the five-year group, we get an overall average as follows, with life aspect taking 50% and study aspect 50%(see Table3).

Overall satisfaction	The one-year group	The two-year group	The three-year group	The four-year group
	2.8277	2.8771	2.8766	2.7373

Table 3: Overall satisfaction of mainland undergraduate Chinese students

We can see from the statistics that Chinese students' feeling about their school life in Canada changes slightly, staying at a level of 2.8 or so as time goes by.

3. Ignoring the five-year group but the other four groups, the students' study satisfaction decreases with time changing, and the fitting linear function being  $y = -0.068853x + 3.0106$ (see Figure2).

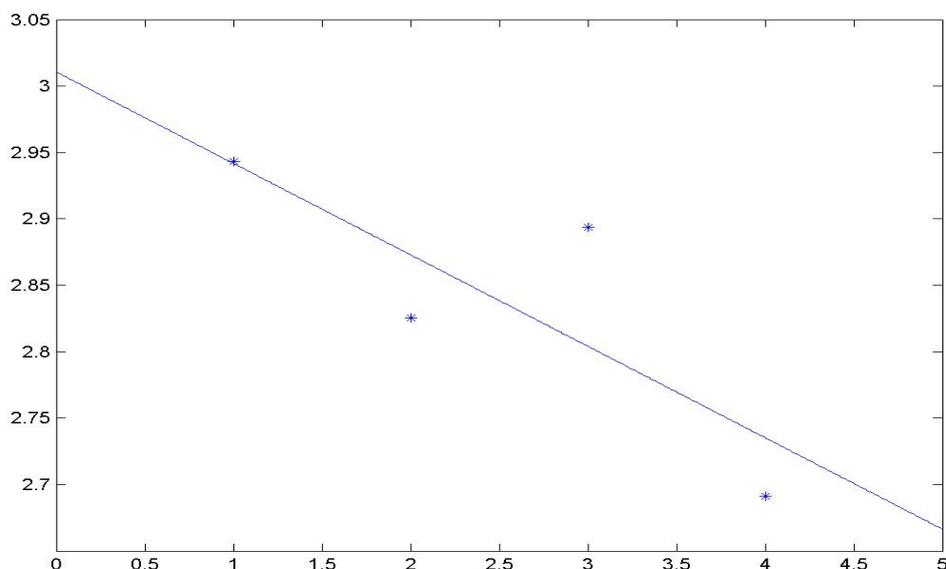


Figure 2: Study satisfaction decreases with time changing

4. Ignoring the five-year group but the four groups, the students' life satisfaction changes in a curve shape, the fitting being  $y = -0.07306x^2 + 0.37985x + 2.4193$  (see Figure 3).

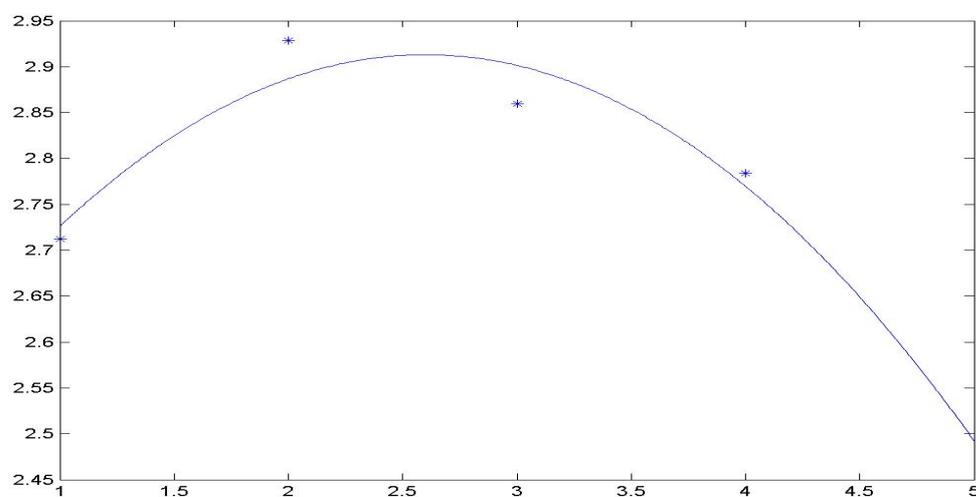


Figure 3: Students' life satisfaction changes

Relatively, the one-year group students are less satisfied with their life there. It may be because that they reach a new unfamiliar environment yet adapt to it. If we analyze the figures beginning with the two-year group, we can see their life satisfaction, with schooling year accumulating, is gradually going down.

### Chinese National and Cultural Identity

The Research has showed mainland Chinese students are comfortable to talk in Chinese, to do some activities such as studying or going out for dinner with other diaspora Chinese people, and they seldom have Canadian friends of non-Chinese

origin. One big reason is “Chinese identity” in their mind; this Chinese identity is distinguished by language, not face, as the following quotes illustrate:

*Most of my friends are Chinese. I'm diversified into half of them speak Mandarin and half speak Cantonese. There are some CBCs (Canadian born Chinese) but it's really not that big, I'm not in that deep of a relation with them because they are more comfortable with English and I'm more comfortable with Chinese.*

*I accept high school education here, my English can be like domestic students. However, my friends are from China, we talk in Chinese when we are together, my Chinese identity made me feel easy and happy while studying and socializing.*

Birth place and family identity and attitude to Chinese culture played an important role on students' identity. There are two Chinese students' associations in one university that I visited, one is mandarin association, the other is Cantonese one, even students from Guangdong whose dialect is Cantonese, still attend mandarin, they group their identities is very close to their birth society. It really depends on the family's attitude here, one student told me. No matter where they live, they have a faith their root in china, which is they are Chinese.

This Chinese identity is formed from family and traditional Chinese cultural on the one side; it is shaped by domestic people on the other side. The desire for greater social interaction, cultural exchanges and understanding is often thwarted by local students (Matthews& Sidhu, 2005) .

*Some local students want to know more about international students, but not all. The topic that we cared is not the same. Give you a example, they like to talk about their family and pet, but for our international students, we want to know Canadian society, and want to find a same subject such as how to think about Japanese nuclear leak, but Canadian students don't care too much. Japan and Canada are not close in geography, but Japan is china's neighbor, I care Japanese things much more than pets'. When I talked about nuclear leak with local students, they keep silent, and then they are together again to talk their pets. The topic of family and pets usually happens among close people. From the topic, I know I am not like their domestic students, even Canadian white students think I am Chinese, no matter whether I have been immigrant or Canadian citizenship.*

That local students are not interested in the topic that Chinese students wanted to talk reminds international Chinese students are “the others”, “outsiders” in Canadian society. When Chinese students turn to the same race, they find they have the sense of “home” and are “insiders ”in Canada, This situation emphasized Chinese identity.

However, international Chinese students also accept political view and culture from Canada; they like to go to social clubs or attend hobby groups with Canadian domestic students too. A student explained how she goes to sports in order to understand how to use English words in certain context.

*I like to go to attend sports to meet local people, to know Canadian society and culture. When I talk with them, I think I am a part of Canada, and I have not been the*

*original Chinese. I benefit from two cultures and societies, I cannot say which one better or not.*

They believe there are advantages and disadvantages between the two countries. Often cannot give a conclusion that one is better. They think they have double identity, international people, a bridge between the East and West: I interviewed the students , they often selected words or viewed themselves as “an international person”.

*I don't like Canada criticized China, or China criticized Canada. Canadian experiences make me international, I grasp Chinese and English well, open-minded.*

Rizvi (2005) used the concept of “cosmopolitan ”and “global citizenship”, and Ong (1999) used flexible citizenship to describe some internationalization phenomena, they did not employed international person to their research object, But from Chinese students’ words, they think they have international identities in the same accord, not global citizenship, their identities are with the boundary of nation-states strongly. When I interviewed Chinese students, no one mentioned they were cosmopolitan, they chose to use the term “international” to describe themselves. Even I mentioned flexible or cosmopolitan, they did not talk these words to me, still insisted they are international people, with national identity.

In one Nadine Dolby’s research (2005), American undergraduate students have a strong American national identity, but Australian students have a relative weak sense to national identity ,more global imagination. China and American are different political and economic system county, one is the center of the world economy, the other is developing fast in recent years. They are similar in understanding the world. Chinese students developed a dual or multiple identity and “love both China and Canada”, to explain their identity.

International mainland Chinese undergraduate students live in the equilibrium of two cultures but are often confused about their identity. Most have a political identity with their adopted western country, and a living and habit identity with traditional Chinese culture. International Chinese students have some similar characteristics with other diaspora Chinese; their country of origin is China, and now lives as part of Canadian society. They are familiar with the characteristics of multiculturalism, but they also have their own view on their identity.

## **Discussion and Conclusion**

In this section the conclusions drawn from the analysis of the term of Cosmopolitan mentioned of the research study will be presented.

At present, many students become cosmopolitan in their outlook. These young people from China, India, Brazil, and the United States are interested in the same music, the same fashion, and they have the same kind of global merging because the food eaten, the music they listen to and so on. But our study finds that China, partly because very fewer westerners learn mandarin; there is not much interplay on foreigners coming in learning mandarin and coming to see China compared with westerners learning Spanish and going to Argentina, México and Peru.

European languages were a more globalizing phenomenon to the Chinese, The Europeans and North American's likely to learn each other's language as a second language, but not the Chinese language. Especially in the old days, twenty years ago, if a Canadian went to school to study language, the usual choices are French, Spanish, and sometimes German. They could have studied Japanese, Korean, and Chinese etc. too, but these languages were rarely considered and teachers were rarely available also.

Only when they went to university with classes teaching Mandarin, Japanese etc. were a few universities Canada implication is that trend should mean in the future with more western learning mandarin, and Chinese becoming more popular and more Chinese becoming more cosmopolitan in outlook too.

Cosmopolitan identity or citizenship is reshaped by new cultural experiences, but identity is first shaped by personal or ethnic or national history, cultural traditions and professional aspiration (Appadurai1996; Rizvi2005). In the eighteen hundreds, Europe and the United States, Japan attacked China, took China aggressively. This has a long memory in China and this was not a good way to build relations with China. Also since then, China separated the world into "China" and "foreign". China did not follow western cultural mode. When the concept of Cosmopolitan citizenship was introduced in the world, it is still seldom talked about in China.

Chinese students coming to western universities were different from Spanish students coming to English-speaking countries or French-speaking countries. Even Japanese students were different from students from China. Many Japanese has English words. Post second World War, the American forces literally governed Japan, the American troops were based there, so the American occupation in Japan resulted in transfer of some American culture. The children in Japan born during this time in 1945 or were five or ten years old, although they had not been in the war exactly, but they grew up with the American soldiers in the towns and experienced American culture in their life. They integrated American words, and they developed different feeling about Americans. At the same time, China became communist. This is good thing for China to become communist, because Mao Zedong and his successors progressed more than they would had they voted for Jiang Jieshi. When Japanese were getting friendly with Americans, the Americans were very hostile to the communist philosophy and in turn, very hostile to China. For many years, people could not go to China or leave China. People could not export products to China. The foreign people who studied mandarin were mostly people who were going to the American military, and were taught the Chinese language.

When communicating with Chinese students on cosmopolitan citizenship, in myopinion, countries must pay attention to Chinese history and culture; insist that different cultures coexist with their own merits and uniqueness.

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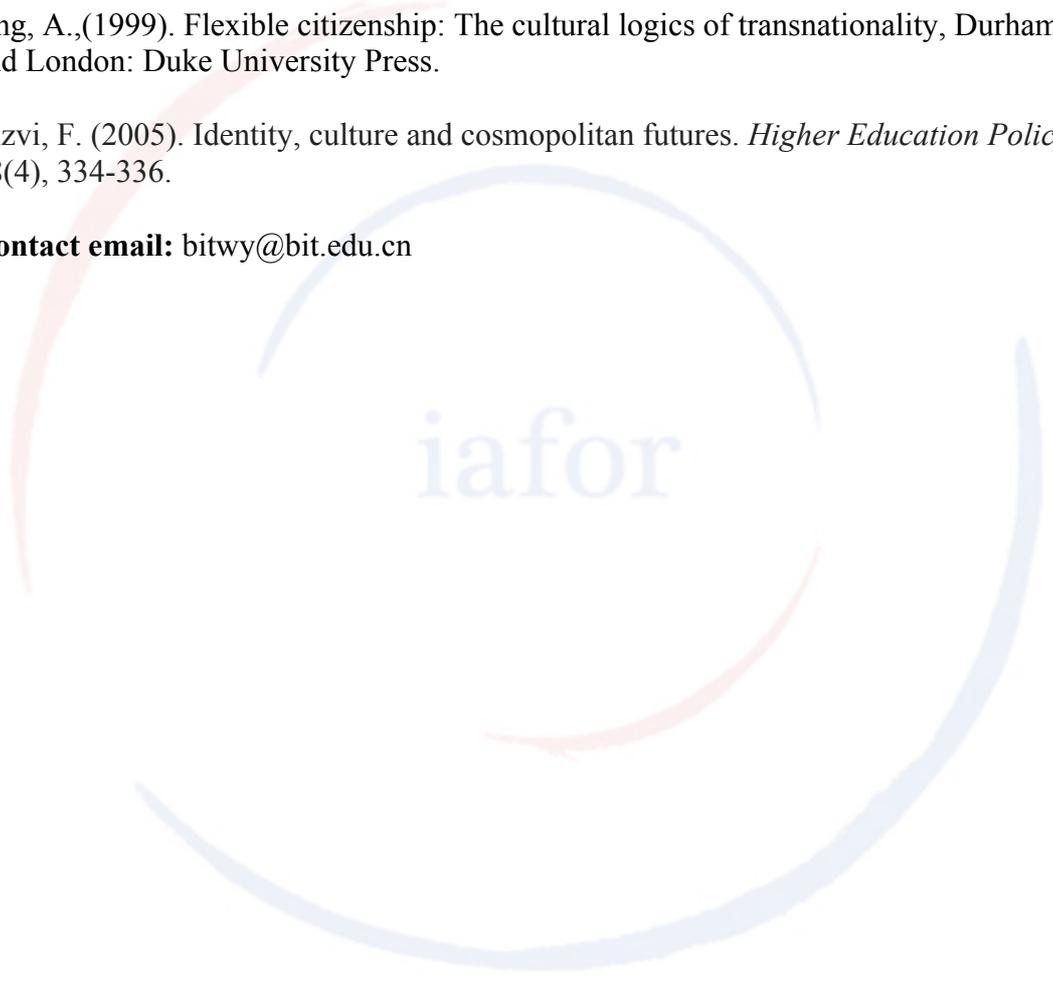
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The logo for the International Association for Educational Research (IAFOR) is centered on the page. It features the word "iafor" in a light blue, lowercase, sans-serif font. The text is enclosed within a circular graphic composed of two overlapping, semi-transparent arcs: a light blue one in the foreground and a light red one behind it, creating a sense of depth and movement.



***Development of Computer-Based Experimental  
Set in Physics for Free Falling Object***

Panjit Musik, Nakhon Si Thammarat Rajabhat University, Thailand

The European Conference on Education 2014  
Official Conference Proceedings

**Abstract**

The purpose of this study was to create and to develop the computer-based experimental set for physics labs. The developed experimental set provides learners easier way to study motion of free falling object without air resistance and also easier way to measure the acceleration due to gravity, thus learners get their Physics concept precisely and more quickly than ever. The computer-based experimental sets are consisted of Arduino board connected to a computer or a notebook via a USB port, an infrared sensor circuit, an electromagnet relay circuit, a steel ball and voltage power supply. Arduino1.5.2, Processing 1.5.1 and Mathematica 9.0. were assigned to be software of the experimental set. Arduino1.5.2 controls the experimental performance while Processing 1.5.1 displays output for displacement vs. time in real time graphs and Mathematica 9.0 analyzes the results and simulates experiments. The acceleration of gravity from the experiment by the developed computer-based experimental set displays  $9.780121 \text{ m/s}^2$  that is  $\pm 0.013076 \%$  error when compared to the theoretical calculation. The computer-based experimental set was tested in Physics classes with Constructivist, for 186 upper secondary purposive samples, the satisfaction of the samples to their learning activity is at a high level and their pre-test and post-test scores are 45.79 and 70.29 % respectively. The Post-test and the achievement scores at 77.43 and 70.29 lead to the conclusion that the effectiveness of the experimental set reaches the criterion at 70/70.

Keywords: Free Fall, Computer-Based Experiments, Arduino, Constructivism

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## **Introduction**

Integrating computer technology into physics laboratory is an effective approach to teach physics nowadays. For computers are such useful devices to help students in performing their Physics experiments in shorter time and also computers motivate students to become self-directed learners (Kezerashvili, 2012). Computer-based instruction has been regarded an alternative. A real laboratory experiment or the use of virtual laboratory experiment yield students better Physics concept than traditional teaching approach as only books and lecture (Baser and Durmus, 2010). Students achievement increases when the Computer-Based Instruction (CBI) technique is implemented as a supplement to classroom education. The reason is that the computer-based instruction provides them with the real time feedback and reinforcement. Moreover, computer-based instruction promotes and creates an exciting and interesting atmosphere in Physics classes (SERIN, 2011). The use of computer-based experiment set with laboratory interfaces allows real-time recording and graphing of physical quantities. The qualitative use of real-time graphing in computer-based experiments has driven up interest in using experiments to enhance physics conceptual understanding (Schauer, Ozvoldova and Lustig, 2006). As mentioned above that students' achievement increases after CBI techniques is implemented to class, the study consequently aims to create and develop computer-based experiment set for free falling object.

For the computers-based experimental set, AVR microcontroller was employed as the experimental controller. There are 3 advantageous characters to employ AVR microcontroller for it is an open source which can be free downloaded. In addition, AVR has developed its smaller hardware chip which results to low cost (Naveenkumar, Prasad, 2013 and Zachariadou, Yiasemides, and Trougakos, 2012). Moreover, its simplicity that the analog signal from the sensor can be sent to microcontroller via Analog pin (ETT Co., Ltd. , 2009), makes AVR the most suitable for our computer-based experimental set.

Not only the suitable aids but also the suitable learning approach that were administered to the students. Constructivist is considered one of the most popular approach that helps to improve Physics teaching (Schwegler, 2001). According to constructivist, Physics concept can't be developed with only explanation. Thus, teachers or constructors need to be more creative for their lessons as well as their aids which are able to highly enhance students' Physics concept (David, 2002 and Johnston, 2010). For the lesson and the experiment provided, students are exposed to the experiment which they work cooperatively, apply their skills, make their decisions, experience the outputs, draw the conclusion, and finally overcome their Physics concept.

## **Methods**

### **Computer-Based Experimental Set** *Design and construction*

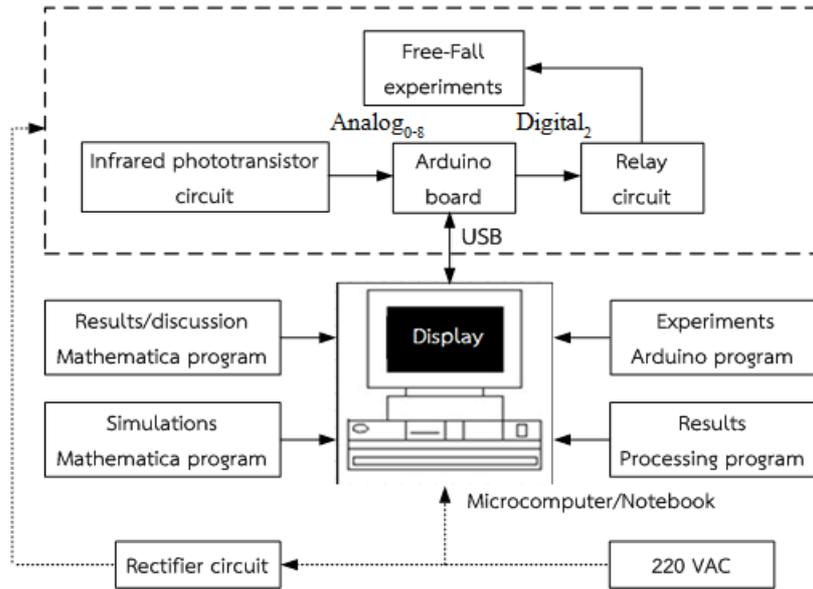


Figure 1 Computer-based experimental set

The computer-based experimental sets consisted of Arduino board, ET-EASY MEGA1280 (Duino Mega) connected to a computer or a notebook via a USB port, an infrared sensor circuit, an electromagnet relay circuit, a steel ball and voltage power supply. Arduino1.5.2, Processing 1.5.1 and Mathematica 9.0. were assigned to be software of the experimental set. Arduino1.5.2 controls experimental performance while Processing 1.5.1 displays output for displacement vs. time in real time graphs. Mathematica 9.0 analyzes the results such as graphs of displacement vs. time, graphs of velocity vs. time and graphs of acceleration vs. time.

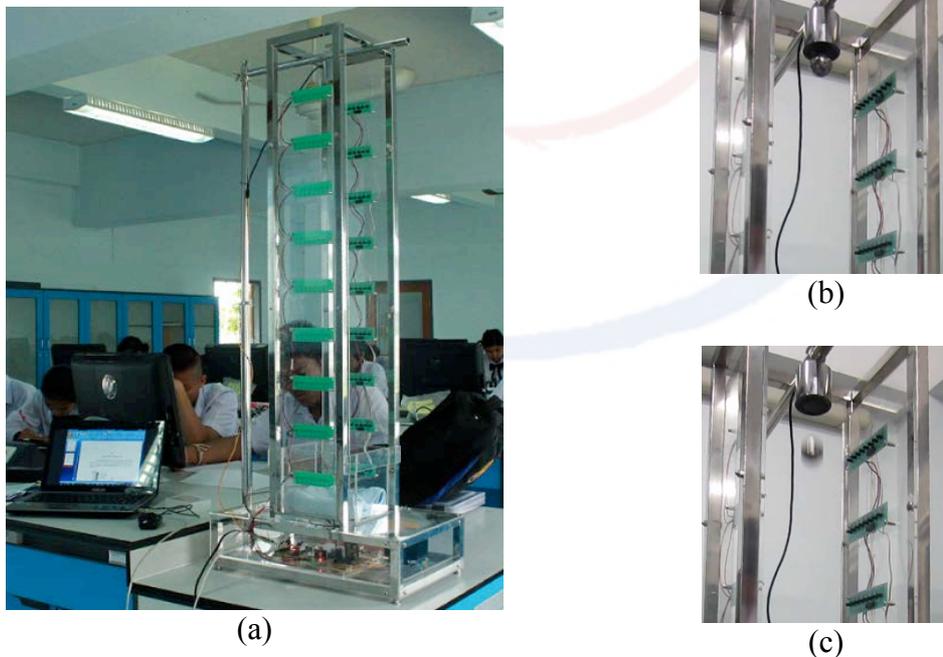


Figure 2 (a) Computer-based experimental set for free falling object. (b) The relay switch at “on” position. (c) The relay switch at “off” position.

**Operating system of the set**

A microcontroller is connected to a computer and an electronics circuit in order that the time at any fixed points will be read. Then the real time graph of displacement vs. time of the steel ball will be displayed. There is a relay switch to turn on and off the circuit. The steel ball at the end of the spring is caught when the switch is on and released when the switch is off. When the steel ball is released from 0.90 m height, it moves in free falling motion through the infrared phototransistors and makes the voltage output of the infrared receivers change from 0 to 5 volt. The output from the receivers is sent to microcontroller. Arduino takes charge to check for time the object consumes to reach a certain point, and then the data is stored in the computer.

**Infrared phototransistor circuit**

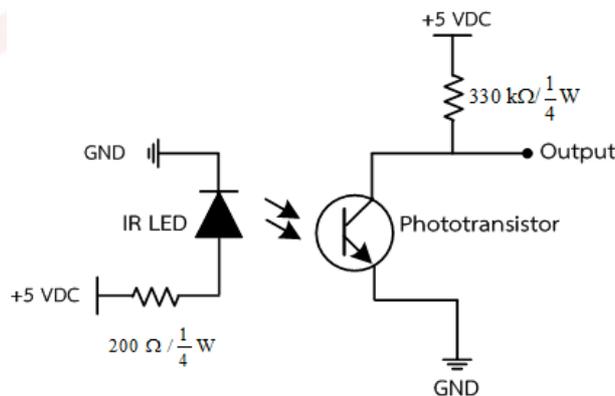


Figure 3 Infrared Phototransistor circuit

Infrared phototransistor is a fundamental circuit which composed of a sender and a receiver. The phototransistor works as a receiver while LED infrared works as a sender. There are 2 resistances of 330 kΩ and 200Ω, ¼ w. The 330 kΩ is for the receiver and the 200 Ω is for the sender. Electric power of the system is 5 volt of direct current. When the infrared reaches the phototransistor, the output voltage is at 0 volt and when the infrared is obstructed by an object, the output voltage changes to 5 volt.

**8 IR LED Senders**

We design to fix 8 infrared LEDs in a row in order that the falling object will never fall out off the detected area. And there are eight rows of LED fixed along the height of the set to get the data from certain points. Not only the data from the start and stop points, but also 7 fixed points between the start and the stop.

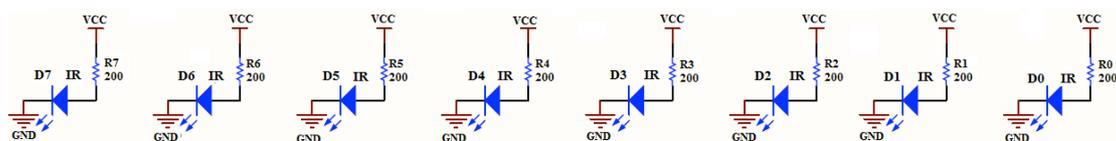


Figure 4 Infrared LEDs circuit

## 8 IR Receivers

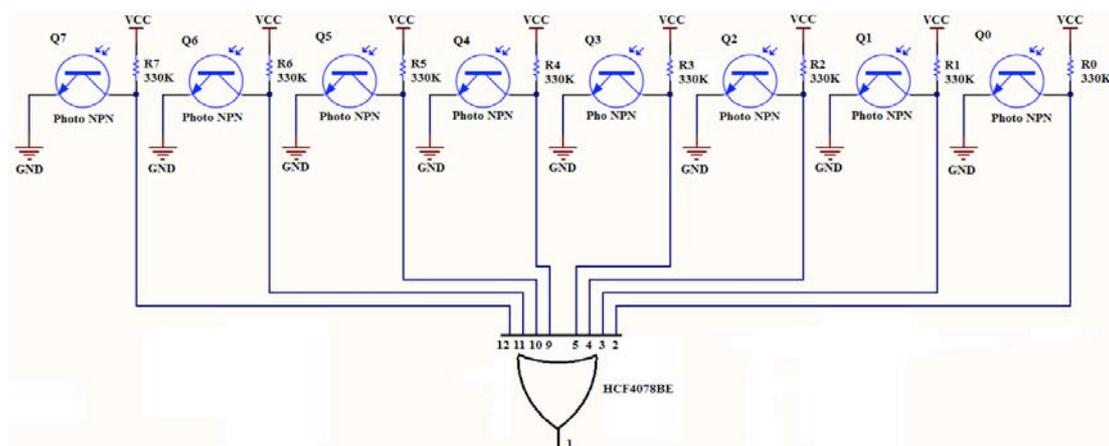


Figure 5 Infrared Phototransistor receiver

We also design to fix 8 phototransistors in a row since senders and receivers work in agreement of each pair. When the infrared is sent from the sender, the receiver in the opposite side will be on charge to work. Consequently, there are also 8 rows of 8 phototransistors fixed along the height opposite to 8 rows of 8 infrared LEDs.

The reason to design 8 rows of sensors because when we study free falling object we don't study only periods of the movement but also displacement vs. time, velocity vs. time, and acceleration vs. time, etc. Accordingly, we design to check time of the moving object at 8 fixed points in order that the output would be sufficient for graph plots for what we want to study.

The infrared phototransistor receiver was designed in a sensor plate of 90 cm (high) × 10 cm (wide). Eight rows of 9 IR LEDs were fixed along the height of the plate. Each row is 11 cm to one another. However, each of LED in the same row does the same task; whichever in a row is obstructed means the object is detected. Then the voltage is sent to IC or gate HCF4078BE. With the configuration, the movement of the object would never escape from the sensors.

### The supplemental Physics lesson

The supplemental physics lesson was designed due to Constructivist approach for upper secondary school in order that the students chosen as samples would have their handbooks for the experiment.

The supplemental physics lesson contains the content of free falling object. There are 2 types of experiment in students' book. One is real experiment with the computer-based experimental set and the other is the experiment of theoretical calculation or in other words is graph simulation of the object's motion for the data that can't be performed in real experiment. In experiment part, topic, objectives, experiment's tools, procedure, recording tables, analyzing part, concluding part, post experiment questions and revision exercise are provided for the students.

### ***Theory of free falling for experiment***

A free falling object is an object that is falling under the sole influence of gravity. Any object that is being acted upon only by the force of gravity is said to be in a state of free fall. There are two important motion characteristics that are true of free-falling objects:

- Free-falling objects do not encounter air resistance.
- All free-falling objects near the earth's surface, acceleration of object due to gravity is approximately  $9.8 \text{ m/s}^2$  (Cutnell and Johnson, 2010).

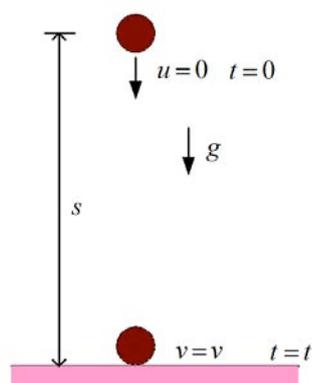


Figure 6 Free-falling motion

We can determine the velocity and location of any free falling object at any time using the following equations.

$$s = \frac{1}{2}gt^2 \quad (1)$$

$$v = gt \quad (2)$$

where  $g$  is the acceleration of gravity,  $v$  is the velocity, and  $s$  is the displacement from an initial location.

#### ***Operating free fall experiment: Test for g***

1. Connect the USB to the experimental set to a PC or a notebook.
2. Adjust the length from the launch point to the base at 0.90 m ( $s=0.90\text{m}$ )
3. Switch on the program to control the experiment and display the output.
4. Attach the 0.217 kg steel ball at the launch point.
5. Switch on the experimental set.
6. Observe the graph of displacement vs. time at various points on the monitor.
7. Record time at every point.
8. Change the steel ball to 0.130kg and repeat 3-7.
9. Change the steel ball to 0.085 kg and repeat 3-7.

### **Results**

The trial of experimental set yields the result as shown in the table below.

Table 1 : The experiment result of the developed set for free falling object.

s (m)	Experiment					
	m = 0.217 kg		m = 0.130 kg		m = 0.085 kg	
	t (s)	g(m/s <sup>2</sup> )	t (s)	g(m/s <sup>2</sup> )	t (s)	g(m/s <sup>2</sup> )
0.019	0.062667	9.676324	0.062333	9.780090	0.062333	9.780090
0.129	0.162667	9.750403	0.162667	9.750403	0.162000	9.830818
0.239	0.220667	9.816449	0.221333	9.757403	0.222667	9.640897
0.349	0.267667	9.742419	0.267667	9.742419	0.268667	9.670030
0.459	0.305667	9.825315	0.306000	9.803921	0.306000	9.803921
0.569	0.340333	9.825016	0.340667	9.805798	0.340333	9.825016
0.679	0.373	9.760725	0.372000	9.813273	0.372333	9.795710
0.789	0.402	9.764609	0.401000	9.813371	0.401333	9.797077
0.899	0.428	9.815267	0.427667	9.830558	0.427333	9.845931
Average		9.775170		9.788582		9.776610
Average		(9.775170+9.788582+9.776610)/3 = 9.780121 m/s <sup>2</sup>				

The acceleration of gravity of free falling object measured by the experimental set yield average  $g = 9.780121 \text{ m/s}^2$  error of 0.013076 %, whereas theoretical  $g$  in Nakhon Si Thammarat =  $9.7814 \text{ m/s}^2$  (Ahern, 2011).

$$error = \frac{|9.7814 - 9.780121|}{|9.7814|} \times 100 = 0.013076 \%$$

**Graphs of displacement vs. time in real time graphs**

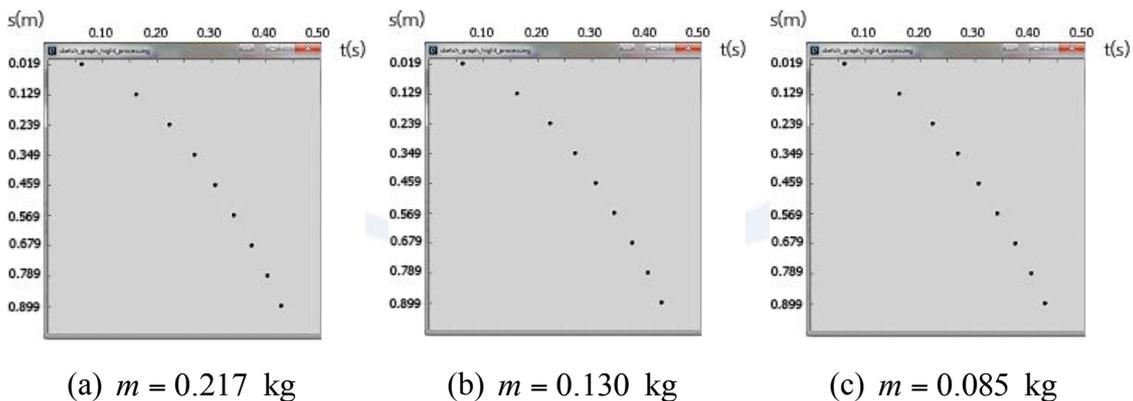


Figure 7 Graphs of displacement vs. time in real time graphs

Graphs of displacement vs. time reveal parabolic curve; increasing time results to non-linear higher value of displacement.

We study the relationship of displacement vs. time (of the experiment), then graph with Mathematica 9 as shown in Figure 8. Dots represent value got from the

experiment whereas lines, obtained by curve fitting with Mathematica 9, show appropriate curves for those sets of dots or sets of data.

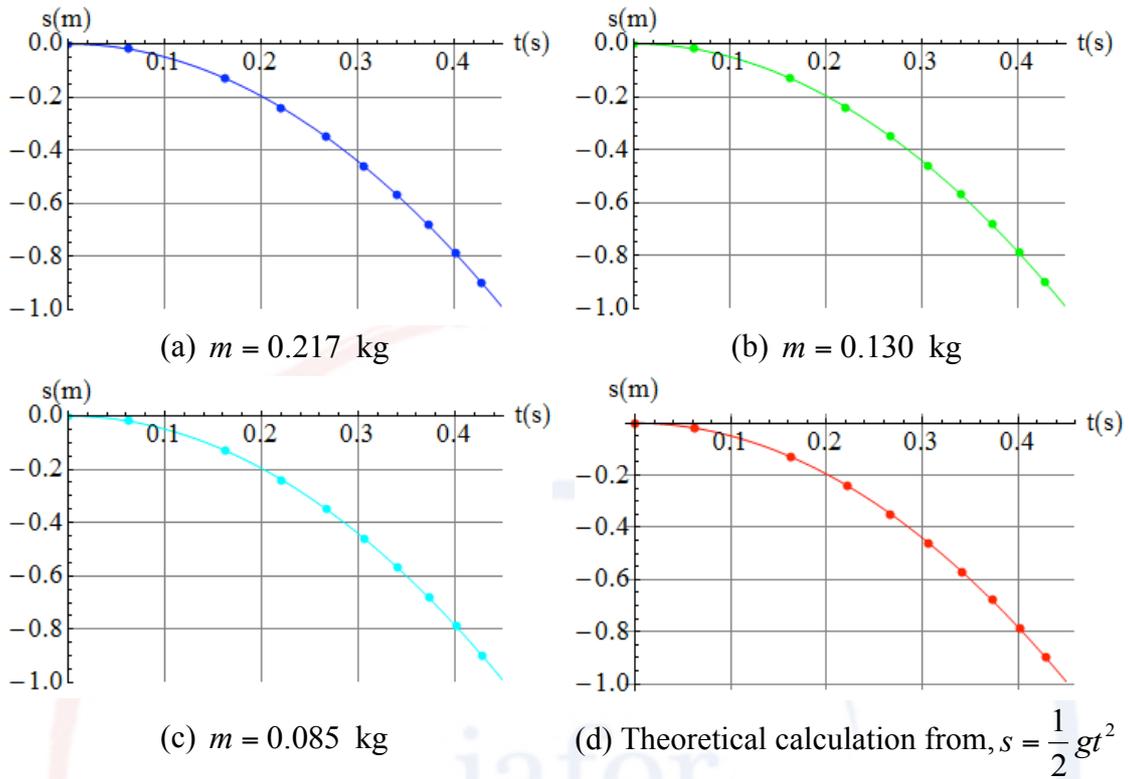
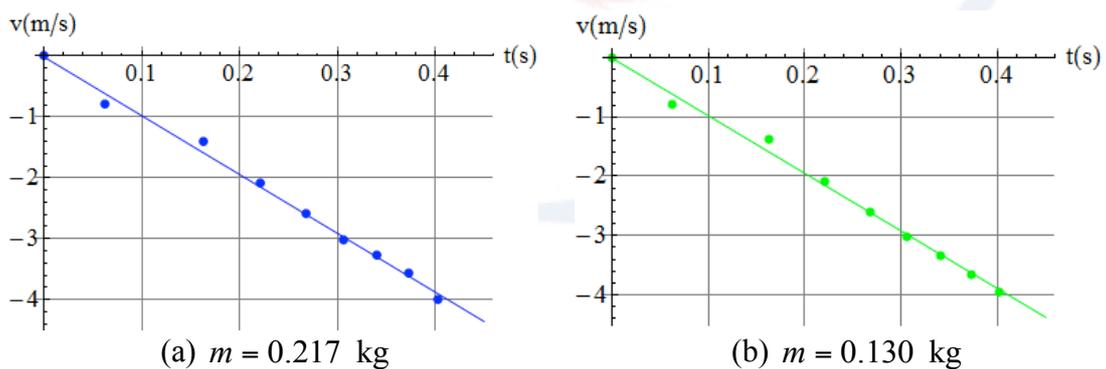


Figure 8 The relationship of displacement vs. time.

The relationship of displacement and time appears to be parabolic curve. The experimental graph and the calculation graph are in good agreement. (a), (b) and (c) show different mass consumes same time to fall down, that is the relationship of displacement vs. time does not depend on mass.



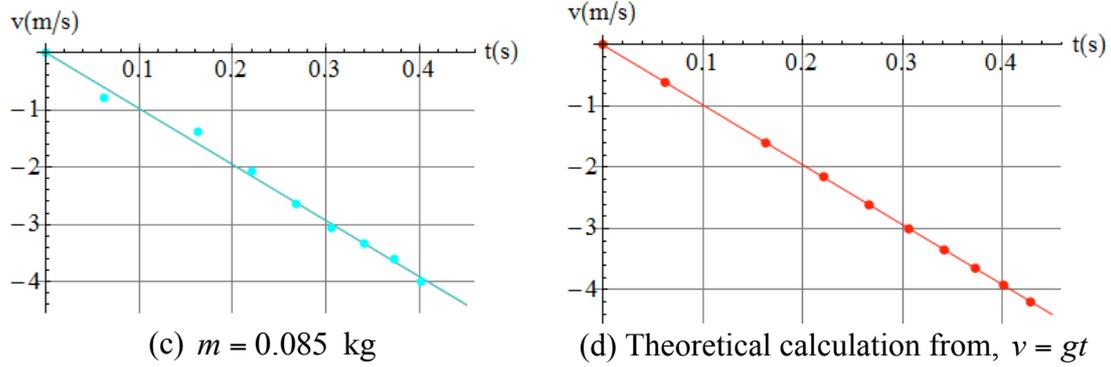


Figure 9 The relationship of velocity vs. time.

The relationship of velocity and time appears to be linear. Velocity is linearly proportional to time. The experimental graph and the calculation graph are in good agreement.

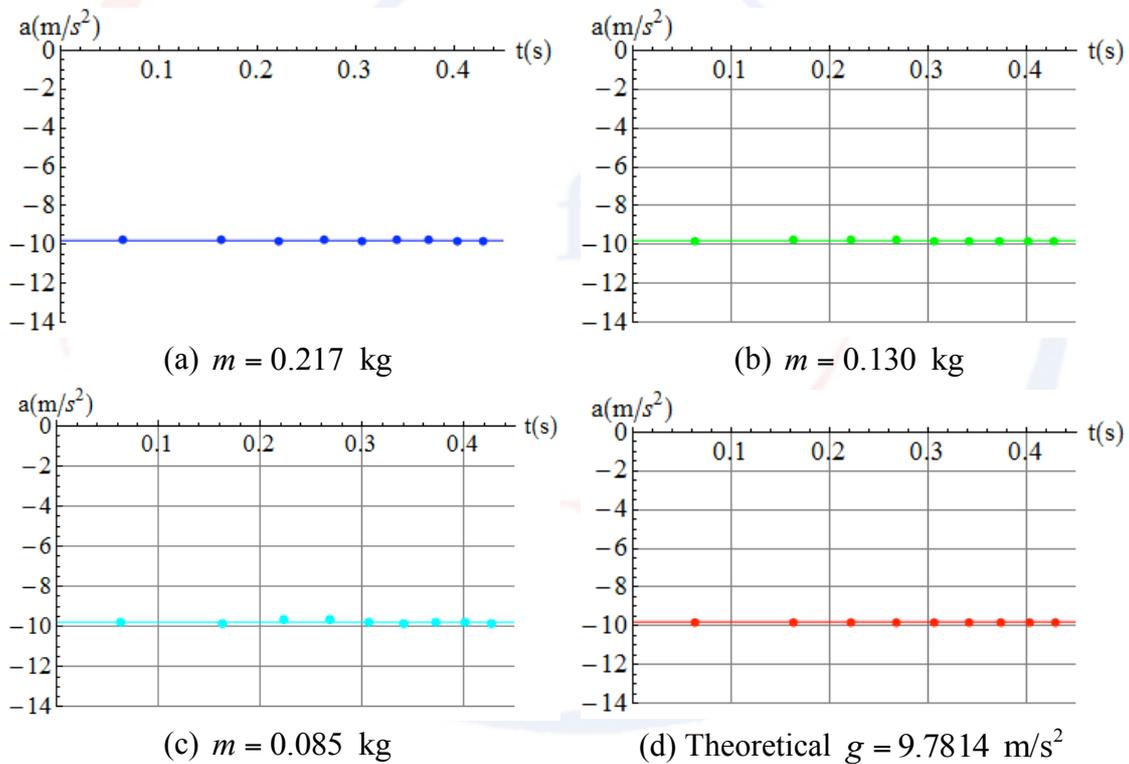


Figure 10 The relationship of acceleration of gravity vs. time.

The relationship of acceleration of gravity and time appears to be linear. Acceleration of gravity is not proportional to time but constant. The experimental graph and the calculation graph are in good agreement.

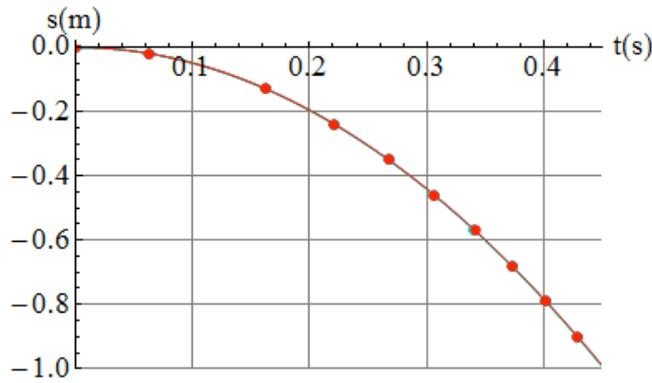


Figure 11 The relationship of displacement vs. time of 3 different mass compared to displacement vs. time of theoretical calculation.

Displacement and time of 3 different mass and of theoretical calculation plotted on the same chart. The 4 curves show no overlapping that means the experiments and the theoretical calculation yield good agreement result.

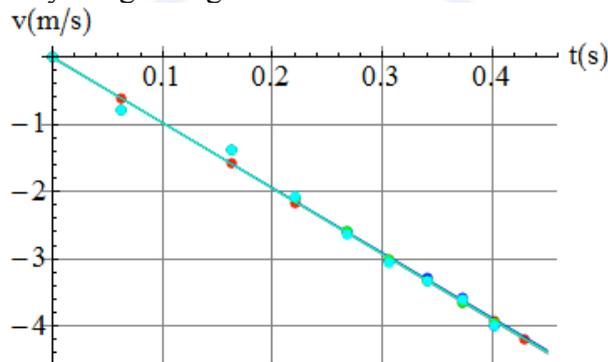


Figure 12 The relationship of velocity vs. time of 3 different mass compared to velocity vs. time of theoretical calculation.

Velocity and time of 3 different mass and of theoretical calculation plotted on the same chart. The 4 curves show no overlapping that means the experiments and the theoretical calculation yield good agreement result.

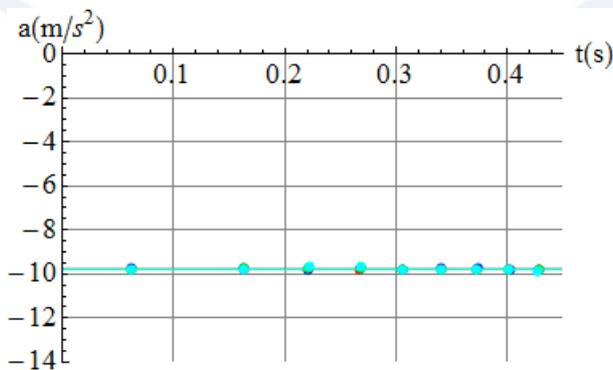


Figure 13 The relationship of acceleration of gravity vs. time of 3 different mass compared to acceleration of gravity vs. time of theoretical calculation.

Acceleration of gravity and time of 3 different mass and of theoretical calculation plotted on the same chart. The 4 curves show no overlapping that means the experiments and the theoretical calculation yield good agreement result.

### **Effectiveness of the computer-based experimental set with the Physics lesson of free falling object.**

The computer-based experimental set together with the lesson is tested in Physics classes according to Constructivist approach. To find out whether the effectiveness of the experimental set together with the lesson reaches the fixed criterion at 70/70, 6 classes of 186 upper secondary students (M.4 or grade 10 of the year 2013) in Princess Chulabhorn's College and Triam-U-dom Suksa school Nakhon Si Thammarat Thailand were set to be purposive samples. Pre-test, post-test, post experiment exercise, achievement test and satisfaction test were assigned to the samples during 6 periods of the instruction.

We compared post experiment test score to achievement test score as 77.43/70.29. From the scores, we concluded that the effectiveness of the experiment set together with the lesson perfectly reached the criterion at 70/70.

Table 2 Pre and post achievement scores

School	Level Grade 10 6 classes	Number of samples (N)	Pre-test		Post-test		t-test
			$\bar{x}$	S.D.	$\bar{x}$	S.D.	
Princess Chulabhorn's College	4/1	24	12.23	3.45	17.90	3.83	6.81**
	4/2	24	12.36	2.97	17.71	3.38	10.38**
	4/5	24	11.20	3.26	18.30	2.60	7.15**
	4/6	24	10.42	2.61	16.50	1.99	7.13**
Triam-U-dom Suksa school	4/1	45	11.18	2.73	16.20	1.84	9.21**
	4/2	45	11.10	3.26	18.80	1.98	9.92**
	Total	186	11.42	3.05	17.57	2.55	20.37**

\*\* Significant at 0.01

Comparing pre to post achievement mean score, we found 0.01 significant difference. This leads to the consumption that samples exposed to Computer-based experimental set together with the Physics lesson of free falling object according to Constructivist approach have higher post achievement score than pre achievement score. The consumption is in good accordance with the hypothesis.

### **Satisfaction to the Computer-based experimental set together with the lesson.**

We invented the satisfaction test to find out level of satisfaction to the computer-based experimental set with the lesson through the following topics and the results are shown below.

Table 3 Satisfaction mean scores to the Computer-based experimental set together with the lesson.

Number	Inquired topic	Satisfaction Score			
		$\bar{x}$	S.D.	Level of quality	Ranking
1	Instructor	3.71	0.81	high	3
2	Lesson content and learning activity	3.64	0.87	high	4
3	Documents and teaching aids	3.92	0.81	high	1
4	Learning atmosphere	3.86	0.82	high	2
5	Learning achievement and what can apply from learning	3.57	0.90	high	5
Satisfaction mean of 5 topics		3.73	0.84	high	
Holistic satisfaction		3.80	0.87	high	

The table displays satisfaction scores to the computer-based experimental set together with the lesson in every inquiring topic at a high level. The satisfaction mean scores for all 5 topics reveals at a high level of  $\bar{x} = 3.73$  and  $S.D. = 0.84$ . For holistic satisfaction, mean score also reveals at a high level of  $\bar{x} = 3.80$  and  $S.D. = 0.87$ .

We had invented commercial potential evaluation test for the computer-based experimental set of 6 concerning areas before administered to 5 experts. The evaluation result is shown in table 4.

Table 4 Commercial potential evaluation for the computer-based experimental set.

Concerning Areas	Expert's score						Total conclusion
	1	2	3	4	5	Mean	
1. Markets for the product/Duration in markets	4	4	4	5	4	4.2	Good
2. Potential in business competition/Good replacement for imported product	5	5	5	5	5	5.0	Very Good
3. Production possibility worth for investment Utilizing domestic materials	4	3	5	4	5	4.2	Good
4. Innovative and outstanding features/Patent possession for further commercial development	5	4	5	4	4	4.4	Good
5. Possibility for further development	4	4	4	5	4	4.2	Good
6. Legal, ethical, non destructive to Earth	5	5	4	5	5	4.8	Very Good
Average	4.2	4.2	4.5	4.7	4.5	4.5	Very Good

The commercial potential evaluation mean score from 5 experts is 4.5 out of 5 considered in very good level. Comments and suggestions from experts are summarized as the following.

1. The experimental set can be further developed to work with freeware to reduce the cost.
2. The method of construction can be published or written in textbooks.
3. The prototype can be developed for schools or universities.
4. The experimental set has its potential for commercial competition, if improved for easy maintenance and easy to apply.

## Conclusions

The computer-based experimental set for free falling object was designed, developed and tested for its output. We found experimental  $g = 9.780121 \pm 0.013076 \% \text{ m/s}^2$ . when compared to which of theoretical calculation. When tested in classes with Constructivist approach, students paid full attention to their experiment and performed their experiment actively. One noticeable advantage is students could repeat the experiment as many times as they needed in shorter time to observe real time graphs, and it might be a changing point that Physics experiment is not difficult anymore. The percentage of pre-test and post-test scores are 45.79 and 70.29, and the satisfaction score according to the students' attitude revels at a high level. Lastly we inquired for commercial potential of the set and found its commercial potential at a very good level.

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### *Realising Teacher Quality at the M-Level*

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#### **Abstract**

In Brunei Darussalam the national university is the main provider of initial teacher education. In 2009, undergraduate initial teacher education formerly provided by the University ceased and was replaced by graduate provision through a Master of Teaching (MTeach) degree programme. The goal was to improve the quality of teaching to achieve the national aspiration for a high quality, forward looking education system for all. The national curriculum for schools provides the framework for teaching and learning, and the development of standards for teaching is used for assessing teacher performance. Applicants for the MTeach must demonstrate a high level of performance in a relevant subject and a strong inclination to teach. This change has been challenging for the stakeholders who need the assurance that sufficient candidates will come forward and who want to see evidence of improved performance of both teachers and their students. Changing the system of teacher education to achieve Masters level outcomes is challenging for all involved. We will draw on a range of data sources to explore the issues and the achievements and to evaluate the progress. We also explored the issues at both personal and system levels and report the effect of the strategies used to overcome them. It goes without saying that realising teacher quality is multi-dimensional enterprise. The case of this small state taking progressive steps to change its system of teacher education will add to our knowledge of what is possible and how.

Keywords: Teacher quality, initial teacher education, challenges, Brunei Darussalam

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## Introduction

In 2009, Brunei Darussalam's (henceforth referred to as Brunei) sole provider of English medium teacher education, the Sultan Hassanal Bolkiah Institute of Education (SHBIE) at the University of Brunei Darussalam, became a Graduate School. All undergraduate initial teacher education programmes formerly provided by the university was replaced by graduate provision through a Master of Teaching (MTeach) degree programme. The MTeach became the entry qualification to the teaching profession in the nation. The goal was to improve the quality of teaching in order to achieve the national aspiration for a high quality, forward looking education system for all. The national education system entitled *Sistem Pendidikan Negara Abad ke-21* (in Malay) or translated into English as the 21<sup>st</sup> Century National Education System or better known as SPN21, provides the framework for teaching and learning, and the development of standards for teaching is used for assessing teacher performance.

Applicants for the MTeach must demonstrate a high level of performance in a relevant subject and a strong inclination to teach. This change has been challenging for the stakeholders who need the assurance that sufficient candidates will come forward and who want to see evidence of improved performance of both teachers and their students. Whilst this change met with support at the highest level, changing the system of teacher education to achieve Masters level, or M-Level outcomes is challenging for all involved.

In this paper, we will draw on a range of data sources to explore the issues and the achievements and to evaluate the progress of the MTeach programme offered in this country.

## The Structure of Brunei's MTeach Programme

The MTeach programme in Brunei initially started in August of 2009 with an 18-month duration structure (or 3 academic semesters). There were four streams, early childhood education and care, primary education, secondary education and vocational and technical education. Vocational and technical education stream was a compulsory inclusion because in Brunei, teachers in the vocational and technical institutions must also be certified with the necessary professional qualification for entry into the teaching profession. There are two intakes of student entry per academic year (January and August) into the MTeach programme.

Table 1 below represents the modules that were common across the four MTeach streams. For the first intake, teacher candidates for the secondary education and vocational and technical education streams were required to register for two learning areas and the selection had to be based on the teacher candidate's academic background, for example, Mathematics and Physics, Geography and History and so on. All MTeach teacher candidates were required to register for a research exercise module in the third semester.

Table 1: Common modules across the MTeach streams for the 18-month duration structure

Common Modules		MTeach Streams (18 month)			
		Early Childhood Education and Care	Primary Education	Secondary Education	Vocational and Technical Education
S1	Professional Practice and Seminar 1	√	√	√	√
S2	Professional Practice and Seminar 2	√	√	√	√
S2	Education Research Methodology	√	√	√	√
S3	Research Exercise	√	√	√	√
S1	Frameworks for Learning and the Design of Instruction		√	√	√
S1	Technology, Pedagogy and Content Knowledge		√	√	√
S3	Social and Professional Contexts		√	√	√
S2	Assessment for Learning			√	√
S3	Teaching and Learning			√	√

Note: S1 denotes the module was offered in Semester 1, S2 in Semester 2 and S3 in Semester 3

However, the 18-month duration MTeach programme only lasted four student intakes. In December of 2010, the institute was advised to reduce the MTeach programme to 12 months. The reason was to offer a graduate diploma level programme, an alternative qualification, lower than a masters, to those who do not qualify for admission to the MTeach programme. And for the benefit of accepted applicants, both programmes had to be within a 12-month duration. Furthermore, we were also advised to create another stream in the MTeach programme for applicants intending to apply for Higher Education.

By January of 2011, with immense pressure, efforts were made to revise and condense the 18-month MTeach programme down to a compact 12-month programme structure. The term 'areas of specialisation' then replaced the word 'streams', some modules were omitted, recoding of the modules had to be made and the research exercise module instead had to be completed within the May to July period. A period usually meant for the long semester university holidays where members of staff take their much needed breaks to rest, recuperate, go on holidays and for some, embark or continue their research writing.

In August of 2011, SHBIE was ready to take on the third cohort (or the fifth intake) of the MTeach teacher candidates. There were then five areas of specialisation in the MTeach programme, namely early childhood and care, primary education, secondary education, vocational and technical education, and higher education. All modules listed Table 1, except for the social and professional contexts module had been retained. The excluded module was replaced with the module called leading,

managing and institutionalising change. Inevitably, reducing the programme also meant slashing the total number of modular credits for the programme from a total of 60 in the 18-month to a total of 48 modular credits applicable across the five areas of specialisation.

A review of the 12-month programme was essential and timely especially within the one year of its implementation. Focus group interviews were conducted in the months of May and June 2012 with 12 selected MTeach teacher candidates representing the four areas of specialisations except early childhood and care, and separately with the MTeach lecturers. Based on the interviews, in relation to the present MTeach programme structure, some pre-service teacher candidates were in agreement to extend the 12-month MTeach programme to a year and a half or more. The main reasons given to this was to manage time between assignments and school placement workload. And their coursework will also include the 8 modular credit research exercise module. However, in-service teacher candidates disagreed by stating that a 12-month MTeach programme was sufficient. It was understood that in-service teacher candidates were only given one year study leave from their work by the government of Brunei with an in-country full in-service training scheme in order to enrol in this programme. There were even suggestions to have separate programme structures for pre-service and in-service teacher candidates.

### **Challenges and Resistance to the Changes**

Here we will share the challenges we have encountered in our journey thus far in relation to implementing the MTeach programme in the institute. Changing the system of teacher education to achieve Masters level outcomes is challenging for all involved.

Drastic changes and shifts in norms of this nature in developing and in the implementation of this new graduate initial teacher education degree in the context of Brunei has, as one would expect come with its criticisms and resistance from many forces in the academia and the public. Among them were the notions that scraping off completely the previous undergraduate bachelor degree programmes in Education was seen as unwise and disaster will mostly likely to prevail. What critics failed to realise was that not just anybody could become a teacher. Applicants for the MTeach must demonstrate a high level of performance in a relevant subject and a strong inclination to teach.

Previously, students were able to enter the teaching undergraduate programmes with lower qualifications than their peers elsewhere in the university. As such, they had significantly less time to develop their subject expertise (four years including professional preparation in teaching) as opposed to a conventional four year degree followed by up to a year for the MTeach. Under the special scholarship scheme for teachers bestowed by His Majesty's Government of Brunei Darussalam through, among others the Ministry of Education and the Yayasan Foundation, many more Bruneians have graduated from overseas such as the United Kingdom, Australia and Malaysia, in specialised subject areas such as English Language, English Literature, Engineering and Mathematics and so on.

Accordingly, these overseas graduates come with specialised undergraduate content degrees, and since they are bonded from the scholarship to work under the government of Brunei as Teachers, one of the requirements is to enrol in the MTeach programme offered in SHBIE. Majority of the Brunei government scholars opted to enrol immediately once they graduated overseas, others required more time such as a short rest period before embarking on further studies at a graduate level. There were even a few others who chose to embark on a working path as uncertified teachers knowing that they will eventually be instructed to pursue MTeach within 3 years in their beginning teaching careers. This was another challenge we encountered. We cannot force any individuals to pursue MTeach unwillingly. We can advise and make suggestions as in pursuing MTeach first will be better in the long run before they start their teaching careers. The programme may help in equipping them with the necessary pedagogical tools and experience needed. Besides the above mentioned overseas applicants, SHBIE also received applications from local graduates such as those from the university itself and other higher institutions in the nation.

The institute, in encountering resistance to the education revolution changes is not alone in facing these forces undermining the commitment to improve the quality of teacher education. Other countries such as the United States such so-called ‘attacks on teacher education’ are frequent. In spite of all these arguments and debates, one of our observations concurs with the statement by Darling-Hammond (2010) “Rarely do these arguments address the implications for schools that are largely staffed by underprepared teachers and the children they serve” (p. 37).

The second of many challenges faced was in raising the new graduate initial teacher education programme to a Master level (or M level). Such paradigm shift proved to be difficult for some stakeholders to accept, and as a result, the institute faced resistance in the first couple of years of change. Nevertheless, as was suggested by earlier consultants to the institute, we needed to refer to the UK’s Quality Assurance Agency for Higher Education Framework, or the QAA as a starting point in order to design a professional programme that fully meets the standards of a master degree within the university. Course leaders not only referred to the QAA, but also to the Australian Qualifications Framework, or the AQF. These two frameworks, the AQF and the QAA, became the basis in designing the MTeach programme in order to achieve QAA Level 7 or AQF Level 9 equivalent outcomes (AQF, 2011, 2013; QAA, 2008).

However, it is also important to note that all these qualifications are described in terms of outcomes and in terms of progression. As mentioned earlier, a proposal in another development of the initial teacher education was also offered that provided an alternative initial teacher education qualification at a level lower than Masters. And this was the Graduate Diploma in Education, designed to achieve QAA Level 6 or AQF Level 8 (equivalent) outcomes. A summary of the level descriptors of these two graduate initial teacher education programmes are provided in Table 2 below.

Table 2: Level descriptors for Brunei's initial teacher preparation programmes

Qualification	Level	For admission	Duration	Specialisms
Master of Teaching	QAA Level 7/ AQF Level 9	<ol style="list-style-type: none"> <li>1. Normally a university degree with at least second class honours in an appropriate subject;</li> <li>2. Achievement of the University language requirement;</li> <li>3. Successful performance at interview.</li> </ol>	2 Semesters + Research	Early Childhood Education and Care, Primary Education, Secondary Education (by curriculum subject), Vocational and Technical Education and Higher Education
Graduate Diploma in Education	QAA Level 6/ AQF Level 8	<ol style="list-style-type: none"> <li>1. A university degree in an appropriate subject;</li> <li>2. Achievement of the University language requirement;</li> <li>3. Successful performance at interview.</li> </ol>	2 Semesters + practicum project	Early Childhood Education, Primary Education, Secondary Education, Vocational and Technical Education, Special Education and Counselling

The third challenge encountered was in terms of partnership with the schools or institutions in Brunei and the quality of the internship. Embedded in the programme are two professional practice and seminar modules where teacher candidates attend assigned schools or institutions for a minimum two days a week throughout the programme in addition to six weeks of full time engagement in schools or institutions and attend university campus in the afternoons or evenings to follow taught modules. Drawing from the best practices of teacher education across the globe, teacher candidates are supported by a team of school mentor, subject specialist and clinical specialist. The subject specialists and clinical specialists from SHBIE regularly visit the teacher candidates in schools or institutions forming a quadripartite professional partnership that includes a teacher mentor from the school or institution and the teacher candidate continuously reviewing the progress of the teacher candidate using teacher professional standard benchmarks which focuses on student learning. Fortnightly or bi-weekly seminars with teacher candidates are chaired by the clinical specialists in partner schools. The intention is to monitor and progress performance. Emphasis is also placed on teacher candidates working in teams to carry out action research in schools supported by modules taught in the University.

This being said, the initial allocation of teacher candidates' placements in partner schools or institutions was not always smooth. Often, some schools or institutions refused to accept our teacher candidates even though permission was granted from a higher authority such as the Department of Schools at the Ministry of Education. The

basis of refusal given was that they do not require more teachers in their schools or institutions; there are no mentors to guide the teacher candidates in their respective subject area; the students in the particular schools or institutions will be sitting for the public examinations such as O Level or A Level and hence they do not want to jeopardise the students' chances by having a new teacher teaching the students, and many more pretexts. Consequently the Programme Leader in-charge of school partnership would then have to relocate the affected teacher candidates to another school in the hope that other schools will be willing to accept. Brunei is a small nation with a total of just over 30 government secondary schools across the four districts. The targeted secondary schools that were pre-selected were mainly recommended by the Department of Schools with justifications that good senior mentors will be available to guide our teacher candidates. However, availability may not necessarily mean willing. If a school does accept, the mentorship may also befall onto another colleague who cannot refuse because the instructions may come from the school leaders or administrations. The implications of this happening may come at a cost to the teacher candidate who expected a mentor who is willing to guide and assist in their experience as a beginning teacher.

The quality of the internship is another continuous challenge we encounter every semester. In a situation where schools are just coming to terms with a new national curriculum emphasising a learner centric approach to replace what has previously been, in the main, teacher centric one. These, more than often evidenced in schools or institutions where emphases on the results of public examinations are prevalent. Teacher candidates shared their views with us during the many seminar sessions with the clinical specialists. Sometimes these sessions are seen as a way to release their frustrations of their mentors and the way lessons are taught by the mentors themselves or other teachers whose lessons they went to observe. It has also been difficult for the institute to identify mentors who share the underlying philosophy of teacher education in the MTeach programme.

Other challenges met were in the recruitment of applicants in the primary and early childhood areas. Majority of the applicants opted for either secondary education or vocational and technical education since these two areas mainly focused on the teacher candidates' disciplines or learning areas from their undergraduate degrees, and for some their first master degree qualifications. Over the years, it was not easy for us to attract applicants to enrol in the MTeach early childhood education and care and primary education areas of specialisations. Applicants must show interest and sincere passion to become teachers in these areas. Even if they show the characteristics desirable as early childhood or primary teachers, many will not make the cut during the interview process because they may not have the minimum grades required. Applicants will need at least a Credit C6 in their GCE O Levels (or equivalent) subjects comprising of English Language, *Bahasa Melayu* (Malay Language), Science and Mathematics. A good background content knowledge in these subjects will help them secure a place as potential MTeach early childhood education and care and primary education teacher candidates of the programme. One of the rationales was that once they become fully certified teachers, we could not guarantee that they will be specialising in teaching one subject area in the primary schools in Brunei. Primary school teachers in Brunei are typically required to be generalist teachers, teaching many subject areas across the primary levels. The modules that are offered in the MTeach area of specialisation of primary education will equip teacher

candidates with the pedagogical content knowledge required for their future careers as primary school master teachers.

### Signs of Success of the MTeach Programme

Despite the challenges, we share here the signs of successes of the MTeach programme. The first cohort of 17 MTeach teacher candidates enrolled in the first semester of the Academic Year 2009-2010. As shown in Figure 1, the number of enrolments has slowly but steadily increased over the past four years since the programme was introduced. And in Figure 2 are the frequency of the MTeach teacher candidates enrolled in each of the five areas of specialisations.

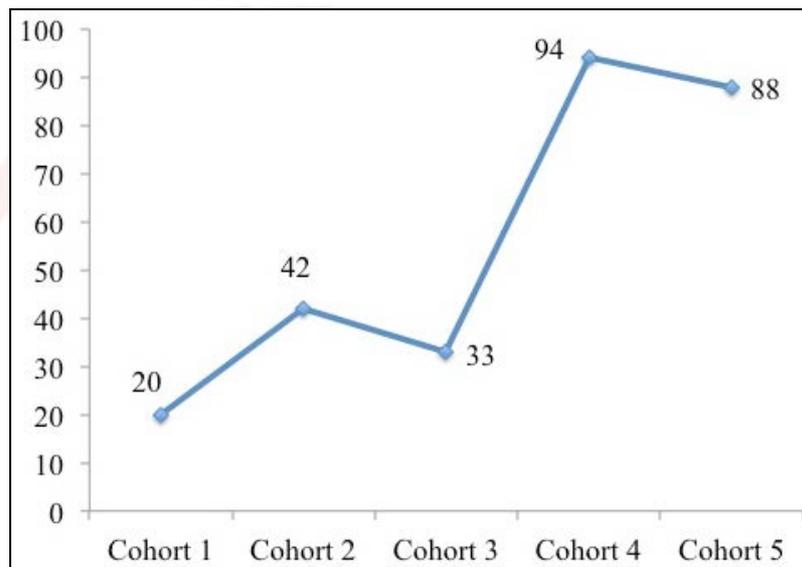


Figure 1: The number of MTeach teacher candidates enrolments

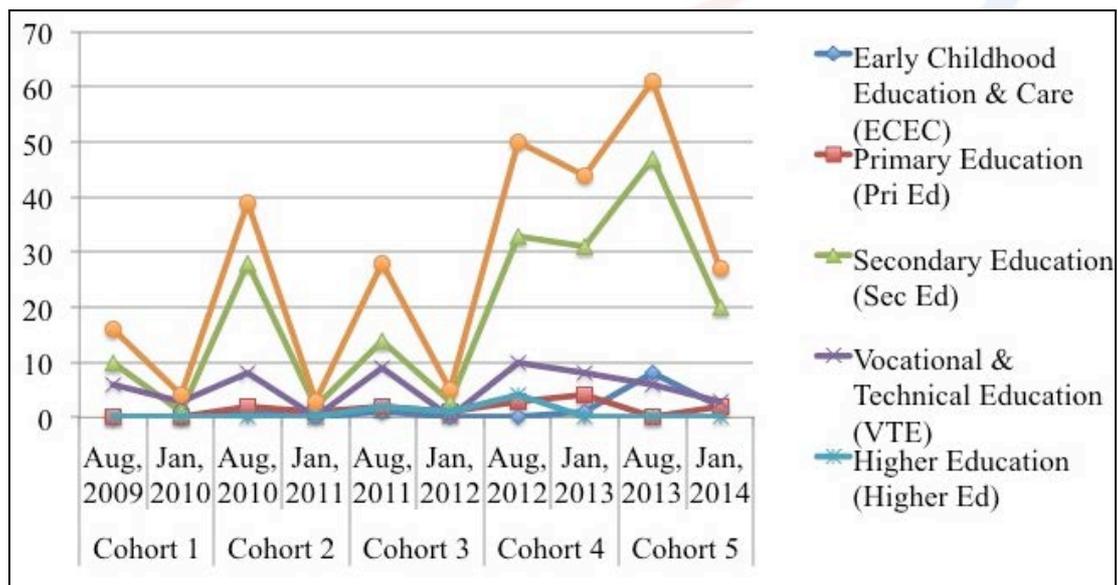


Figure 2: The frequency of MTeach teacher candidates enrolled in each five areas of specialisations

As of September 2013, SHBIE has proudly produced 86 MTeach graduates ranging across the five areas of specialisation from 2011 until 2013. We are expecting 90 more to graduate in September this year, and tentatively, an estimated 122 to enroll in August. The most numbers of enrollments we have see so far. The programme has also attracted international teacher candidates from Australia, Ghana, India, Malaysia, Nigeria, Singapore, the Sultanate of Oman, Thailand and Uzbekistan. Upon entry, teacher candidates' academic background ranged from bachelor, master and doctoral degrees.

Apart from the increased number of applications and subsequently increased enrolments in the programme, there has been other several indications of success from the MTeach programme as well. As part of SHBIE's quality assurance procedures, a preliminary study was conducted on the performance of the first cohort of teachers who graduated from the MTeach programme. A research team led by SHBIE colleagues interviewed a sample that comprised of principals, deputies, heads of departments and mentors in the respective schools in Brunei where the MTeach graduates were assigned once they had completed the programme (from the preliminary report by Zailani, Abd Latif & Jaidi, 2011). The preliminary findings provided us with formative evaluation on the effectiveness of the MTeach programme. The overall findings revealed that the first cohort of MTeach graduates has been well received in the workplace. Responses gathered from the interviews with the sample population indicated that the MTeach graduates had begun to develop the skills and knowledge to become not only effective teachers but also teacher leaders which make them distinctive from other teachers with other education backgrounds. There may likely be other range of factors that contributed to the refined dispositions of the MTeach graduates in becoming effective teachers and leaders. Never the less, the responses collected from this preliminary study have shown that the MTeach programme has made a positive contribution towards the development of such qualities. A compilation of the categories and the respective distinctive features of the MTeach graduates from the first cohort, taken from the preliminary study report are displayed in Table 3.

Table 3: Compilation of the categories and the respective distinctive features of the first cohort MTeach graduates, taken from the preliminary study report by Zailani, Abd Latif and Jaidi (2011)

Categories	Labels	Distinctive Features
In the teaching of the MTeach graduates	Teaching quality	<p>Ability in employing current methods of teaching, e.g. student-centred learning</p> <p>Knowledgeable and highly skilful, e.g. in ICT and technical skills</p> <p>Shown initiative in varying strategies for teaching, e.g. the use of Internet</p> <p>Highly-motivated in creating interesting lessons</p> <p>Highly-committed in ensuring students' understanding of the lessons</p> <p>Well-organised in planning the lessons</p> <p>Ability to share new ideas and teaching strategies during discussion with their colleagues</p>

The conduct of non-teaching	Non-teaching commitment	Displaying collaborative and cooperative skills whilst working with other staff members Highly-committed in accomplishing every task given Displaying creativity and innovation in planning events or programmes for the school
The MTeach graduates' disposition	Strong qualities	Displaying leadership qualities Ability in initiating new ideas or changes, futuristic-minded, pro-active Positive rapport amongst staff members and students Displaying strong communication skills
Changes in attitudes before and after MTeach	Attitudes	Better confidence in dealing with students Better confidence in verbalising personal thoughts and ideas with staff members More focused in teaching in terms of planning and conducting their lessons Enhanced leadership skills
Comparisons between the MTeach graduates and other teachers with other educational background	Evident qualities	Salient leadership skills amongst MTeach graduates were quite evident when compared to others They adopted better teaching methods when compared to other teachers Their communication skills were stronger and much better than those of other teachers Lessons conducted were more student-oriented when compared to other teachers They showed abilities in initiating changes to the school system in a short period of time

Below are some quotes from the sample in relation to ensuring the effective delivery of the lessons by one of the MTeach graduates.

*"I can see that she's more into teaching now than I saw her in (her previous school). She's now more...very committed, more towards teaching.....we can see her, even in the staffroom, talking more about teaching, you see. And that is something I'm pleased to see.... even casually talk about how to improve their teaching."* (Principal of a Sixth Form Centre)

And in comparing the MTeach graduates to other teachers from different education background.

*"The difference is the Diploma teachers is more on teaching methodologies but for MTeach teachers...they have the whole package; their teaching methodologies; they have leadership characteristics, and they are very strong in terms of their communication..."* (Deputy Principal of a Vocational and Technical Education college)

During the State Meeting of Legislative Council held in Brunei on 16<sup>th</sup> March 2013, the Education Minister highlighted that the MTeach degree offered by the University has met international standards. He was referring to the Research Report published in September 2012 entitled *"An Assessment of International Teacher Training Systems:*

*Equivalence for England*” by The National Recognition Information Centre for the United Kingdom (UK NARIC) for the UK Department of Education (DfE) (UK NARIC, 2012a, 2012b). The Minister’s speech immediately sparked quite a few criticisms undermining yet again the success of our MTeach programme. Comparisons of initial teacher training programmes from other countries were made and suggestions were put forth as to how the MTeach programme can be further improved.

In summary, although we drew upon the best practices of teacher education globally, ultimately, we also have to consider the uniqueness of Brunei and the context of its education system. Darling-Hammond and Lieberman (2012) stated that “The changes that are needed to build a strong profession of teaching can meet the challenges around the globe will require us to learn from each other about what matters and what works in different contexts” (p. 169). The Brunei education reform continues to demand ‘excellence in teaching and learning’ to achieve the nation’s aspiration of the status of a developed country by 2035. The MTeach programme will continue to aim to produce a caring community of teachers with sound ethical character and leadership skills coupled with a strong knowledge in subject content and pedagogical content knowledge, capable of using technology for effective knowledge building, and ability to construct new learning opportunities for the teacher candidates, their students as well as colleagues. Essentially, the education system in Brunei is changing in line with the current education trend and practices of the 21<sup>st</sup> century.

As mentioned earlier, the practical experience in schools or institutions provides opportunities for teacher candidates to examine their own teaching through reflections and seminars with mentors, specialists and peers. In summary, the MTeach programme, therefore, could also be viewed in getting our educators to think about their own practices.

Another sign of success was seen from our MTeach graduates and soon-to-be graduates entrusted with the task of being an MTeach mentor themselves. Typically, a mentor’s task was given to senior teachers in schools or institutions as was evidenced from the appointment of cooperating teachers prior to 2009. This shows the trust being laid down to them by the school or institution leaders, in regards to their capabilities, as a powerful indication of their contributions to the qualities achieved from being in the MTeach programme.

Additionally, a few of our MTeach graduates and future graduates have presented and published their research exercises and assignments in conferences and journals (such as, Kani et al., 2014; Khoo & Chin, 2012; Nor & Shahrill, 2014; Omar et al., 2014; Salam & Shahrill, 2014; Yassin & Yong, 2013). Indeed, these accomplishments signified the contributions to their respective areas in education. At the national level, this could be viewed as a significant sign of success in raising the quality of our educators.

Presented in Figure 3 are some of our MTeach graduates’ testimonials in relation to their enrolment in the MTeach programme in SHBIE. Note that names used here are pseudonyms.

*“The course was useful in re-engineering my teaching skills. Among others, I have learnt to use critical self-reflection on my teaching as a tool to improve my lessons.”* (Ariana, MTeach graduate from the 2<sup>nd</sup> cohort)

*“MTeach programme has enriched me with knowledge that is very useful for my future career, and because of this programme I have gained confidence in further projecting myself as well as to be part in the learning curve in exploiting the locus of teaching and learning.”* (Hamzah, MTeach graduate from the 2<sup>nd</sup> cohort)

*“The most valuable insight I gained from the course is that being a good teacher involves helping students build their own concepts and understanding rather than enforcing our concepts on them. Not only does this approach prove useful, it also helps to maintain a higher level of involvement and engagement from the learners.”* (Alisha, MTeach graduate from the 1<sup>st</sup> cohort)

Figure 3: Testimonials of MTeach graduates

## Conclusion

In this paper, we have provided an overview of the graduate initial teacher education offered in Brunei Darussalam, namely the MTeach programme. The road we have travelled from when the institute SHBIE underwent a significant transformation in becoming a graduate school of education. Thus radically transforming initial teacher preparation in Brunei from an essentially undergraduate model where subject content and pedagogical content were taught separately within a four-year undergraduate programme to a graduate level education model. Moreover, the latest developments in re-structuring the programme from an 18-month to a 12-month structure, the increased numbers of prospective applicants applying and subsequently enrolling in this programme, the challenges we faced and the strategies we implemented to overcome these challenges, and also the signs of triumphs that defied those sceptics on the successful implementation of this programme.

We aim in continuing the quest in monitoring and reviewing the progress of the current MTeach structure, its modules and the practice of linking theory to practice, and teacher candidates' experience in the programme as well as in their internship experiences. Building on new designs for teacher education will definitely need to rest on strong partnerships in the context of meaningful involvement by key stakeholders in the education process (Gopinathan et al., 2008). Hence we foresee many more consultations and collaborations with the relevant departments (specifically the Department of Schools, Department of Technical Education, Department of Human Resource Development and the Scholarship Unit) of the Ministry of Education, our major stakeholder, and other relevant ministries, in enriching and improving the quality of teacher education in Brunei.

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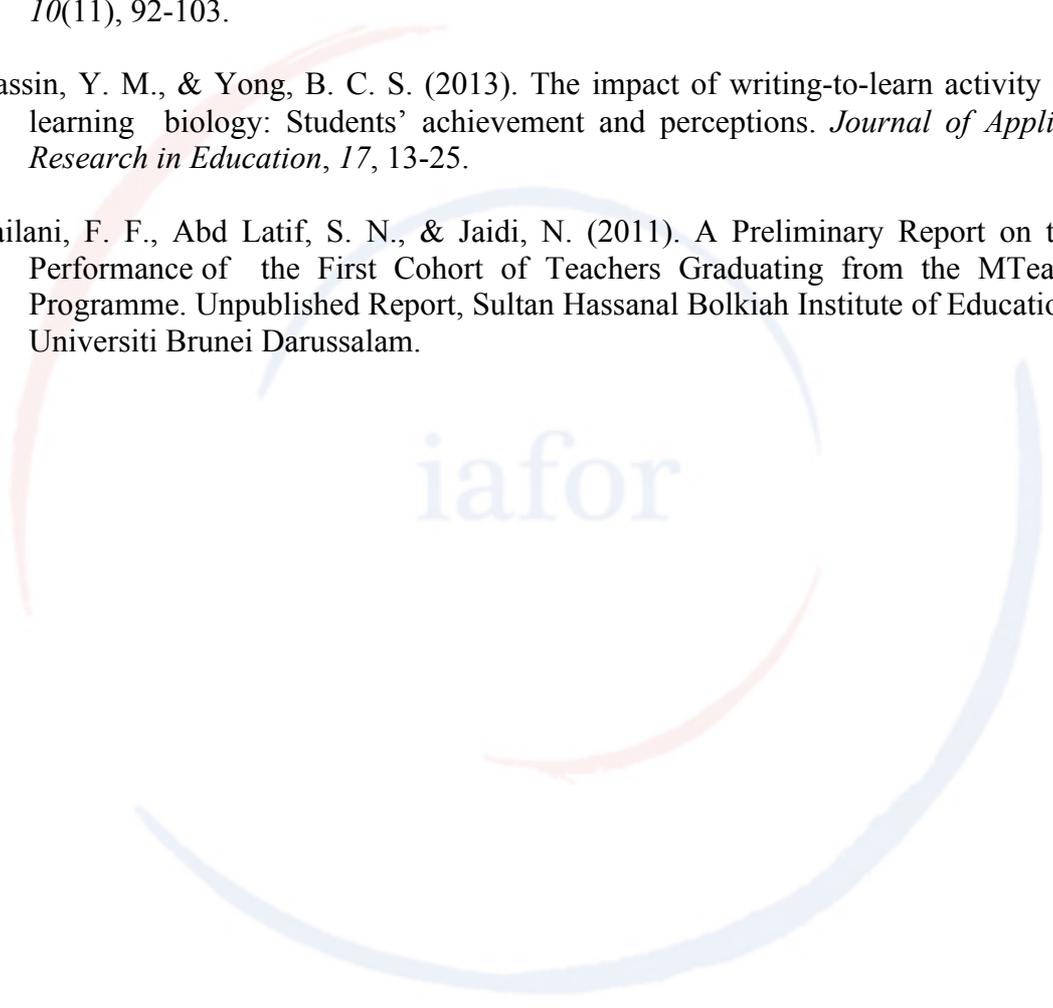
We express our deepest gratitude to the following people for their respective contributions in this on-going journey. *Dr Hjh Romaizah Hj Mohd Salleh* (Deputy Permanent Secretary at the Ministry of Education, Brunei Darussalam and the previous Dean of SHBIE), *Professor Dr Keith J. Wood*, *Associate Professor Dr Saratha Sithamparam*, *Associate Professor Dr Quintus Perera*, *Fifi Faulina Haji Zailani*, *Siti Norhedayah Abd Latif*, *Noradinah Haji Jaidi*, *Hjh Noor Ehsan Hj Kaseh*, MTeach subject and clinical specialists, SHBIE lecturers, MTeach mentors, graduates and teacher candidates.



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***Case Study: University of Experience and New Technologies Subject***

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The European Conference on Education 2014  
Official Conference Proceedings

**Abstract**

The University Program of the Experience (UPE) at the University of Salamanca (Spain) includes three courses that consists of three obligatory subjects of 10 hours each one, three optional subjects of 10 hours each one and a minimum of 15 hours for complementary activities (conferences, monographic courses, cultural trips, etc.).

The University for mature students is an initiative promoted by the Regional Government, in which all the Universities of the Autonomous Community collaborate. The UPE is a scientific, cultural and social program to integrate people older than 55 years into the University, with the idea of lifelong learning. People assisting these courses are very varied: people with university studies, other with baccalaureate certificate, and others with no previous studies.

One of the optional subjects is New Technologies that includes topics from analogical and digital technologies, convergence between the fields of the computer science, Electronics and Telecommunications, to the Internet repercussion in the areas of the knowledge, the economy and the leisure or the nets of communication and mobility like satellites, telephony of third generation, and Wifi.

In this paper we will analyze the adult learning, and the case of the University of Experience at the University of Salamanca. The subjects, the contents, the motivation, the objectives and the skills to be acquired, are completely different from the ones from students of 18 – 25 years old, which start their studies after finalizing the High School or a Higher Technical Cycle.

Keywords: adult learning, mature students, lifelong learning, technology.

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## Introduction

The Declaration of the Fifth International Conference on Adult Education organized by UNESCO in Hamburg in 1997 (UNESCO, 1997) establishes that lifelong learning is more than a right; it is one of the keys of the XXI century. “It is both a consequence of active citizenship and a condition for full participation in society. Adult learning can shape identity and give meaning to life. Learning throughout life implies a rethinking of educational content to reflect such factors as age, gender equality, disability, language, culture and economic disparities” (Ireland, 2014). Lifelong learning must give each individual the ability to direct his destiny in a world in which the acceleration of change, together with the phenomenon of globalization, tends to change the relation between people and space and time (Delors, 1998). Therefore, education has to adapt all time to changes in society, it must continue the transmission of acquired knowledge, the principles, and the fruits of experience (Welton, 2013).

The Universal Declaration of Human Rights (Assembly, 1948), in the 1st paragraph, of Article 26, recognizes the right of everyone to education, as well as the higher education that shall be equally accessible to all on the basis of merit. The Amendment of the Organic Law on Universities (Lou): Law 4/2007, of April 12, is centered in a clear and precise way on the topic with which we are concerned. Thus, in the Preamble says that Universities' must also respond to the training needs throughout life and should be open to those who, at any age, want to access to any cultural or educational opportunities. Especially significant is the inclusion of a new paragraph in Article 42 related to facilitate the retraining and professionals' rehabilitation, and also the full and effective participation in cultural, economic and social life. The Government, after receiving a report from the University Council will regulate the procedures for accessing to university by people with a particular work or with professional experience, that do not have the legally required educational qualifications. The access to this system will include people who, unable to demonstrate such experience, have passed a certain age.

Everyone should have the opportunity to train throughout life, inside and outside the educational system, in order to acquire, update, add to, and expand their skills, knowledge, abilities, and aptitudes for personal and professional development (Organic Law 6/2001, of 21 December, on universities).

In Spain, the first university program for older people began to take off during the nineties. It was a consequence of the demographic growth of this group of the population, which could not receive training and education apart from literacy. The goal of this program was satisfying the training needs of people over 50. This group wanted in the past, and they also continue carrying out activities that allow their personal development; updating knowledge, learning and using the needed techniques and tools that enable them to enter on the knowledge society and information. To attend to the University for the first time and even to get a possible access to other university degrees studies with official recognition become a reality.

There is an early stage that serves as a reference and had an impact on the development of studies for older people in Europe. That initial fact was the birth of the first university for seniors in France. This event is the “seed” that influences decisively over time in many educational experiences with older people. The birth and

development of the first university for seniors takes place at the *Université des Sciences Sociales* in Toulouse, the 23rd of February, 1973. At that French university, the University Council of the *Unité de Enseignement et de Recherche* creates the *Université du Troisième Âge* under the direction of Professor on International Law Prof. Pierre Vellas (see more information at <http://www.aepumayores.org/>).

The first step to get those university studies for older people in Spain took place some years after the first European experience. In 1978, the General Division of the Family proposed and signed several agreements with different private cultural organizations to promote those studies. Moreover, it is from the last decade of the twentieth century where the university programs for adults, with different names (University of Experience, Classroom Experience, Senior's University, etc.) appear in Spain, as a response to university-level education for older people. The University of Alcalá de Henares, the Pontifical University of Salamanca, and the University of Granada were pioneers on these initiatives.

In 1992 in Spain, some public services (residential services for the elderly, centers for the disabled, home of pensioner) were transferred to the autonomous communities; and the new social policies for the elderly and disabled were organized and structured. Once the first university experiences have been consolidated in 1993 (University of Alcalá de Henares, Pontifical University of Salamanca, and the University of Granada), new similar projects born in different territories and universities. Nowadays, the National Association of University Elderly Programs (AEPUM, *Asociación Estatal de Programas Universitarios de Mayores*) includes more than 50 experiences, among partner members, full members, and other entities that develop some kind of training for seniors.

### **The University Program of the Experience at the University of Salamanca**

The university program of the experience at the University of Salamanca is an initiative funded by the Castilla y León Regional Government and carried out in collaboration with all public and private universities in the Community. Since its creation, the program has been attracted a greater number of older people. In fact, in the first year, 1993-1994, 60 people were registered, while the number of students in the last year reached almost 4300. Forecasts point to a similar participation in this course.

This UPE is under the programs for active aging, which aims to give older people the chance to access to culture and science as a formula for personal growth. The objectives of this UPE could be summarized in the following items:

- To facilitate the approach of older people to culture and science as a means of expression of experiences and knowledge.
- To promote the exchange of relations, becoming the university environment in a context of social and intergenerational relationship.
- To promote learning and personal growth through reflection and dialogue.

The UPE offers knowledge on current issues, cultural activities, teaching methodology adapted to the elderly, the necessary material needed for each subject, the university faculty as teachers and tutors. Moreover, the students have access to all

the university facilities. After the completion of three academic years, students will receive their accreditation by a university diploma.

The program duration is three academic years, with a total of 60 hours minimum for each of them, and each course includes three mandatory 10-hours subjects, three optional 10-hours subjects, and a minimum of 15 hours for additional activities like conferences, specialized courses, cultural tours, etc. For the UPE that will start this year, these possible subjects are:

- Mandatory subjects:
  - Psychology (1st year)
  - Interpersonal communication (1st)
  - The history of Castile and Leon (1st)
  - Sociology (2nd)
  - Spanish literature (2nd)
  - Ecology and environment (2nd)
  - Politics and society (3rd)
  - Introduction to Law (3rd)
  - Health and quality of life (3rd)
- Optional subjects
  - Education development and citizenship
  - Performing arts: music, theatre and dance
  - Current scientific advances
  - New Technologies
  - Introduction to philosophy
  - Local history
  - Contemporary art
  - Population, migration and interculturality
  - Latin American culture
  - Physics and chemistry of everyday life
  - Consumer education and active ageing
- Complementary subjects
  - Cyber security and the administration
  - Important painters
  - Romantic opera
  - Literature and cinema
  - Women in Democracy
  - Romanesque art

### **New Technologies Subject and Methodology**

One of the optional subjects in the UPE is: New Technologies. This subject includes topics from analogical and digital technologies, convergence between the fields of the computer science, electronics and telecommunications, to the Internet repercussion in the areas of the knowledge, the economy and the leisure or the nets of communication and mobility like satellites, telephony of third generation, and Wifi. The New Technologies subject includes the following 6 modules:

1. Analog and digital technologies.
2. Convergence between the fields of computer, telecommunications, and electronics.
3. Birth and development of the Internet.

4. Impact of the Internet in the fields of knowledge, economy and leisure.
5. Multimedia communication.
6. Communication networks and mobility (satellites, third generation telephony, wireless).

The modules, the topics, the motivation, the objectives and the skills to be acquired, are completely different from the ones from students of 18 – 25 years old, which start their studies after finalizing the High School or a Higher Technical Cycle.

As the group of students attending to this subject is from different level of preparation, the methodology must be according to that. The goals of the students attending the university program of experience and the aspects that assure their quality of life are the same. Some of those most important elements that we could mention are (Kim et al., 2004; Escuder-Mollon et al., 2014; Rothes et al., 2014): the independence from their family, being included in society as part of a community, motivation, energy, and capacity for changing, satisfaction with the things they do, personal and emotional development in attitudes and values, dignity, equality, justice, enjoying their spare time, being productive, or doing useful and constructive things.

The students enrolled at the University of Experience are a diverse group, not only because the age, but for the heterogeneity. There are different levels of knowledge in the group of students. Some of them have university studies but others left school after mandatory education. The New Technologies subject is a course with a didactical focus, highly practical and in the educational level of the students. As we are several teachers who impart the subject, we can make groups depending on the level of students and the number of students enrolled. Every new course we are looking towards the possibility of conducting new practice sessions in the computer lab.

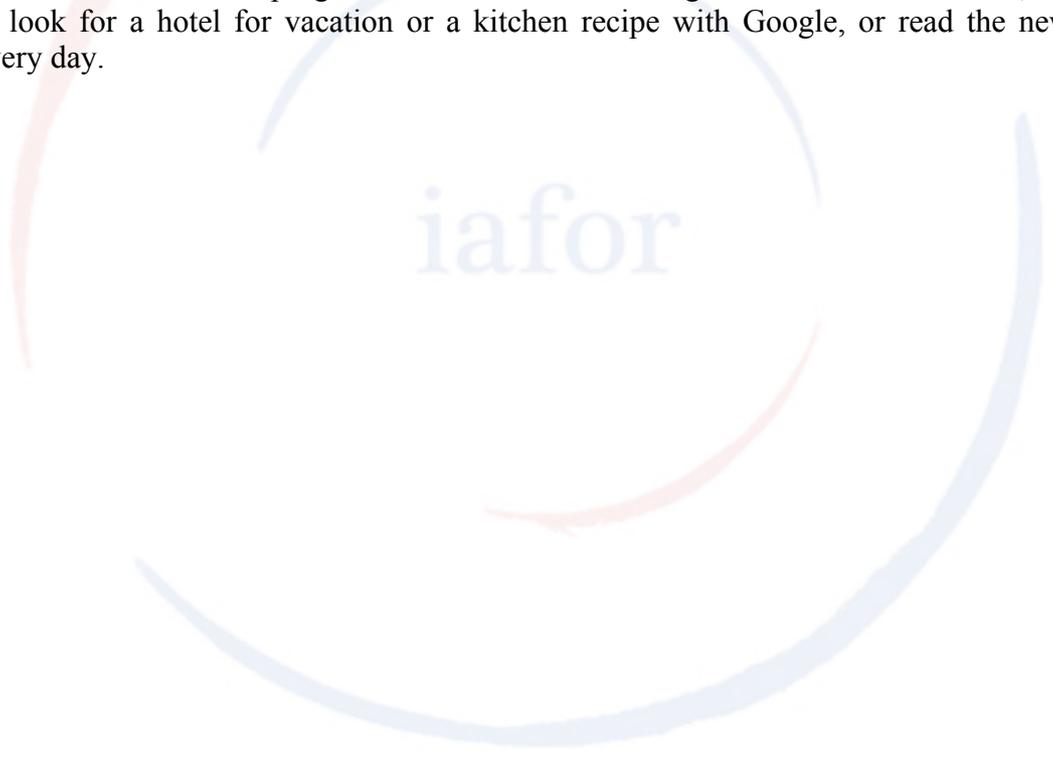
It is different to explain the technologies to elderly or to young students, because young students are digital natives, but elders and even most adults, they are called digital immigrants (Prensky, 2001). Although there are some adult learners that have to reconcile their university activities with family life, they show better academic performance than their younger colleagues (Hoyert, 2009). So, the way of teaching is different depending of the population group. In general, the group of UPE is separated between traditional lessons where the teacher explain the contents and the students are simple listeners, and lessons using the computer. Some students learn how to create an e-mail account, while others use to send e-mails or whatsapp messages to their sons and daughters. Some easy exercises are proposed to the students and there is no exam and no mark for these studies.

## **Conclusions**

The University Program of the Experience at the University of Salamanca was born 20 years ago, as an initiative of the Castilla y León Regional Government. Learning in later life is becoming common, and the Program of the Experience increases the students' quality of life. The program enables individuals aged 55 or more have access to the University to participate in curses of the same quality as any other student, with university professors and lectures. The UPE goal is to facilitate the participation of older people in our society.

Education is not considered in a context where teachers provide learners with information to memorize. Students are provided by the attitudes and competences necessary to remain as part of the community, through participation, being active, understanding, etc.

One of the optional subjects included in the UPE is New Technologies, which allow elders the use of information and communication technologies in their daily life and becomes very useful and interesting to them. One of the main conclusions of this course is that some students saw technology (internet, e-mails and so on) as inaccessible and difficult to understand. After attending the course, they realize that it's not as complicated and starts to use it, in particular some tools like Skype, e-mail, and search with Google. Those who do not yet have e-mail account; they create one and start sending messages to peers. This tends to give elders a lot of satisfaction because they saw it as an inaccessible field. They begin to believe that they are already "digital" and that opens a world of possibilities. Students lose the fear of damage the computer. Now they understand how the computer works, and how to use some basic and useful programs to be in contact with grandchildren and friends, and to look for a hotel for vacation or a kitchen recipe with Google, or read the news every day.

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***A Global Learning Experience:  
Narratives of European Immersive Clinical Nursing Exchanges***

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The European Conference on Education 2014  
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**Abstract**

Placement learning accounting for 50% of the educational experience for pre-registration nursing students holds considerable benefits (Warne et al, 2010). Moreover a European exchange enhances development of cultural competence and international perspectives on practice. Critics of exchanges (Shieh, 2004) report students feel 'disintegration' and dependence problems. However, Button et al (2005) assert positive aspects: cultural difference, comparison of healthcare systems, care practices, personal development and critical perspectives. Middlesex university has long experience of students going on exchange (BSc European Nursing and Erasmus) and this is increasingly popular supporting Leuven's 20/2020 target to increase student mobility (Sweeney 2012).

Nursing education has evolved over the last decade but some European areas are still evolving to align with Bologna cycles. Nursing students then enter varied settings on European exchange. Adopting a bricolage approach (Kinchloe, 2001, 2008) students' reflective blogs, placement assessments and evaluative techniques were analysed revealing a professional journey which, at times, was both turbulent and enriching with evolving awareness of global health and care concepts. Individual student narratives vary sharing some themes but not a 'linear' development arguably a variation of W-curve of adjustment (Zeller & Mosier, 1993). Outgoing UK students report improved confidence, independence, expanding skills, reconceptualising 'essence' of care and communication. Incoming European students however report surprise at multidisciplinary relationships and interactions, ethnic diversity (London), expanded nursing roles and patents negotiating care. When asked 'what else' it appears unclear or simply a feeling at the end of 'being different' and a liminal state of developing or becoming.

Keywords: European placements, Professional transitions, Global perspectives on healthcare, Lifelong learning

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## Introduction

The Treaty of Rome signed by six nations in 1957 set in motion the economic and political integration of western Europe evolving to that state which although controversial has culminated in an integrated European market. The European Union (EU) currently comprises of 27 culturally different member states. Within this context whilst population health has improved in recent decades challenges remain from increasing diversity, ageing and socioeconomic changes across Europe. Inequalities in income, education, housing and employment have directly or indirectly affected public health (Mladovsky et al, 2009). Globalization has resulted in increased migration (voluntary to involuntary) ranging from refugees, asylum seekers, internally displaced persons and stateless persons (Pacquino, 2008) all of whom have multiple physical, psychological and sociocultural needs as a result. Furthermore globalization is increasingly dictating academic and professional requirements for graduates in knowledge and professional cross-cultural skills and attitudes without sacrificing quality and safety (Greatrex-White, 2008).

Nurses' knowledge and awareness of health needs is paramount to their professional role. Furthermore a responsive and reflexive approach to practice is required at a number of levels: individual nurse-patient encounters, macro-level organisational involvement and wider societal influences and interventions. The demographic changes in the UK and across Europe reinforce the need not only a global awareness of the issues but also of cultural and integrative approaches to care for competent practice. Whilst this is core to all nursing programmes in the main across Europe it is a requisite for qualification to practice in the UK (NMC, 2010). Greatrex-White (2008) argues whilst it is accepted that home institutions cultural training programmes and theoretical transcultural models can be effective in developing students' knowledge of other cultures the location within the classroom has limited impact for students of the caring professions.

Nursing like many professions, exhort lifelong learning to be responsive and effective in practice. Lifelong learners possess skills to flexibly respond to change, proactively develop their competencies and participate successfully in society (Redecker et al 2011). Opportunities such as European placement exchange provides this and narratives from student nurses engaging in this experiential process reflect these skills and qualities in a transformative way.

## Learning Nursing

Learning in placement provides 50% of the educational experience for pre-registration nursing students. The benefit of this experiential learning is considerable (Warne et al, 2010), the dimension of an exchange enhances development of cultural competence and international perspectives in practice. Critics of exchanges (Shieh, 2004) report students feel 'disintegration' and problems with dependence. However, Button et al (2005) assert positive aspects: cultural difference, comparison of international healthcare systems, care practices, personal development and critical perspectives of experiences. Middlesex university recognises this from long experience of students going on exchange (Erasmus) and increasing interest by students for clinical placement in Europe which fortunately also supports Leuven's 20/2020 target to increase student mobility (Sweeney 2012).

Nursing education and preparation has evolved over the last decade. Reforms to higher education in 1999 aimed to create a comparable education system and academic awards across Europe which was recognised and transferable throughout (European Commission, 2012). Commonly referred to as the Bologna Process (from the city in which it was signed) the European Higher Education Area (EHEA) articulated three cycles of higher education (bachelor, masters and doctoral level) and the transferable European credits scheme (ECTS). This alongside other European nursing organisations influenced the development and movement of nursing to degree level study which is now the dominant professional education route in the UK. Currently some European areas are still evolving to come into line with Bologna cycles. Clinical learning environments, healthcare provision and supervisory systems vary across Europe (Salminen et al, 2010) with some nurse education situated within hospital nursing schools and others in universities. However this is evolving more towards university. This then presents the varied setting which exchange nursing students enter on clinical placement both outgoing to host countries and incoming to the UK.

Several attributes and experiences are anticipated to be developed or at least encountered during exchange not in the least cultural exposure. Several researchers have claimed that exploring and confirming one's own cultural values and prejudices are essential to increasing awareness and cultural sensitivity towards others (Lenninger and MacFarland, 2002). This however does need a form of preparation as awarenesses do not 'occur' instantaneously yet how does one prepare students for this alongside the complexities of culture and beliefs, uncertainty, adaptation and personal and professional growth? Greatrex- White (2007) argues that exchange supersedes more passive home environment preparation awareness building of cultural appreciation and building criticality of one's own culture and practices and the impact of this on other cultures and one could add develop some form of cultural competence. Cultural competence is described as a continuous process (Koskinen et al, 2012) more a 'process not an event' (Campinha-Bacote, 2002 p.181) or rather a state of becoming. It has long been recognised that study abroad yields benefits to nursing not in least with reference to wider society and the various harsh realities of life and living but also to develop critical awareness and clinical reasoning and the core essence of nursing (Cowan, 2007). Campinha-Bacote (2002) argues that there are multiple interrelated elements to cultural competence: cultural awareness, cultural knowledge, cultural skill, cultural desire and finally cultural encounter. This final one is most relevant to this paper since the students by engaging with a six month exchange engage in an immersive cultural experience which enables nurses to directly engage with a variety or diverse populations and experience lifestyle, living and linguistic experiences and apply these to their professional practice.

This paper outlines a specific aspect of practice: nurse education and European exchanges. It explores incoming and outgoing (to the UK) students' experiences with the perspective of insights and effects from a European learning experience and cultural immersive experience. It originated with evaluation of students nurses immersive experiences and enabling more effective preparation for exchange. The key questions which were explored were: what are students perceptions of such experiences, to what extent has the experience influenced their view of nursing, health or themselves, do experiences differ between UK students going abroad and

European students coming to the UK and finally what 'else' is there to be learned from this experience?

### **Methodological approach**

This was not a formal research project yet having been inspired by Kinchloe's (2001) influential work on eclectic educational research approaches (bricolage) it enabled a less formal 'research' approach and a means to tap tacit knowledge and understanding of experiences using tools at hand and constantly reimagining and interpreting various 'artefacts' or 'data' respecting the complexity and contradictions of the lived world. As Denzin and Lincoln (1999) amongst others argue authentic bricolage follows several complex naturalistic approaches also acting as an eclectic strategy to add 'rigor, breadth, complexity, richness, and depth to any inquiry' (p.6). In its more authentic sense it relies on methodological practices explicitly based on eclecticism, emergent design, flexibility and plurality (Rogers, 2012).

This was a small group of students. Twelve UK students and ten European nursing students from European countries. This evaluative data is from one year group and reflects a brief snapshot which is aimed to build up a more substantial understanding in subsequent years as exchanges expand.

Bricolage research, as conceptualized by Denzin and Lincoln (1999) and further theorized by Kincheloe (2001; 2004; 2008) and Berry (2006; 2011), can be considered a critical, multi-perspectival, multi-theoretical and multi-methodological approach to inquiry. For Kincheloe (2004), human knowledge construction does not lead to universal 'truths' nor can it be considered a linear or tidy process and that knowledge is temporal and culturally situated (Kincheloe, 2008). The 'tools' used here reflected the records of experiences students during the exchange period: online reflective blogs, practice reflection accounts (placement learning), focus group and formal evaluation (using a nominal group technique lead by the students. Nominal Group Technique (NGT) requires direct participant involvement, in a way that is non-hierarchical, and where all participants have an equal voice and all responses to the posed question (elucidating positive and not positive experiences to this exchange period) have equal validity (Harvey and Holmes 2012, Perry and Linsley 2006).

### **Analysis**

This followed an inductive process to examine the whole experience to reach the ideas and feelings of those involved. Since it was students narratives or stories which convey the meanings shared elements emerged as 'themes' and students themselves offered 'themes in the evaluative NGT. Narrative analysis as fits 'bricolage' approach with the recognition that it is one understanding or interpretation of words and phrases from students. Each reflection and blog was read carefully identifying 'meaningful units' and loosely termed 'themes' elicited. This was independently reviewed by a peer and finally discussed with (UK) students for congruence and sense of the narratives they offered. Accounts were highly individual but it seems they were making sense of similar phenomena. The interpretation is subject to my own view of the students' experiences and my own position as lecturer and my own biases from professional experience, cultural and personal experiences in the world. During the whole analysis and interpretative process the blogs and reflections were interrogated,

the emotions and ‘sense’ students were making by asking What did they understand about study abroad? What sense or meaning are they giving to events/feelings/awareness’s? What elements have changed for them and what is the process of change? It is noticeable that some ‘structures’ were in conflict with each other: feeling welcome yet feeling isolated. In this paper the notation or prefix ‘UK’ denotes quotes from UK nursing students and ‘EU’ for the European incoming students.

### Professional journey

When asked to complete a final evaluate process using a nominal group technique the students readily took the opportunity to delve into each other’s experiences to sort and discuss and then summarise them under what was positive and enriching about the exchange versus what was not and how this could be improved. The key results can be seen in table 1. Overwhelmingly the positive superseded the negative and on closer examination and a post evaluation focus group discussion revealed that the positive and negative were often two sides of the same phenomena (homesick and isolation yet making new relationships) revealing a temporal point in the exchange reflective of a transitioning of an at times turbulent journey towards positivity.

Table 1: UK Student summarised results of Nominal Group Technique evaluating exchange experiences (ranked and top 4 shown).

Positive/enriching aspects	Negative/blocking aspects
1. Seeing and learning new nursing ways and approaches	1. Adapting and feeling isolated and homesick
2. Experiencing a different culture (food, living, language)	2. Returning home
3. Making new relationships	3. Expense
4. New travelling opportunities	4. Confusing teaching environment

Students recorded their professional journey reporting at times, turbulent journeys and experiences reminiscent of the W-curve of adjustment (Zeller and Mosier, 1993) with exhilaration and periods of feeling low and isolated. This occurred both on going to the host country but also on return to the home country although it must be acknowledged this was only followed up with UK students. European students appeared to have issues with adapting and reflected this pattern but it is unknown if this persisted in the return to their home surroundings. This points to a longer term impact of an exchange experience and for some students the process of adapting revealed a transformation or realisation of skills and qualities they did not appreciate they had (or developed). These point towards a positive coping approach resonant where personal qualities of coping and resilience reported by McCann et al (2013) enable a management of negative effects of stress. In a profession as stressful as nursing is a valuable attribute particularly in the light of unpredictable futures and situations.

Themes which emerged from the student narratives varied. UK students report improved confidence and independence, expanding skills-base, reconceptualising 'essence' of care and dimensions of communication. The incoming European students reported increased independence, different multidisciplinary relationships, diversity of ethnicity (London), expanded role of nurses and surprise at patients negotiating care. These reflect the future skills of flexibility and learning to learn and reflection and new learning patterns for life wide and lifelong learning proposed by Redecker et al (2011) in preparing for the future. This evaluation strongly suggest emerging themes congruent with criteria (Mezirow, 2000; Cranton, 2006) for long-term transformational learning

### **Orientation and disorientation – experiencing transition**

Moving to another country for such an immersive experience is bound to cause feelings of anxiety and anticipation. Literature on international exchanges is replete with models of student response to this which can be simply summarised as empowering and positive or devastatingly negative (culture shock) (Zhou et al, 2008; Button et al 2005). The narratives from UK students indicated a variety of reactions to going abroad including regret at choices and at not making the most of experiences. Emotions were highly prevalent in perceptions of the experiences which in one case was a barrier and permeated the entire period abroad. However on reading the reflective diary and clinical reflection the impression is very different. Each had different pattern making this a unique to them and thus difficult to predict. These students therefore did not reflect a 'homogenous group' and their experiences study does not follow a precise and predictable pattern reminiscent of the findings in other literature (Greatrex-White 2007 ; Keogh, Russell-Roberts, 2008; Warne et al 2010).

The European nurses' narratives showed similar orientation aspects to the city and also to the healthcare processes/organisation. For some, London is a massive difference to their home country especially those from Malta and Italy compared with that of Scandinavian countries and this made the experience all the more immense. This did result in some narratives of amazement at the diversity of the population but also of the speed and frenetic working of the city. Some students felt welcome and others isolated: *'Interesting part of my placement was culture meeting patients from so many different cultures and with different backgrounds amazing in London..'* (EU2). *'During the first week I felt a bit confused .... But after I started to work and to give meaning to my actions and know my environment everything appeared better'* (EU3). This transformation and making sense necessitated fitting in and moving to a positive perspective of the experience. None commented on feeling homesick in their reflections but did verbally acknowledge this. As each student experienced moving from one culture or environment to another the process was individual but there were similarities in their experiences. One UK student described as a period of disorientation and *'feeling unwelcome in the clinical area'* (UK1) and a sense of not being prepared by the home institution. *'I missed the rush of London – it was so quiet here we were I was not prepared for such quiet...'* (UK 8).

The sense of loneliness and detachment was made worse by contact from home or when punctuated by visits home. Ruddock Turner (2007) found that some students' transition was characterised by uncertainty and disappointment however here the

common thread was the means and extent to which they embraced this uncertainty and disorientation and adjusted as part of a process of adapting to the reality demands of a new and different culture. Lyons (2002) proposes this process of reflection and construction of meaning is thought to be linked to the elaboration of one's sense of self-identity (and culture) and highly emotive arguing also that this process may contribute to transformation of meaning perspectives or frames of reference (Lyons, 2002).

### **Personal growth through challenging experiences**

Students did reveal experiences in unfamiliar situations which stretched their abilities and knowledge. Moving beyond the comfort zone to unfamiliar situations and clinical areas opened up awarenesses and new possibilities and challenges and ultimately, learning. Students recognised the difference yet also the comfort in performing fairly well established skills which they offered in situations to aid 'joining in' which not only exercised them but also enabled new ways to use and develop them. *'The trust the staff have put in me has been a bit of a shock compared to the UK' (UK 1)*. *'If you are an exchange student there is less pressure on you to actually get involved when on placement, my advice would be to jump right in and experience all you can.'* (UK12). For some students this was frustrating and they acknowledged their limited experience base and perhaps highlights their limited ability to see the 'bigger picture' of services and care provision *'Many of the patients clearly have mental health problems that was the most challenging part it seems to me that not a lot is done about this. It seems almost that this part is ignored since they are not hurting anyone'* (EU1). As students they are still on their professional journey and exchanges can enhance the limited experience base and impact on how much is learned or connected to prior knowledge. For many they moved beyond their current zone of functioning scaffolding their learning, reflecting and being in socially supportive spaces enabled a sense of what they were about (metacognition) ultimately towards self-efficacy and a new state of 'becoming' reflective of social constructivist processes.

### **Culture immersion: Self-conscious, awareness and knowledge and learning and adjusting**

Living in the host culture allowed a new perspective on their own culture and lifestyle to surface. Much literature focusses on learning new cultures and absorbing differences (Koskinen & Tossavainen, 2004; Callister and Cox, 2006). Wilson-Covington (2001 in Cowan 2007) argue that the nursing profession and values are predominantly determined by western systems and knowledge is at times ethnocentric (Vydelingum, 2006). Narayanasamy and White (2005) highlight that nursing education in the UK exposes students to adapt to and internalize one particular culture and its values and beliefs, that of the majority. Kozub (2013) argues that to provide culturally competent (or any competent) care students need the ability to reflect on their own beliefs, values and perspectives and develop the ability to understand the perspectives of the other (patient or family). This is not a remote learning task but one ingrained in practice involving emotional and cognitive connections and thus actively learned in direct experiences with patients. The exchange offered therefore to experience crossing a new culture which makes one examine one's own culture and how people are products of that culture (Greatrex-White, 2007) which was evident at

times *'Nursing is different, strange really patient contact is most important - being with patients but there it was laid back – monitoring was done remotely blood pressure you know . I need to build rapport make contact with patients'* (UK1). Although the students clearly did not acknowledge limited views or bias and the extent of 'awareness' or culture revelations remains unknown.

Ruddock and Turner (2007) found that students reflecting on their experiences especially with peers from their own culture, and having time out from the host culture, helped put things into perspective, which facilitated adjustment to cultural differences maintaining an open attitude enabled them to compare differences in health care, education and nursing. This was the aim of the blogs and remote support processes. *'Interesting part of my placement was culture meeting patients form so many different cultures and with different backgrounds'* (EU2). *'What caught my attention is that London is very multicultural and therefore there are patients coming from all over the world with different cultures, ethnicity and beliefs I really admired the way the nurses and healthcare staff used to go along with such a wide diversity of patients whilst always maintaining a high standard of professionalism...'* (EU6). Transcultural theorists identify self-awareness as an integral step in the development of culturally congruent care (Kozub, 2013). In considering Leninger and MacFarlane's (2002) explanation of ethnocentrism is a universally held principle but one that is harmful to nursing practice. Furthermore they argue for the value of breadth of experiences and increased self-awareness for nurses to recognise personal bias to free them to move beyond simply acknowledging cultural beliefs, values and biases into the emotional and cognitive realms of culture to use it consciously to integrate cultural competence into professional practice.

### **Important others and supportive networks**

Salminen et al (2010) argue that whilst clinical environments and supervisory systems are central to nursing students learning this poses challenges where the educational culture varies from university to hospital based education systems and yet Suikkala, et al (2008) argue that in some areas (notably Finland) pedagogical conditions offered by wards and supervisor skills have improved consistently over the last 10 years. This still creates a challenge for students entering a new system and navigating the process of supervision or mentorship. Though more issues were found with mentors in UK organisations compared with European (according to blogs/reflections). *'I had so many opportunities there was always something to do ... feeling more involved'* (UK 5). *'The ward was too busy for me to learn anything...they said they don't have time to teach students'* (EU1). This may also be a reflection of the nature of the clinical area or simply reflective of the early transition period either way, it was isolating and is an important consideration for developing such experiences.

In the context of nurse education and practice professional socialization impacts on students ability to identify dominant values, skills and attitudes and 'becoming' the professional. Mackintosh (2006) suggests that this can also result in a loss of idealism about care and furthermore that the local context drives their transformation to 'fit' the local needs and culture this may also have a detrimental effect on students learning and ultimately patient care. Greatrex- White (2007) suggests that a study abroad has the potential to act as a catalyst to 'awaken' the limiting nature of their

socialisation process and emerge with a new awareness of not only self and culture but also of approaches to practice. This taken for granted or passive acceptance which is submerged is raised to consciousness then learning takes place engendering deeper rather than surface approaches to learning (Greasley & Ashworth, 2007).

Multidisciplinary working was a key issue with some of the European students highlighting the different exposure and pattern of healthcare provision. This was most prevalent with the Italian and Maltese nurses in particular but not an issue identified by Scandinavian students. *'Communication between doctors and nurses is better. This might be the fact that there is more trust between healthcare professional's moreover this can guide decision making in health care plans'* (EU5). *'Nurses and doctors gather around at the beginning of the day when I was working in theatres and have a group discussion regarding the schedule of operations and how they should prepare for each and every patient accordingly'* (EU6). The work of nurses was at times confusing to EU students – some work was considered 'domestic' and thus not appropriate yet is part of everyday care here such as giving out meals and making beds when there were also extremely senior independent practitioner nurses further confusing them on role boundaries. *'Some domestical work is also expected to be done by the nurse this is done by carers in Malta so nurses can focus on important tasks...'* (EU5). *'I worked with specialist nurses that interview patients and discuss where best to direct the patient with diseases .... the nurses here had more responsibility and value..'* (EU3). It must be noted that some students were in year 2 or 3 and thus at differing levels of nursing preparation so some awarenesses are due to the prior exposure however this does not detract from the impact of the immersive exchange period and the awarenesses which emerged.

### **Discussion and Conclusion**

Underpinning all the accounts and narratives are the sense of collegiality and connectedness to the locations and professionals they encountered. The awareness of this was variable and the process it seems, continues after returning. From the UK students perspective changes continue to emerge up to several months on return. One could argue a deeper transformation process which began during the exchange continues reveals a key attribute to lifelong learning and life wide learning reflected in the central paradigm of learning and being reflexive and responsive for the future proposed by Redecker (2009).

The original questions posed focussed on what are students perceptions of such experiences which has been presented here as varied individual and certainly overall transformative. The views of nursing emerge as varied to from incredulity to awe though what the impact would be on qualified practitioners more established in a sense of professional self would be interesting. The experiences are different from the UK versus the EU students yet individual narratives all point to transition and some form of personal and professional learning. For the year 3 students they are on the cusp of professional qualification and the responsibilities and uncertainties this brings. Experiences and this other type of transition then are influenced by role models and mentors, regardless of country (Kaihlanen et al 2013). This period of 'liminality' also points to a complex picture of understanding how students make sense of the exchange. Literature indicates that at this point students' perceive an insecurity and anxiety level manifesting in knowledge, skills and practice

deficiencies. The additional stress of an immersive cultural experience may in fact illustrate skills of resilience or ability to overcome this but could also add to the anxiety experienced. Alongside developmental and intellectual development one could also argue socio-cultural and societal context adaptations are also happening. Furthermore it is argued that resilience a process of coping and adapting to adversity that can be learned (MacAllister & McKinnon, 2009) and opportunities such as this contribute.

A final question which was posed initially was what 'else' is there to be learned from this experience? This is rather difficult to discern since the various facets of the exchange experience are all interrelated and yet individual. There does appear to be a question of the 'who' elects to go on exchange and are they open to such transformative experiences and how could the benefits and insights gained be harnessed and utilised for students who do not go on exchange?

Campesino (2008) proposes that new and innovative educational approaches are needed to prepare a workforce that responds to diverse needs of people from a wide variety of cultural backgrounds, languages, and worldviews. The challenge is how to do this for transformational learning to occur in Mezirow's (2000) definition:

'The process by which we transform our taken-for-granted frames of reference (meaning perspectives, habits of mind, mind-sets) to make more inclusive, discriminating, open, emotionally capable of change, and reflective so that they may generate beliefs and opinions that will prove more true or justified to guide action'. (p. 8)

One can therefore conclude that the exchange does impact on students either through redefining nursing practice, developing a positive attitude to health which is valuable contribution to developing a more global attitude towards professional practice. Duffy et al (2003) point out that adequate preparation of students going abroad is essential and ideally that language proficiency of the host country is important. This was evident here but since most of the host countries spoke English the key aspect was how much language is enough to care for clients and also how students could embrace the extra effort to learn the language once there. Evanson and Zust (2006) and Button et al (2005) conclude that short term immersion experiences can enhance students cultural competence as well as having lasting effects on their personal and professional lives.

(4538 words)

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***Critical Thinking as a Tool for the Development of  
Interdisciplinarity in University Education***

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**Abstract**

In this essay the relationship between critical thinking and interdisciplinarity is examined.

Critical thinking is explained as a multilayer phenomenon that should be examined systematically on interdisciplinary platform. The basic issues linked to an interdisciplinary research of critical thinking are: relations between critical thinking and language, logical and cognitive operations in the process of critical analysis, methods of critical thinking and their anchoring in the methodology of science, the process of critical thinking in relation to personal dispositions and attitudes, possibilities of development and evaluation of critical thinking within educational and learning processes.

An interdisciplinary approach is a synthesis of two or more disciplines that result in establishment of a new scientific discourse, while the knowledge that results from it has an integrative character. Basic goal of interdisciplinary research lies in the deeper level of analysis, creation of a new explanatory frame (research paradigm) and identification of new operative causes. These enable us to offer unified explanation of seemingly heterogeneous phenomena. Meaning and importance of the interdisciplinarity is illustrated through the example of formation and development of cognitive sciences.

Fundament of the education at the level of higher schools or universities should not lie only in the transfer of factual information, but also in intentional and purposeful development of cognitive abilities of students. The ability of critical thinking is one of the interdisciplinary skills. Education in the area of critical thinking is associated with the interdisciplinary approach. Therefore, critical thinking and interdisciplinary approach are contingent on and stimulate each other.

Keywords: critical thinking, interdisciplinarity, research, cognitive science, education

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## Introduction

The ability to think critically is indicated as a key competence of the 21<sup>st</sup> century by many authors (compare Halpern, 2003, Huitt, 1995, Thomas & Smoot, 1994, Howell & Kemp, 2002 and others). Also development in the area of interdisciplinarity can be considered as an important principle participating in massive advancement of science and technology at the beginning of this century. Both of these phenomena are mutually pertinent and contingent on each other. It is the role of university (general or all-embracing) education to reflect systematically both the improvement in critical thinking as well as development of interdisciplinary relations in the frame of scientific-technological study and research. In this contribution we deal with:

1. Defining and clarifying the terms *critical thinking* and *interdisciplinarity*
2. Enlightening the mutually conditional relation between critical thinking and interdisciplinarity, particularly:
  - 2.1 interdisciplinary research in the frame of critical thinking
  - 2.2 critical thinking in the area of interdisciplinary research
3. Introducing the critical thinking as a tool for development of interdisciplinarity in the frame of higher education

## Relationship between Critical Thinking and Interdisciplinarity

The term *critical thinking* can be described as a set of formal operations that influence the processing of information and reaching the planned goals and desired outcomes. Critical thinking is a suitable tool for work with a set of factual information (in a similar way as Aristotle's work on logic was called the "pipe organ" of thinking). Critical thinking can be determined either from the epistemological point of view as a logically correct way of thinking (that enables us to distinguish between logically correct and incorrect arguments) or from the practical point of view as a condition for efficient and purposeful action (that is not determined by extreme manipulative tactics). Many definitions of critical thinking are based on this dual understanding of its meaning:

1. Critical thinking as a tool for correct cogitation:
  - „... *active, systematic process of understanding and evaluation of arguments*“ (Mayer & Goodchild, 1990, p. 4);
  - „... *ability to analyze facts, generate and organize ideas, defend opinions, make comparisons, make inferences, evaluate arguments and solve problems.*“ (Chance, 1986, p. 6);
  - „... *involving analytical thinking for the purpose of evaluating what is read*“ (Hickey, 1990, p. 175);
  - „... *the cognitive competences most relevant to critical thinking are metacognitive rather than cognitive-competencies. In contrast to first-order cognitive skills that enable one to know about the world, metacognitive skills are second-order meta-knowing skills that entail knowing about one's own (and others') knowing.*“ (Kuhn, 1999, p. 17);
2. critical thinking as a tool for making good decisions:
  - „... *the ability to analyze people's attempts to persuade ... and evaluate whether or not they are giving a good argument.*“ (Howell & Kemp, 2002, pp. 2-3);

- „Critical thinking is the use of those cognitive skills or strategies that increase the probability of a desirable outcome.”(Halpern, 2003, p. 6);
- „Critical thinking is reasonable and reflective thinking that is focused on deciding what to believe or do.” (Norris & Ennis, 1989, p. 1)
- „... challenging a claim or an opinion (either one`s own or another person`s) with the purpose of finding out what to believe or to do. “ (O`Hare & McGuinness, 2009, p. 123).

Critical thinking as a tool for processing information can be characterized by its “keystones” - the thought operations. There are some calculations and classifications of these fundamental thought operations in practice; for example, *interpretation, analysis, evaluation, inference, explanation, self-regulation* (Facione, 1990, p. 6); *purposes, question at issue, interpretation and inference, concepts, assumptions, implications and consequences, point of view* (Paul and Elder, 2008); metacognitive monitoring, verbal intelligence, analysis of arguments, testing of hypotheses, estimation of probability and making decisions (Halpern, 2003, p. 20). We propose following way of classification of fundamental thought operations that create and support the ability of critical thinking:

- *Cognitive operations (CO)*: analysis, synthesis, comparison, abstraction, idealization, generalization, concretization, analogy, classification, modelling and others,
- *Formal-logical operations (FLO)*: implication, equivalency, conjunction, disjunction, negation and others,
- *Complex operations of critical thinking (COCT)*: argumentation, evaluation, interpretation, inference (in broader sense), deduction (in broader sense), induction and others.

This system of classification is organized in hierarchical order (from basic cognitive operations up to complex operations of critical thinking). The next two categories are contingent by the first one: so that we are able to understand the FLO and COCT we must be able to master the CO. Difference between CO and FLO lies in the possibility of their formal script. Whilst the formal-logical operations use exact conditions for setting the verity (validity), in case of cognitive operations there is no exact formal algorithm which can serve as a criterion for the verity or validity. COCT deal with the vast informational units what makes them difficult to be identified both from the point of view of their formal algorithm and conditions of their validity.

Critical thinking as a tool for creation of reasoned decisions supports the following abilities: *be open to criticism and argumentation, look for alternatives, take into account the total situation, be well informed* (Ennis, 1985, pp. 46–47); *truth-seeking, open-mindedness, analyticity, systematicity, critical thinking self – confidence, inquisitiveness and maturity of judgment* (Facione et al., 1995, p.6); *intellectual humility, autonomy, empathy, integrity, perseverance, fair-mindedness, intellectual courage, confidence in reason* (Paul & Elder, 2008, p.15).

The abovementioned abilities and attributes help to transfer critical thinking from the epistemological level into pragmatic one and thanks to this transfer we can apply the outcomes of critical analysis to reach the desirable aim.

Thought operations and personal dispositions are mutually conditioned and create the ability to process information and to reach specified goals. Character and degree of this mutual influence has not been defined exactly so far. Thought operations hand in hand with personal dispositions are developing in the frame of ontogenesis of an individual human being more or less in exactly demarcated phases. Kuhn (1999) defines three forms of so called metacognition (second stage cognition) which condition the human ability to think critically: metacognition (getting to know the process of cognition), metastrategy (development of criteria that are used to judge the validity of cognition) and the form of epistemological attitude of an identifying subject (there are four categories of human attitude towards reality – realist, absolutist, versatile person and evaluating person). Metacognitive strategies are systematically orientated on the cognitive process, on its subject and object, criteria of correctness, error correction and evaluation of cognition of other people. Metacognition conditions the origin and existence of a consistent file of evaluating criteria that are applied systematically, notwithstanding particular object, subject or situation. The possible improvement and implementation of the principles of critical thinking is conditioned by the development of the second degree cognition and the existence of evaluating criteria (p. 23).

According to Piaget and Inhelderová (2010, p. 45-68), any development of cognitive abilities is conditioned by the existence of so called symbolic function which emerges thanks to the developed motor-sensory intelligence at the age of approximately two years. It is based on the ability to present or imagine something, or to create conceptual schemes. Basic principle of the symbolic function is defined by the existing difference between identified and identifying. Complex representative (semiotic or symbolic function) is a crucial condition for the possibility of creation of a symbolic gesture, figurative image and speech. Children usually do not use figurative images in their motor-sensory period. Progressive commencement of new cognitive functions at the beginning of the second year of human life should go along with the child's capability to imagine the object and consequent ability to create the image of such object when that is not present anymore. Symbolic function goes across phases of so called distant imitation (for example imitative gestures), symbolic or fictional play (pretended sleep) and drawing or graphic visualization (which presents the crossover from play to figurative imagination). This is followed by the visual image (in sense of the interiorized imitation) and the whole process is finally topped by the creation of a language sign. Step by step the imitating act is setting apart from the current context and is becoming a generalized marking symbol – an image in human mind. Mental image is separated from the outer acts and by its generalized and formal nature it becomes the base for further development of higher cognitive functions. Nowadays, interdisciplinarity is being more and more put into effect in contemporary research practice. It is important to define it in relation to multidisciplinary and transdisciplinarity. The term multidisciplinary refers to systematic accumulation of knowledge from various scientific disciplines, while the subjects of their research do not overlap and the final outcome of their connection has the additive character and not the integrative one. In case of multidisciplinary research there are some scientific disciplines participating in examination of the common research subject. Accumulation of knowledge is peculiar to this type of approach, borders between particular scientific disciplines, as well as their terminological vocabularies and methodological apparatuses remain mutually exclusive. According to Frodeman (2010, p. 234-245) knowledge obtained through the multidisciplinary

approach is juxtapositional, sequential and coordinated. Cognitive processes in living organisms had been the subject matter for variety of scientific disciplines (philosophy, psychology, linguistics or neuroscience) even before genesis of cognitive sciences, but this type of research was only of multidisciplinary character. There was not any unifying, conceptual or methodological frame (common paradigm) for creation of theories about cognition.

On the other hand, interdisciplinary approach leads to the implementation of a new scientific paradigm which integrates methodological apparatus and terminological vocabulary of different scientific disciplines. Deployment of various mathematical models in the process of explanation the principles of how social or economic sciences work, can serve as a good example (game theory, chaos theory and the like). And what about the implementation of knowledge from the area of nuclear physics in medical diagnoses. Interdisciplinary approach frequently leads to the creation of a new scientific discipline (as it is in case of cognitive sciences, biochemistry, biotechnologies, eco-philosophy and so on).

The aim of interdisciplinary approach is to explore the limits of explanatory frames of different scientific disciplines towards their consecutive approximation. Multidisciplinarity is characteristic by its outer coherence (common research subject), whereby the final goal is to reach as high level of complexity of knowledge as possible. Interdisciplinarity leads us towards deepening of internal coherence (beside common research subject there is an obvious unification of methodology and terminology). Basic goal of interdisciplinary research lies in the deeper level of analysis, creation of a new explanatory frame (research paradigm) and identification of new operative causes. These enable us to offer unified explanation of seemingly heterogeneous phenomena.

In case of interdisciplinary researches, one of the key methodological approaches is so called reductive method. Reductive explanation is about glossing either events, phenomena, attributes and subjects (ontological reduction), or theories, terms, models and schemes (epistemological reduction). Beside this division we can also distinguish between different degrees of scientific reduction: (1) reductions in the frame of the only level (mathematical derivations including approximations), (2) abstract multilevel (inter-theoretical) reductions (explanation of the higher level attribute through the attribute of lower level), (3) spatial multilevel or strong reductions (scientific explanation concentrates on the description of behaviour of elementary particles) (Sarkar 1998, pp. 424 - 434). Inter-theoretical reductions are characteristic feature of interdisciplinary explanation.

“Inter-theoretical reduction is the relation between two different conceptual frames describing the phenomenon itself; nonetheless, sometimes it is confusingly described as a relation between two different attributes of the phenomenon. The very sense of reduction is to show that what we considered to be consisting of two spheres is in fact only one sphere described by two or more different vocabularies.” (Churchland, Churchland 1998, p. 69). A good example of inter-theoretical reduction is the heat theory as an average molecular energy or identification of sound with pressure waves spreading across the atmosphere. The most well-known reduction of modern science is the reduction of Newton’s Laws of Motion into the Einstein’s Special Theory of Relativity.

Critical thinking is extremely complex and multilayer phenomenon and that is why we have to examine and explain its principles through the interdisciplinary paradigm. We propose following scheme for the inter-disciplinary research of critical thinking:

1. Critical thinking in relation to language (area of cognitive linguistics)
2. Critical thinking in relation to cognitive and logic (both formal and informal) operations (area of logic, cognitive psychology and information science)
3. Critical thinking in relation to methodology of science (area of the philosophy of science)
4. Critical thinking in relation to personal dispositions and social attitudes (area of the personality psychology, cognitive anthropology, ethics and others)
5. Critical thinking in relation to pedagogy and other educational sciences (area of pedagogy and pedagogical sciences)

In the frame of the first three research areas, the critical thinking is examined from the point of view of its epistemological nature. The key factor here is its cognitive function. That what plays the crucial role in this process are the questions regarding relation between thinking and language, regarding validity criteria for logical-formal thought operations and possibilities for their deployment in the frame of complex (non-formal) operations of critical thinking. Cognitive linguistics is searching for the connection between the structure of language representations, their processing and their neuronal base. One of the up-to-date and quite interesting topics is the issue of the existence of algorithm for cognitive operations (analysis, abstraction, idealization, modelling and the like) which consequently can be simulated by artificial intelligences or by self-learning systems.

The process of critical thinking as an exactly defined way of processing information is based on the methodological progress of science. Scientific method which is the subject matter for the examination in the area of philosophy of science can be generally described in three basic steps: 1. Observation and description of a phenomenon or a group of phenomena; 2. Formulation of a hypothesis that should explain the observed phenomenon through the principle of causality; 3. Based on the predictions in hypothesis, the tests are being created which can either confirm or deny the hypothesis; 4. In the last step, repeatedly confirmed hypothesis is integrated into the system of other confirmed assumptions and laws of scientific theories (Bednáriková, 2013, pp.14-15). Also in case of critical analysis we advance from defining the problem, through collecting the information, inductive or deductive pondering, identifying hidden logical errors or contradictions, up to the eduction of one's own conclusions.

Scientific explanation has a character of deductive or inductive derivation from two premises: general affirmation (natural law, statistical findings) and description of particular occurrence (initial conditions). By subsuming of concretely described occurrence under the general law we are capable of explaining such occurrence and we can define its cause (why the things happen in the way they do, and not in any different way). Critical thinking advances analogically towards the scientific cognition and explanation. Some conclusions can be deduced from premises (assumptions) based on the logical inference rules, others can be obtained by means of generalization (induction) with certain probability measure.

In the frame of last research field we propose to examine possibilities of systematic development of critical thinking hand in hand with its objective assessment. The issues regarding development of cognitive operations and logical thought procedures of students on one side and also the problems regarding the way of upbringing towards desired personal attitudes and social-culture strategies on the other side play the important role in this process that is closely connected to the sphere of critical thinking (see above). More than any other feature, it is just the pragmatic aspect of critical thinking as a tool for correct (reasoned) process of making decisions and actions that is being emphasised at this place.

Relationship between the critical thinking and the interdisciplinarity can be explained in a following way: critical thinking is a primary interdisciplinary phenomenon that cannot be explained at sufficient level in the frame of explanatory framework of a single scientific discipline. On the other hand, the interdisciplinary research that is rapidly moving ahead in many fields of human cognition nowadays, is strictly conditioned by the abilities of critical analysis, assessment of relevance, terminological clarification, identification of connections and analogies, conception of theoretical models and many others, in other words, it is conditioned by the complex operations of critical thinking. A good example of such mutually conditioned relation between critical thinking and interdisciplinary research can be the origin of cognitive-scientific paradigm in the middle of the 20<sup>th</sup> century. From the very beginning of philosophical analyses it was the phenomenon of thinking or cognition that was one of the most frequently explained as well as one of the least clarified phenomena. Its multilayer character had been beside the possibility of its adequate understanding in the frame of one terminological and methodological explanatory framework. In the moment of establishment of the cognitive science, scientific discourses from the fields of *theoretical linguistics* (analyzing possibilities for language modelling based on its syntactic rules), *artificial intelligence* (explaining the thinking as a calculating process – algorithm for dealing with symbols), and *experimental psychology* (searching for the possibilities of connection of mental operations with mechanical procedures) created a brand new scientific union (compare Wilson, Keil, 1999, pp.15-36). In the 1970's a group of other disciplines subjoined the abovementioned fields which were philosophy, anthropology and evolutionary biology. Also cognitive neuroscience played an important role in the whole procedure. It was moving ahead with giant leaps especially thanks to the invention of displaying methods in the process of brain examination (PET, MRI and fMRI). Nowadays, cognitive science from the point of view of the interdisciplinarity is being systematically unified based on some fundamental axioms. The main goal of cognitive-scientific research is to create empirically testable hypotheses that explain structural and procedural aspects of human cognition. In this context cognition can be understood as a complex of all mental structures and processes of human knowledge and cognition (from sensory perception and behaviour up to the human speech and thinking) and this is what we call the mental knowledge structure. Thinking is in the frame of this paradigm explained simply, but really efficiently: as the ability to process information. Cognitive operations can be understood as the calculations directed by exact algorithms (by sets of rules for procedures of information processing). The outcome is the transformation from one state of cognitive system into another one. Hypotheses in cognitive research must be eventually empirically falsifiable by the observable psychological and neurophysiological facts. This way of explanation of cognitive operations brought an extensive explanatory power to the new theories and the

justness of cognitive-scientific paradigm can be seen also in rapid advance of systems of artificial intelligence and robotics (see e.g. Návrát, 2007).

## **Conclusion**

Fundament of the education at the level of higher schools or universities should not lie only in the transfer of factual information, but also in intentional and purposeful development of cognitive abilities of students. So called metacognitive processes play a crucial role in this procedure. In its frame there are analyses and assessment s of all cognitive processes running. Students must be able not only to memorize new knowledge and information, but also to deal with them in the context and evolve them step by step. They also should systematically and critically monitor and verify their thought operations. Only thanks to the education that repeatedly instigates the ability of critical analysis, evaluation, verification, creation of one's own information databases, argumentation or prognosis of future impacts, it will always be possible to apply the principles of permanently sustainable development.

One of the most important attributes of a thinking human being is the effort to think in a broad context of occurrences and facts. This so called systematic approach means preferring the holistic perspective and circular causality to the linear one. An example of this type of causality is the feedback loop that can be illustrated through the relation between a predator and its prey. An over reproduction of predators causes less and less amount of prey per one predator and this consequently leads to decrease in the number of predators. This again causes the effect of an over reproduction of the hunted animals what leads to the increment in the number of predators. (Leonard, Beer, 2003). Application of the systematic approach enables identification of new relationships, connections and causalities and it presents the fundament for the implementation of interdisciplinary approach.

In this contribution we have tried to clarify the interdisciplinary character of critical thinking. Research in the area of critical thinking includes the scientific fields of cognitive linguistics, logic, cognitive psychology, information science, philosophy of science, personality psychology, ethics and educational sciences. So, if we want to improve the ability of critical thinking in the frame of the university education, we inevitably must "work" on more scientific fields at once. On the other hand, if the subject matter of the education is targeting at the cognitive and metacognitive operations, their further development is possible in any particular area of education since it deals with the improvement of formal processes and not with the factual knowledge.

Critical thinking, its improvement and the process of upbringing in the frame of university education goes hand in hand with the development of interdisciplinarity. It leads students towards more efficient division and classification of obtained information in sense of systematization of knowledge from different academic subjects or disciplines. This way of thinking presents a fundamental condition for implementation of interdisciplinary approach which nowadays seems to be most fruitful and very inventive.

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The logo for 'iafor' is centered on the page. It consists of the lowercase letters 'iafor' in a light blue, sans-serif font. The text is enclosed within a circular graphic composed of two overlapping, semi-transparent arcs. The upper arc is a light red color, and the lower arc is a light blue color, matching the text. The arcs are thick and have a slightly irregular, hand-drawn appearance.

***To Educate Oneself to Educate: The Non for Profit Sector Recognizes and Rethinks Oneself in the Light of Third Millennium Challenges***

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**Abstract**

Globalization, technological progress, economic crisis are factors that oblige individual practitioners and their organizations to face new professional challenges. To grow and expand, NGOs should be able to learn how to think in a strategic way; how to turn intuitions into out-and-out activities; how to generate different solutions to the same problem and select the most effective ones (Prugsamatz, 2010; Bryson, 1995). Organizational learning is an essential requirement to support and better endow non-profit organizations to successfully face these new challenges (Bahamani and others, 2012). Paoletti Foundation, within the project "School of Pedagogy for the Third Millennium" developed a training path at the benefit of NGOs workers. The results of some preliminary studies show an increase of competence and skills between pre and post test and a decrease in turnover.

Keywords: New professional challenges for NGOs practitioners, create and strengthen effectiveness

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## Introduction

The Non Profit Organizations comply with those social needs that are not satisfied neither by profit operations nor by the State. Their aim is to give answers to the many different predictable and unpredictable challenges the society is facing: environmental conservation, poverty, social inequality (Eadie, 1997; Drucker and Drucker 2001; Bryson, 1995). In addition today there are also: the decline of the public faith (Herzlinger, 1999); cost risings (Bradley et al., 2003), the entrance of the for-profit into the non-profit area as a reinvention of the social service's providers (Ryan, 1999), the support and the expansion of success programs (Letts, Ryan, and Grossman, 1999), the conversion of the ideas into effective results (Drucker et al., 2001). Organizational learning becomes an essential requisite. Waddell, Cummings and Worley (2004) described the organizational learning as a continuous intervention of transformation for the development of the organization itself. Learning in the organizations is a phenomenon that can be studied according to different levels: the individual level, the team level and the organization level. In this work a particular emphasis has been put on the individual learning and on the benefits of the individual on the professional growth of the single person and of the organization. The results of the research made by Prugsamatz (2010) show that the learning target areas in the non profit organizations are: the organization's structure, its mission, its problem solving ability, the empowerment team and confidence. Seen the data presented by Prugsamatz (2010), in this research a particular emphasis has been put on abilities and aspects as: problem solving, self-determination and professional self-efficacy beliefs. With the expression "problem solving" we are traditionally referring to a dimension of the general cognitive activity that, on various levels of difficulty, concerns all the tasks in which the individual uses plans and strategies in order to reach a goal. This makes up a cognitive ability directed towards a goal that is underlined in situations in which an easy answer is not available (Von Cramon & Cramon, 1992; Luria, Karpov, and Yarbuss, 1966; Sohlberg et Mateer, 2001). As concerns self-determination, on the contrary, according to Deci and Ryan (1985;1991) it implies the recognition of the possibility to choose; in this perspective the autonomy need is emphasized (to believe that the person is the origin of his or her own actions), the competence need (to use information in order to adjust oneself according to the established goals), and the need to look for and develop safe and positive relations with other people in one's personal social context. As concerns the efficacy convictions, Bandura defines them as: "beliefs towards one's abilities of raising the motivational levels, of activating cognitive resources and of doing necessary actions to have the control on the requests of a task" (Bandura, 1990). When dealing with efficacy convictions, it is appropriate to underline that those convictions, on the contrary of the personality sections, are specific and "task dependent", as they refer to the judgements that people give concerning behaviors that they believe to be able to have when dealing with specific requests and tasks (Nota & Soresi., 2000). In regard of the fact that self-efficacy convictions are context-specific and can affect and control human behavior through many different mediation processes, it is appropriate to examine them and develop them in learning processes of organizational learning (Luthans, Youssef et Avolio, 2007, Luthans, Avey, Avolio, et al. 2010).

As concerns, on the other hand, the benefits that the formational paths can lead to in an organization, it has been considered the turnover tax. This points out, in a firm, the staff's spin, the flow of people coming in and going out from the workforce (Treccani,

Economy and Financial Dictionary, 2012). For our analysis we have used the whole turnover tax, which can be used to observe the factors that determine the changes into the firm's structure and to predict the consequences of the decisional strategies on the firm's staff composition (Bowey, 1974).

### **Foundation Patrizio Paoletti's Pedagogy for the Third Millennium**

The *Pedagogy for the Third Millennium* is the method divulged by the Foundation Patrizio Paoletti<sup>1</sup>. The methodology Pedagogy for the third millennium is an interdisciplinary approach fostering dialogue amongst Neurosciences, Pedagogy and Didactics. The scientific research proved that the human mind keeps its ability to learn at all life ages and, if constantly stimulated and used, it does not change its ability of changing and learning; this is one of the principles of Pedagogy for the Third Millennium. In order to sustain and develop this ability it is necessary for the people to educate themselves, entering a specific and particular process of Lifelong Learning defined: educate to educate, a permanent attitude that promotes the auto-educative process. The method's aim is to expand the consciousness of the individuals on the individual and team work. Through the recognition of those verified and not verified beliefs, learnt by the individual in the environment where he or she belongs, the individual learns and experiences his or her way to understand the events and to direct his or her actions. People learn how to intercept those automatic reactions that become true obstacles for the relations and problem solving in general: negative feelings, prejudices, approximate evaluations. To know the modality of the activation of those automatisms allows people to give better evaluations, to face bad feelings, to make one's actions more appropriate. As a matter of fact, the self-observation allows to recognize that kind of necessary datas (Paoletti, 2007) that are able to educate to a better event's interpretation: more precise, wide and complete, able to guide to an authentic educative action and to a more effective and appropriate communication. The ability to observe oneself observing here and now allows people to live with the experience and not with the memory of the experience itself. It is this specific skill that allows an educative action with oneself and, therefore, with other people. In this way it will be possible to notice in real time what is going on, and of what are the most appropriate answers to the situation. The method offers specific exercises that put people in the possibility to train themselves in order to reach a pro-active behavior (Paoletti, 2011).

The educational plan of the organization (acronym P.E.O.), developed by Patrizio Paoletti according to the guide of the Method Pedagogy for the Third Millennium, is a program made for the no-profit organizations<sup>2</sup>. The program involves different types of interventions:

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<sup>1</sup> It collaborates since 2003 with Bar University, Israel, since 2012 with La Sapienza Università, Rome, and with the Institute of biology and molecular pathology (IBPM) of the CNR, since 2009 with Larios, Padua. The aim of the Institute is to build practical tools in order to help the individuals in using at their best their potential in a sustainable perspective, starting from the melting of research and application, neuroscience and pedagogy (Paoletti, 2011). [www.fondazionepatriziopaoletti.org](http://www.fondazionepatriziopaoletti.org)

<sup>2</sup> The main organization of this research is the Foundation Albero della Vita Onlus and Cooperation Albero della Vita Onlus. These two constitute the same national and international humanitarian organization for the childhood's rights: Albero della Vita Onlus (divided into two organizations). The latest has participated to the research presented during the two-year period 2011-2013. It is based mainly upon the reception, protection, cure and education of children and teenagers victims of negligence, abandon and, in some cases, abuse. It deals with the

1. **Auditing:** a qualitative and quantitative survey on needs and expressed potentials by the individual representation on the organization.
2. **Diversified and specialized formation** for working teams directed to operators and volunteers on the organization itself.
3. **Psychological and pedagogic supervision assimilated into the educational path:** specific expert advice on topics regarding wellness and personal satisfaction in the professional sphere.
4. **Relational Counseling** divided into series of personal meetings: expert advice directed to operators of the organization on topics regarding wellness and personal satisfaction in the professional sphere.
5. **Monitoring tools:** regarding the path in its completeness, that includes also the use of the ELearning platform.

The P.E.O. has been planned with the aim to offer to the organization an improvement of the organizational processes and to offer to human resources cognitive tools, experience tools which goal is to improve the problem solving skills, the team leading skill, the relational and educative skills.

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**The aim of this research:** The aim of the project presented and implemented by Patrizio Paoletti Foundation in cooperation with the University of Padua<sup>3</sup> is to verify the effectiveness of a three-year-organizational training path grounded on the theoretical and methodological principles of *The Pedagogy for the Third Millennium* within a non profit organization.

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**Overview of the researches:** In order to verify the effectiveness of the training path three studies have been conducted: The first study's aim is to investigate the benefits perceived by participants to the training, the aim of second study is to verify the strengthening of some abilities and competences as a result of training; The final study's aim is to analyze organizational turnover rates.

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### ***Study 1: Benefits of different training methodologies***

***Purpose of the study:*** To investigate the benefits perceived by participants on the different types of training (theoretical- empirical training; supervision and counseling)

#### **Methodology:**

***Participants:*** At the end of the three-year training path, the participants to the training were asked, through some open questions, to express their opinions about the benefits of the P.E.O. 55 professionals (11 males and 44 females) took part to this examination

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safeguard of young and adults in bad situations, with specific structures where people are divided for age, and it promotes educational projects to human rights and intercultural education ([www.alberodellavita.org](http://www.alberodellavita.org)). The massive amount of quantitative and qualitative datas has allowed a detailed evaluation of the program and made possible the present work.

<sup>3</sup> The researches have been supervised by Professor Salvatore Soresi, University of Padua.

activities. The sample was made of 35 educators/general workers and 20 coordinators/directors, covering these roles within their organizations, from 5.65 years (average) (DS = 3.58). **Instruments:** In order to gather information about the benefits of the theoretical-practical training on the growth of the individual professional, all those who took part to the theoretical dimension of the training (N = 55) were asked to answer to this question: "what are you able to do today thanks to the training you received?". In order to collect information on the benefits of supervision on the growth of the individual professional, those who took part to supervision meetings (N = 55), were asked to answer to this question: "What are you able to do today in virtue of supervision?". In order to gather information on the benefits of the counseling on the growth of the individual professional, participant to counseling training were asked "What were the advantages of counseling services in your professional experience?" In the latest case, categorization analyses were conducted only on 40 out of 55 professionals, due to the fact that only 40 of them asked for training in counseling services.

## **Results**

To investigate upon the benefits detected by the participants upon the different types of formation (Theoretical-practical formation, Supervision, Counseling), the answers given have been inserted into non-excluding categories (for this reason the sum of the percentage is over 100).

What follows are the percentages and the frequencies pointed out for every single intervention:

1. **Theoretical-practical formation:** the table 1.1 underlines that all of the participants reports to have identified some benefit from the theoretical-practical formation. Most of them claim that thanks to the formation a particular range of skills has improved, among which the theoretical-practical knowledge (Fq = 30; % = 54.5), their rate of consciousness and their knowledge on positioning and personal and team professional roles (Fq = 10; % = 18.2) and their own ability to use and/or create original working tools and techniques (Fq = 8; % = 14.5).
2. **Supervision:** the table 1.1 points out that all of the participants reports to have identified some benefit from the Supervision's meetings. Most of them claim that thanks to the supervision meetings they have improved: their skills of team work (Fq = 30; % = 54.5), their own ability to use and/or create original working tools and techniques (Fq = 28; % = 50.9), their rate of self-consciousness in terms of competences, feelings, emotions and so on (Fq = 9; % = 16.4).
3. **Counseling:** the table 1.1 points out that all of the participants reports to have identified some benefit from the Counseling meetings. Most of them claim that thanks to the supervision meetings they have improved: their skills in problem solving and orientation towards the goal (Fq = 39; % = 97.5); a professional and personal growth (Fq = 37; % = 92.5); the self-consciousness rate (Fq = 22; % = 55); skills in facing fears, anxiety and professional and personal problems (Fq = 11; % = 27.5).

**Table 1.1 Analysis of the categories**

Category	Formation (N = 55)		Supervision (N = 55)		Counseling (N = 40)	
	Frequency	%	Frequency	%	Frequency	%
Theoretical-practical knowledge	30	54,5	4	7,3	0	0
Consciousness and knowledge of positioning and professional roles	10	18,2	5	9,1	4	10
Better ability to work in a group	6	10,9	28	50,9	3	7,5
Better ability to organize time and/or resources/spaces	2	3,6	0	0	0	0
More knowledge linked to the Mission	2	3,6	0	0	0	0
Increasing in motivation	3	5,5	0	0	1	2,5
Increasing in resilience	2	3,6	0	0	0	0
Problem solving/orientation towards the goal	6	10,9	6	10,9	39	97,5
Professional and personal growth	5	9,1	1	1,8	37	92,5
Application and/or creation of working tools and techniques	8	14,5	9	16,4	1	2,5
Improvement in the interventions	5	9,1	7	12,7	1	2,5
Increasing of the self-consciousness	5	9,1	19	34,5	22	55
Facing fears, anxiety and conflicts	0	0	0	0	11	27,5
Projecting oneself to the future and/or being able to face changes	0	0	1	1,8	7	17,5
Nothing new	0	0	0	0	0	0
Other	2	3,6	1	1,8	0	0
Not answered	15	27,3	10	18,2	6	15

### ***Study 2: effectiveness evaluation on competences and abilities of professional individuals***

***Purpose of the study:*** The purpose of the study is to verify the effectiveness of the training path P.E.O, in terms of acquired competencies and abilities. In the aftermath of the realization of the biennial training programme "High Training" (80 hours of formation per year), we expect an increase of problem-solving activities (of people enrolled in the programme), of self-determination levels and professional effectiveness by the end of the programme.

### **Methodology**

***Participants:*** In the first year 9 professionals were enrolled in the "High training programme", while 25 professionals were enrolled in the second year. Human resources enrolled in the second year of the training programme were followed and evaluated (by their trainers) in individual sessions aimed at creating an homogeneous group. Participants professional profiles were categorized on the basis of two different parameters: the roles they covered (Coordinators and Employees) and their sectors: education, project management, communication, administration.

### ***Instruments:***

- ***Problem Solving Inventory*** (Nota, Heppner, Soresi, & Heppner; 2009) intends to evaluate the skills to analyze and face challenging and unexpected situations. The self-report instrument is made up of 4 different components: a) self-effectiveness in problem-solving skills; b) The attitude to face challenging situations; c) self-control in challenging situations; d) self-evaluation of problem-solving abilities.

- ***Professional Self-efficacy*** (Soresi & Nota, in press.) intends to gather self-evaluations concerning one's beliefs of professional effectiveness. The self-report instrument is made of 4 different components: a) his/her own skills to communicate and establish a good alliance with customers; b) Team-playing skills; c) The ability to conduct observing and assessment activities; d) The ability to plan ones' professional interventions; e) Professional self-effectiveness, to judge oneself able to pursue his/her own professional goals and to judge oneself to have the needed skills to face challenging situations.

- ***Questionnaire on self-determination*** (Soresi & Nota; 2007): The self-report instrument is made up of four components: a) Self-determination towards future decisions; b) Self-determination about one's own spare time; c) Self-determination in expressing and exploiting one's own abilities and decisions; d) Self-determination in expressing his/her own ideas and feelings.

### **Results**

With the aim of verifying the effects of training throughout 2 years of enrollment in the training programme, trainers encompassed in the programme schedule 4 evaluating sessions: a pre-post evaluation to be realized during the first year of programme (pre = 2010; post = 2011) and one evaluating session in the second year of the programme (pre = 2011; post = 2012).

What follows is the analysis modalities and the obtained results, after the second year of formation pre-post evaluations, as the number of the participants attending the first year of formation has been very little (9 subjects).

***Synthesis of the outcomes of the second-year-training:*** In order to verify whether there are significant differences in problem solving skills, professional self efficacy and self determination in professional who completed the "High Training programme", we conducted an repeated analysis of variance (we measured variance before and after the training). The analyses conducted highlighted the presence of some statistically relevant differences with reference to professionals problem – solving skills [Lambda di Wilks: .711, F (3,44): 4,471 p: 0,004]. Those participants who benefited from the training programme are more inclined to face challenging situations rather than to avoid them, and they tend to judge themselves more able to solve problems. Furthermore, the analyses conducted highlight a statistically relevant difference between the two phases preceding and following the training programme, [Lambda di Wilks: .325, F (5;18): 7,474; p: 0,001]. This difference concerns professional skills to communicate with their customers and to establish a good alliance [F (1, 23): 32,646 p: 0,000]. The trained professional believes that he/she is able to be understood by people he/she takes care of and from his/her family members, and to be able to encourage family members or co-workers cooperation

more than he was deeming himself able before being enrolled in the training programme.

In addition, the analyses conducted highlight a statistically relevant difference between the two phases, preceding and following the training concerning the perceived self-determination levels in expressing and taking advantage from one's own abilities and decisions, [F (1,23): 6,516; p: 0,018]. The outcomes of the questionnaire show a statistically relevant increase of the professionals persuasion to make good choices and to be able to fully take advantage from one's own potentialities and capacities. The trained professional is more able to use his/her own resources and make decisions.

**Table N.2 : Second year of training**

PRE	POST		M	DS
	M	DS		
Self-efficacy in trained professionals problem-solving skills	53,29	6,35	55,63	8,05
Inclination to face challenging situations	70,04	12,25	75,88	12,11
Self-control	18,04	5,48	20,25	4,30
Self-evaluation of trained professional problem solving skills	141,38	20,91	152,58	21,17
Ability to communicate with customers and to establish a good alliance with them	19,63	5,13	24,04	5,70
Ability to work in team by encouraging co-workers cooperation d	24,96	3,57	25,29	4,68
Ability to conduct observing and assessment activities	19,88	3,95	19,25	5,99
Ability to plan one's professional interventions/actions	14,58	4,42	14,50	4,13
Professional self-efficacy	47,79	7,37	49,00	7,84
Self-determination towards future actions	18,96	1,49	19,29	1,76
Self-determination about one's spare time	21,87	2,74	21,92	2,53
Self-determination in expressing and take advantage from one's own abilities and decisions	32,79	3,09	34,46	2,60
Self-determination in expressing one's ideas and feelings	25,62	4,77	26,42	4,27

### Study n. 3: Turnover Analysis in relation to triennial educational plan

**Purpose of the study:** The purpose of the present study is to present a quantitative analysis of the incidence of the educational plan on human resources turnover of two Italian third sector's organizations endowed with the same and uniform structure. The purpose is to observe for three years one after the other, the relation existing between the level of training human resources have benefited from within their organizations and their turnover within the same organizations. The training structured by the P.E.O. has formed a group of resources through two types of training: Higher education and Average education.

**Participants:** the research has been conducted upon a total of 130 resources for the first year of formation, upon 93 for the second and 98 for the third year. The information about the annual firm's demography and the number and the involved participant's professional role are presented in the tables 1, 2 and 3.

*Table 1 - overall annual demography*

	2011	2012	2013
All the resources	130	93	89
Managers and coordinators	22	15	14
Instructors and employees	97	73	70
Operators	11	5	5

*Table 2 - annual resources and formation*

The Tree of Life	2011	2012	2013
Very formed	17	17	17
Formed	41	45	41
Not formed	89	48	48

*Table 3 - formation and professional roles*

The Tree of Life	2011	2012	2013
Managers and coordinators			
Very formed	9	9	9
Formed	13	13	12
Not formed	9	2	2
Instructors and employees			
Very formed	8	8	8
Formed	28	32	29
Not formed	69	41	41
Operators			
Very formed	-	-	-
Formed	-	-	-
Not formed	11	5	5

## Methodologies

For our analysis we have chosen to use just the most generic tax of turnover, defined in literature "overall turnover tax" . That rate is obtained by adding to the number of the entering resources at the beginning of the period, the number of the resources exited in that period, dividing the total for the number of the average organic and multiplying it for 100. The average organic is calculated by adding the organic present at the beginning of the period with the organic present at the end of the period (Rif: system "H1 - turnover unique module for the calculation of the staff turnover with basic information about the staff" Human Resources & Software).

Entered + exited (in the period)  
 Overall turnover tax = average organic X100

\*(Organic at the beginning of the period - organic at the end of the period)/2

The firm's population has been divided regarding roles into 3 macro-categories afferent the contractual position of the resources<sup>4</sup>:

- Managers and coordinators of the service<sup>5</sup>
- Instructors and Employees<sup>6</sup>
- General Operators<sup>7</sup>

A further categorization has concerned the human resources for received formation in 3 groups:

- The "formed" (15-240 hours in three years)
- The "very formed" (80-240 hours in three years)
- The "not formed" (formation for a maximum of 14 hours in three years)

## Results

As follows there are the datas concerning the turnover taxes for each year.

As the table 4 shows it is easy to see how the turnover tax has decreased during the three formation years, in particular for the formative resources.

*Table 4 - average year turnover and formation*

<b>The tree of life - rate of turnover</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>
All the resources	74,55%	52,50%	32,62%
Very formed resources	16,67%	0,00%	5,27%
Formed resources	21,64%	24,13%	5,16%
Not formed resources	110,01%	87,62%	62,86%

In the following table there are shown the tendencies of the tax in relation with the firm's subgroups (table 5)

*Table 5 - exited and formation of the annual firm's categories*

<b>Tree of life</b>		<b>2011</b>	<b>2012</b>	<b>2013</b>
Managers and coordinators	All the resources	7	2	0
	Very formed resources	0	0	0
	Formed resources	0	1	0
	Not formed resources	7	1	0
Instructors and employees	All the resources	43	17	7
	Very formed resources	0	0	1

<sup>4</sup> the work contracts used are two: the national collective contract (CCNL) of the social and commerce cooperations. The acronyms are referred to the contractual levels

<sup>5</sup> contractual position: CCNL Social cooperations levels S1, E1 and industry and commerce contract category: manager

<sup>6</sup> contractual position: CCNL social cooperations levels d2, d1

<sup>7</sup> contractual position: CCNL social cooperations levels a1

	Formed resources	2	3	2
	Not formed resources	41	14	5
Operators	Very formed resources	6	1	0

## Conclusions

From the qualitative analysis presented in the first research, it emerges that for all the participants the theoretical-practical formation, supervision and counseling produced positive results (the frequencies of the category "it hasn't had benefits or changes" are zero for the three typologies of intervention). Moreover, from the analysis of the specific categories for every single kind of formation, it seems to emerge that the different formation methodologies allow to acquire competences and to improve in different but synergic areas. From the analysis conducted, shown in the second research, we can conclude that training programmes with a duration of at least 180 hours distributed throughout two years, are able to determine an improvement on problem solving skills, self-determination and belief in professional self-effectiveness in professionals who completed the training programme.

As concerns the turnover tax, as shown from the results presented in the third research, it comes out that the tax itself decreased during the three years of formation: at the beginning of the period it was 74,55% and at the end of the period it is 32,62% for all the resources, in particular for the resources formed at the beginning of the period it was 21,64% and at the end of the period 5,16%. Considering the firm's stages, the turnover tax for formed managers and coordinators is 6,72% while for those resources who are in the same firm's category but have not been formed is 62,23% and for the resources who received more formative hours is 0. For the formed instructors and employees it is 23,89%, while for those resources who are in the same firm's category but have not been formed it is 92,82% and for the resources who received more formative hours it is 15,00%.

The presented datas show how to invest resources in formation can lead to many different advantages in no-profit organizations both in terms of increasing those competences and necessary abilities in order to face nowadays challenges, both in terms of reduction of those rates that influence the turnover. Moreover the P.E.O. based on the theoretical-practical preconditions of the pedagogic method Pedagogy for the Third Millennium (Paoletti, 2013), seems to be able to influence in a positive manner those skills and competences pointed out by different authors as skills and necessary competences to face the peculiarities of nowadays social political and economical context (Luthans, Youseef et Avolio, 2007; Prugsamatz: 2010). As a matter of fact, we believe that the formative programs made for the organizations should aim to increase the awareness of the individual role and profession with the aim of connecting once again the individual to his or her deepest aspirations, by strengthening the ethical dimension of his conduct. This allows the individual to interpret difficult situations as opportunities to catch.

We underline some limits of the study represented both by the distribution and the amount of participants both by those factors linked to the turnover, for which it has been difficult to be able to keep, during the formative trainings, the same group of

participants. The goal of future researches is to replicate the presented researches on a more wide amount of participants that could take in consideration more firms of the no-profit sector and associate to those a control group.



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***The Role of Higher Education in Economic Transformation and Sustainable Development in Nigeria***

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**Abstract**

Higher Education has a high public value in terms of its contribution to economic transformation and sustainable development through articulated learning and teaching programmes. The paper examined the economic insecurity challenges, its implications for economic stability and the role of Higher Education in ensuring sustainable development in Nigeria. The study adopted a descriptive survey design and is guided by two research questions and one hypothesis. The sample consisted of academic staff and non-academic staff randomly selected from Federal Universities in South- West, Nigeria. The Universities and Economic Development Questionnaire (UEDQ) rated on 4-point response modes was the instrument used. The face validity of the instrument was ascertained by four experts made up of two senior academic staff and two senior non-academic staff. The internal consistency of the instrument was established using Cronbach Alpha. It yielded a coefficient of 0.76. Descriptive statistics (frequency counts and percentages) and t-test statistic were used to analyze the data. The result indicated that there are differences in the perceptions of academic staff and non-academic staff on the roles of University Education in ensuring Sustainable Development. It also showed that entrepreneurship, vocational and technical education were not fully integrated into the university curriculum for economic transformation. Based on the findings, it was recommended that university education should aim at workforce development and education, entrepreneurship, and quality-of-life factors that will enshrine a sustainable development process.

Keywords: Higher Education, Economic Transformation, Sustainable Development.

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## Introduction

Education has for long been recognized as a basic tool for economic development of any nation. This is predicated on the notion that it empowers any nation to rise to the challenges of social and economic transformation as well as technological change. In developing countries, the huge investment in education is premised on the expectation of its role in contributing to social reconstruction and economic development as well as creation of sustainable economic growth. Transforming the economy for sustainable development cannot be complete without education because it has a link with nation building and economic development.

According to the World Bank (2013), despite the high economic growth reported in official statistics, Nigeria is yet to find a formula for translating its wealth of resources into significant welfare improvements for the population. Job creation and poverty reduction are not keeping pace with population growth, implying that the number of underemployed and impoverished Nigerians continue to grow. Notably, Isuku and Enumenu (2010) found that the foundation of economic growth and success has been linked to Education. In recent times, most countries including Nigeria are making frantic efforts to develop their higher education system to meet the emerging economic insecurity challenges.

Higher Education Institutions (HEIs) all over the world are centres for educating, analyzing data, creating information, imparting knowledge which is of utmost importance for development and management of the future for sustainability in different societies (Alufohai, 2012). Higher education had in different dimensions contributed to the advancement and application of knowledge with its basic fundamentals in the construction of knowledge economy to sustain the nation. In the face of challenges linked to economic growth, the role of higher education in bringing about sustainability cannot be over emphasizes. Otoh (2012) found higher education to be a correlate of socio-economic development and most especially a vital process in economic growth all over the world with its attendant effect on improved productivity, social welfare and empowerment.

The Nigerian higher education system comprised the universities, polytechnics and colleges of education. They are primarily owned, controlled and funded by the Federal Government, State Government, or Private individuals. In this study the focus is on the university system. The university as an institution of higher learning has an intellectual function of teaching and research. Thus, university education facilitates creation and sharing of knowledge for the overall socio-economic development.

A stable government by its nature is supposed to be a key element in the development of the nation. This assertion was anchored on the belief that an elected government would be able to facilitate security for the generality of the people, as well as provide conducive environment for the safety of the economic and social capital investment, through the instrumentality of the law (Adeniran, 2013). Any government that seeks to achieve economic transformation against the background of acute food shortage, population explosion, low level of production and per capita income, low technological development, inadequate and ineffective public utilities, and chronic unemployment, as presently experienced in Nigeria, has a false sense of economic security. Going by the Nigerian situation, the study of Adeniran found that the real

threats to economic stability are poverty, inequality and exploitation. One can also posit further that real sustainability must rest on economic prosperity.

Bossert and D'Ambrosio (2013) averred that economic insecurity is a multi-faceted issue aroused by anxiety resulting from inadequate economic safety and significant potential economic losses. Economic insecurity, which can also be referred to as financial insecurity, is the condition of not having stable income or other resources to support an individual's standard of living now and in the foreseeable future. It includes probable continued insolvency; unpredictability of the future cash flow of a person or other economic issues such as a country's unemployment or job insecurity, poverty and inflation. Adedeji and Eziyi (2010) affirmed that economic insecurity is the inability of a country to mobilize all its intellectual, human, military, legal, financial and other resources to defend its economic interests effectively. Though, economic insecurity has now come to characterize life in developed countries too, the chronic insecurity rooted in poverty spread across the developing countries that is more damaging from the viewpoint of the overall human welfare (Ike-Obiora, 2008). According to World Bank estimates (2009), the country has a total population in excess of 154 million, of which almost 70 percent live below the international poverty line. This is in consonance with the affirmation of Adedeji and Eziyi (2010) that the connection between economic insecurity and poverty is in vicious circle. However, it turns out that population explosion and abject poverty which appears to be undisputed features of developing economy predominates in Nigeria (Ike-Obiora, 2008). Paradoxically, Nigerians now have to contend with harsh socio-economic conditions leading to the deterioration in their living standards.

Unemployment is a state of an individual or group of people being out of job and is also one socio-security challenge that successive governments, over the years, have identified and acknowledged. Changes in unemployment depend mostly on inflows made up of non-employed people starting to look for jobs, of employed people who have lost their jobs and in search for new ones and of people who stopped looking for employment because the sectors driving the economic growth are not high job-creating sectors. Successive governments in Nigeria have identified the threat posed by high unemployment and had taken several steps to combat it by training youths in relevant skills in order to generate employment. The Federal Government has initiated the Youth Enterprise with Innovation in Nigeria (You WIN) Programme, in collaboration with the Ministry of Finance, the Ministry of Communications Technology, the Ministry of Youth Development and the Ministry of Women Affairs and Social Development, in line with the FG drive to create more jobs for the Nigerian youths. Among the goals of the programme is the launching of an annual Business Plan Competition for aspiring young entrepreneurs, in partnership with the Nigeria private sector, who are to provide funding, support and mentoring for the aspiring young entrepreneurs.

Unfortunately, government's efforts appear not to be making the desired positive impact as unemployment rates have been steadily increasing and Nigerian youths are increasingly finding it difficult to gain employment (Adedeji and Eziyi, 2010). Unemployment rate increased from 23.90 percent to 24.30 percent within the seven year period in review (2006- 2012). This official statistics presentation is indeed nothing compared to the reality of the unemployment situation, as indicated in the

report by the Ministry of Youth and Development that 42.2 percent of Nigeria's youth population was out of work as at 2011. This is represented in Table 1.

**Table1**  
**Nigeria Unemployment Rate (2006 -2012)**

Labour	Last	Prev- ious	High- est	Low- est	Fore- cast	Unit		
Population	166.21	2012- 12-31	164.39	166.21	45.15	166.49	2013- 12-31	Milli- on
Unemploy- ment rate	23.90	2011- 12-31	21.10	23.90	5.30	24.30	2012- 12-31	Perce- ntage

According to Ogwuma (1999), poverty is a word which vividly describes the deplorable living conditions of individuals and communities in a state of economic and social deprivations. By this definition, poverty manifests itself not only in economic deprivation, but in terms of the individual lack of access to basic social amenities. A comprehensive definition by World Bank (2009) depicted poverty as a state where an individual is not able to cater adequately for his or her basic needs of food, clothing and shelter, unable to meet social and economic obligations, lacks gainful employment, skills, assets, self-esteem and has limited access to social and economic infrastructures such as education, health, portable water and sanitation, and therefore has limited chance of advancing his or her welfare. A person is counted as poor when his measured standard of living estimated on income or expenditure is below a minimum acceptable level, usually referred to, as the "poverty line". Poverty can either be structural or transitory depending on their causes, either by ill-health, disability, inadequate income or unemployment. The official poverty line in Nigeria is drawn on the basis of income sufficient for per capita consumption of 3000 calories a day plus other essential non-food items pace of economic growth in the country. This is represented in the Table 2.

**Table 2: Nigerian Poverty Rates between 2009- 2014 (Percentage of Population)**

	2009-2010	2013-2014
Per capita		
Poverty rate	62.6	64.2
Urban poverty	51.2	52.2
Rural poverty	69	73.4
Adult equivalence		
Poverty rate	46.1	48.3
Urban poverty	34.3	36.8
Rural poverty	52.9	57.4

**Source:** Central Bank of Nigeria Report 2009

Inflation can be described as the rate at which general level of prices for goods and services is rising and subsequently, purchasing power is falling. Countries' Central banks usually attempt to stop severe inflation, in an attempt to check excessive growth of prices of goods and commodities and retain them at barest minimum level. High food prices drove up inflation in 2008 in the context of poor weather conditions in

Nigeria and increases in world food prices. The continued high inflation in Nigeria in 2009-2010, despite declines in food and commodities prices, no doubt reflected the strong fiscal expansion during those years.

**Table 3**

**Historical and Projected Annual Growth rates for Real GDP, Inflation and value of total trade in Nigeria for the Period 2007-2015 (% figures)**

Year	2007	2008	2009	2010	2011	2012f	2013f	2014f	2015f
<b>GDP</b>	6.45	5.98	6.96	7.98	7.36	6.5	8.04	7.43	7.25
<b>Trade</b>	5.08	16.88	-3.00	57.49	47.87	-	11.25	20.6	16.44
<b>Inflation</b>	5.57	11.98	11.97	13.59	10.91	11.03	13.57	12.21	12.04
								12.04	11.91

**Source:** Source: Central Bank of Nigeria Report 2011

Recognizing the foregoing, Successive Nigerian governments implemented several development plans aimed at serving as a catalyst for expanding the country's production possibility frontier. The transformation to democratic form of government with the election in 1999 ushered in comprehensive economic reform programmes. Ikhide and Alawode (2010) observed that homegrown strategies were employed by the civilian administration to revive the economy. Examples of such strategies are the National Economic Empowerment and Development Strategy (NEEDS), Youth Empowerment Scheme, Rural Infrastructure Development Scheme, Social and Welfare Service Scheme and Natural Resource Development and Conservation Scheme.

Economic transformation forms the basis of dynamic changes in the structure from a planned economy to a market-oriented economy. According to Soludo (2011), it is the process that guarantees greater prosperity and quality of life for the average citizen and these are form part of the pillar of sustainable development. On the other hand, sustainable development is aptly defined as development which focuses on using pattern of resource to meet human needs while preserving the environment so that these needs can be met in the present without compromising the ability of future generations to meet their own needs (United Nations, 2004). This definition reinforces the need for each generation to progress to more desirable state now and in the future.

The concept of sustainable development was made prominent among countries in the Bruntland Commission report of 1987 and its aim is to meet human needs while ensuring the sustainability of natural systems and the environment, so that these needs can be met not only in the present, but also for generations to come.

The expansion of education has been one of the main factors influencing the economic and social advancement of the country. Government has been working towards building Nigeria as a knowledge hub centre by expanding access to the world class higher education by enhancing research, development and innovation. It is important for developing countries, of which Nigeria belongs, to develop higher skills, professional capacity and advanced knowledge and to make optimum use of

technology to address sustainable development and challenges if they are to sustain growth in a globalised context. Through enhancing quality, widening access, increasing research and development, generating new knowledge and innovation, Nigeria strives to become an active player in the international higher education market.

It is with this objective that the government in Nigeria is placing high importance on knowledge driven growth and innovation for its future development. Major investments are being made by the government to develop higher education. Furthermore, reputable tertiary education institutions are being encouraged to operate in Nigeria. While some of them already have branches in Nigeria or are working in partnership with local institutions, the open learning is expected to play a significant role in creating higher education opportunities through the newly established open university of Nigeria. Special attention is given to quality of teaching and learning programmes, this is intended to consolidate the quality assurance at all levels of the tertiary education sector, through upgrading of qualification of faculty members, peer review of teaching and by increasing research and innovation as well as in increasing employability of graduates through effective linkages with the private sector to obtain key information on labour market needs. The ultimate objective is to develop the knowledge sector as a new pillar of the economy and increase its current contribution of 2.7% of Gross Annual Product (GAP) to about 10 percent by 2025.

Higher education holds the keys to sustainable development in Africa. Despite gains made under both the Millennium Development goals and the decade of Education for Sustainable Development (2005-2014), Africa continues to face deep-rooted challenges to sustainable development. In 2011, the United Nation University Institution for Sustainability and Peace (UNU-ISP) hosted an international symposium on the role of higher education for sustainable development in Africa, at UNU Headquarters in Tokyo to consolidate their work with universities in Ghana, Kenya, Nigeria, South Africa and Zambia which aims to develop postgraduate programmes on 'integrated moral development', 'sustainable urban development' and 'management of mineral resources'. These programmes are now one step closer to implementation, following the signing of memorandums of understanding (MOUS) with eight Africa universities in the margins of the symposium. The symposium brought together over fifty leading experts in education and development in Africa and Japan, including four chancellors from leading Africa universities. It aimed to share lessons from UNU-ISP collaborative initiatives to help African universities to develop postgraduate education programmes for sustainable development.

Higher education development needs to be sustainable and should consider how to incorporate Africa's cultural richness and traditions of living in harmony with nature. Initiatives should be supported to integrate sustainable development into higher education. This requires an increase in education funding, reconciliation of current discipline based educational structures with the trans-disciplinary requirement of education for sustainable development. A new educational model is needed to develop skills required to respond to complex social, environmental and economic change. The strategy and plans of the Nigerian government for creating and improving capacity for sustainable development rests on the development of a blueprint for economic security which also rests on a vibrant, innovative and creative Higher

Education sector, capable of proffering solution to the country's myriad of growing national developmental problems.

The dimensions of economic insecurity that poses threats to people and business survival are unemployment, poverty and inflation. They in turn stifle sustainable development and impose a great strain on higher education, where individuals, family, community, business organizations and Government will now beam their searchlight for solutions. But, the stakeholders are yet to come to terms with the fact that economic insecurity is contagious and that Higher education too are being afflicted with underfunding and job insecurity. It is thus imperative to promote sustainability by channeling human and material resources towards meaningful and positive ends. A nation with an insecure environment is doomed to distractions and possible disintegration. Hence, this study intends to elucidate on issues pertaining to economic insecurity and its implications for sustainable development in Nigeria and the relevance of higher education in the attainment of an economically viable nation.

### **Statement of the problem**

Education is central to economic development processes and is essential for sustainability, al-be-it, it has often been overlooked in the past as part of the re-evaluation strategies for poverty reduction. In Nigeria, stakeholders have successfully advocated for an increase in the share of public resources allocated to states and local governments in a bid to promote sustainable development. However, poverty programmes not linked to economic transformation through education may fail to yield the required results. It has been observed that there is a decline in the level of inclusive education at the higher education level which has really affected graduate output especially in their contributory effort to eradicate poverty and create sustainability.

More often than not, sustainability focuses on two dimensions, environment and economy. Grilo (2012) argued for a third dimension which is social sustainability and a fourth dimension which is institutional development. It may be argued that the growing demands and challenges spur up the responsibility for the environmental, economical and social contexts to response to the increasing pressures from stakeholders. Consequently, in the pursuit of sustainable devolvment, the society rely more on the interaction between the three dimensions and emphasis was however, placed primarily on ecology, business sufficiency and socio effectiveness rather than with institutional effectiveness. Arising from the above position, the roles of the university as a higher education institution were questioned. It is against this background that the study sought to examine the role of higher education in economic transformation and sustainable development.

### **Research Questions**

1. To what extent do economic insecurity challenges affect economic transformation in Nigeria?
2. To what extent has higher education contributed to sustainable development in Nigeria?

## Hypothesis

1. There is no significant difference between the perceptions of academic and non-academic staff on the roles of higher education in ensuring sustainable development in Nigeria.

## Methodology

The study adopted a descriptive survey design. The population comprised 16 public universities (federal and state) in south west Nigeria. The stratified and random sampling techniques were used to select eight universities (five federal and three states) out of the total population of 16 public universities. A total sample of 1003 comprising 506 academic and 497 non-academic senior staff were randomly selected from a total of 1005 and 9946 respectively, representing 5% of the population from the eight universities. The Universities and Economic Development Questionnaire (UEDQ) rated on 4-point response modes was the instrument used to elicit responses. The face validity of the instrument was ascertained by four experts made up of two senior academic staff and two senior non-academic staff. The internal consistency of the instrument was established using Cronbach Alpha. It yielded a coefficient of 0.76. Descriptive statistics (mean and standard deviation) and t-test statistical tool were used to analyze the data.

## Results

### Research Questions 1

To what extent do economic insecurity challenges affect economic transformation in Nigeria?

**Table 4**

**The Extent to which Economic Insecurity Challenges Affect Economic Transformation**

S/N	Items	Mean	SD	Remark
1	The deplorable living conditions of people due to poverty have affected all government policies in transforming the economy.	3.45	0.67	High extent
2	Despite all the economic policies of government, the average citizen could not adequately provide for his or her basic needs of food, clothing and shelter.	3.25	0.88	High Extent
3	There is limited access to social and economic infrastructure that can help to transform the economy.	2.70	1.02	High Extent
4	The rate of living is rising as prices of goods and services are rising and purchasing power falling.	2.55	1.14	High Extent
5	High unemployment rate is a challenge to economic transformation agenda of the government	3.22	0.93	High Extent
6	Past government initiatives on economic transformation are faced with stiff problems from the implementation stage.	3.24	0.85	High Extent
7	Poverty permeates all socio-economic indicators of	3.36	1.97	High

8	progress in the society. Economic insecurity challenges of poverty, unemployment and inflation has adverse effect on government policies and activities of economic transformation.	3.03	1.06	High Extent
9	Government economic reform programmes have helped to alleviate poverty.	2.31	0.72	Low Extent
10	Strategies employed by the government have helped to guarantee greater prosperity and quality of life for the average citizen.	1.76	0.61	Low Extent

Table 4 shows that the mean rating of all the items except items 9 and 10 are above the criterion mean of 2.50. This indicates that majority of the respondents were of the opinion that to a high extent economic insecurity challenges as exhibited in form of unemployment, poverty and inflation have adversely affected economic transformation. Furthermore, Items 9 and 10 revealed that to a low extent, government initiated reforms and strategies have not help in transforming the economy.

### Research Question 2

To what extent has higher education contributed to sustainable development in Nigeria?

**Table 5**  
**The Extent to which Higher Education Contributed to Sustainable Development in Nigeria**

S/N	Items	Mean	SD	Remark
1	Involvement of my institution in Public Private Partnership has helped in enhancing sustainable development.	3.37	0.88	High Extent
2	Creation and sharing of knowledge for overall socio-economic development.	2.41	0.80	Low Extent
3	Enhancement of innovation through research activities	3.41	0.92	High Extent
4	Improving teaching and learning through mainstreaming into the traditional curricula new interdisciplinary courses	1.77	0.66	Low Extent
5	Contribute to the development of human capital and skills through the provision of graduates for the labour market.	3.24	0.91	High Extent
6	Provision of technology assistance to potential entrepreneur through technology and vocational education.	2.08	0.72	Low Extent
7	Mobilizing the resources of the university towards sustainable development.	1.74	0.66	Low Extent
8	Transform the society by instilling changes associated with holistic development of the individual	3.39	0.92	High Extent

9	Development of skill and values and creation of awareness on economic sustainability.	1.86	0.68	Low Extent
10	Enriching the quality of life of individuals by providing them with expertise, assistance and economic power.	1.60	0.63	Low Extent

In Table 5, three items 1, 3, 5 and 8 had mean rating above the criterion mean of 2.50 while all other items (2, 4, 6, 7, 9 and 10) had mean ratings below 2.50. Responses to Item 1, 3, 5, and 8 indicated that the university had to a high extent contributed through partnership, research and human capital development to transform the society. Other items with low extent indicate that there are some other areas where the university is lacking in promoting sustainable development.

### Hypothesis

1. There is no significant difference between the perceptions of academic and non-academic staff on the roles of higher education in ensuring sustainable development in Nigeria.

**Table 6**  
**Differences in the Perceptions of Academic and Non- Academic Staff on the Roles of Higher Education in ensuring Sustainable Development.**

	N	Mean	SD	Df	t-cal	t-crit	Decision
Academic Staff	506	8.24	3.01				
Non-Academic Staff	497	7.32	3.05	1001	2.53	1.96	Reject

Table 6 shows that the calculated t-value of 2.53 is greater than the table value of 1.96 at 0.05 level of significance and 1001 degree of freedom. This means that there was a significant difference between the perceptions of academic and non academic staff on the roles of higher education in ensuring sustainable development. The null hypothesis was therefore rejected.

### Discussion

The study revealed that to a high extent, economic insecurity challenges in form of unemployment, poverty and inflation have adverse effect on all policies and activities of economic transformation. It further showed that government efforts in terms of reforms and strategies have not helped in sustaining the momentum needed for transforming the economy. These findings are in tandem with the finding of Adeniran (2013) that the real threats to economic stability are poverty, inequality and exploitation. Ike-Obiora (2008) affirmed that the chronic insecurity rooted in poverty is more damaging to the economy from the viewpoint of the overall human welfare. The probable reason for this result is not far fetch, this could be as result of the monolithic nature of the country's source of income and overdependence on a single primary product, crude oil, has made its economy highly volatile and susceptible to

vulnerabilities in the global market environment. These findings have implications for the enhancing access to social and economic infrastructure that can help to transform the economy.

Also revealed is the extent to which the universities have contributed through partnership, research and human capital development to transform the society. However, they are lacking in the areas of mainstreaming into the traditional curricula new interdisciplinary courses, and enriching the quality of life of individuals by providing them with skills, values, expertise, assistance and economic power. This finding corroborates earlier study of Otoh, 2012, that higher education is a correlate of socio-economic development. Furthermore, in congruence with this finding is the assertion of Etesike (2011) that higher education institutions have failed in their role of enriching the individual learners with informed curriculum necessary to fit into the labour market. This finding has implication for higher education reform and improvement.

The findings revealed a significant difference between the perceptions of academic and non academic staff on the roles of higher education in ensuring sustainable development. The reason adduced for this finding is the difference in scope of purview. That is, the academic staff view the role of the universities from academic angle in term of curriculum, teaching and learning while the non-academic staff focused on the administrative aspect and community relations which are not directly related to the production of human capital required to balance and transform the economy. This finding has implication for review of the roles of universities in economic transformation and sustainable development. This is because investment in education is premise on high socio-economic returns and social reconstruction which will help to create a sustainable economic growth.

### **Recommendations**

1. This paper emphasizes the need for urgent solutions to the challenges posed by economic insecurity.
2. Higher Education should be seen as the fundamental mechanism for innovation and attainment of sustainable economic development as well as societal progress.
3. Based on the findings, it was recommended that university education should aim at workforce development and education, entrepreneurship, technical and vocational education, ICT and quality-of-life factors that will enshrine a sustainable development process.
4. Governments and the private sector need to give top priority to Higher Education in terms of funding and patronage.
5. More than ever, the world needs effective global leaders and stronger higher educational systems that prepare the current and future generations of entrepreneurs, workers, teachers, managers and individuals with the skills needed to succeed and promote sustainable development.

### **Conclusion**

Reforming higher education and improving teaching and learning through mainstreaming into the traditional curricula disciplines holds positive implications for promoting enterprise business development and growth. Higher education institutions have the essential role of imparting knowledge, skills and changing attitudes and

values of people for the purpose of developing the society and bringing about sustainable development in the nation. As such, rethinking higher education so as to promote knowledge driven institutions that will continue to produce the critical human capital required for sustainability is necessary. It is imperative that stakeholders in higher education, most especially universities integrate various ways to become involved in knowledge sharing, exchanges and partnership for sustainable development. In this sense the universities will be able to play a more profound role than they have in recent years, that is, not just a provider of knowledge but an active partner in economic collaboration and be able to address in more coherent ways the challenges of sustainable development.



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The logo for the International Association of Agricultural Economists (iafor) is centered on the page. It consists of the lowercase letters "iafor" in a light blue, sans-serif font. The text is enclosed within a circular graphic composed of two overlapping, semi-transparent arcs: a larger, light blue outer arc and a smaller, light red inner arc, both of which are slightly offset from each other to create a sense of depth and movement.

***Technohumanistic-Based Character Education***  
***(A Perspective for Indonesian Educational Policies to Face the Global Challenges)***

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Anak Agung Istri Ngurah Marhaeni, Ganesha University of Education, Indonesia

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**Abstract**

Technohumanistic-based character education is an approach in teaching character developed by Dantes (2012) which involves three dimensions namely mastery of science and technology, mastery of moral values (moral knowing, moral feeling, and moral action), and wisdom. To know whether the approach is effective for character building, a post test-only control group design of quasi-experiment has been carried out involving 180 junior high school students taken from three classification of tourist destination in Bali (resort, stop over, and excursion). The dependent variables of the study were moral knowledge and wisdom (moral action which is based on moral feeling). Data were collected through questionnaires, observation, and interview. Data analysis was carried out by using multivariate analysis of variance. Results of the analysis show that Technohumanistic-based character education affects significantly to teenagers' moral knowledge and wisdom in the three tourist destination areas. Further analysis reveals a number of moral action emerged; for instance, in resort and stop over areas, teenagers avoid drugs; and in excursion area teenagers show more respect and are more friendly to visitors.

Keywords: character education, moral, technohumanistic perspective

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Education is the process of humanizing human or optimizing the development of human dignity (Dantes, 2010). It means that education must essentially take place within the human community and thus, in that process, the transformation of human culture happens from one generation to the next.

The development of human society becomes more advanced with the discovery of science and technology, which is also used by humans to answer the problems faced by them. In that context, the development of science will be related to the three dimensions of science: ontology, epistemology, and axiology. The ontology of science talks about the science object, which is in its development, it is based on verification procedures, objective and honest in one frame of epistemology of science, which is expected to provide welfare to human life as the dimensions of the axiology of science. They are the foundation of science development which is based on human values (Jujun Suryasumantri, 2000).

The rapid advancement of the development of human society, the needs and demands of life which are increasingly differentiated and specified, make it possible to bring individual lifestyles based on materialism, which slowly but surely lead to a society that tends to emphasize the extreme individual or group egoism. In an advanced society where science and technology development is considered to be characteristic of modern society and its success is more visible, the public is increasingly oriented towards materials and tend to keep away from a life which is based on the norms and values of humanity.

Today, people are increasingly obsessed with the material lifestyles which are increasingly urgent to be fulfilled, thus, the development of science technology increasingly leads to the fulfillment of material aspects of life, and if it is not realized, it will bring a tendency leading to the desertion of human values. The dominance of the fulfillment of the material needs of the community in various parts of the world has the potential to bring a wide range of violence, both in Europe, Arabic countries, America, and specifically in Indonesia which also virally occur, such as clashes among ethnics, races, religions, and groups. This is showed by the events such as Sambas Clash (2000) between Madura ethnic group and Dayak ethnic group, Sampang Madura Clash (2012) between two belief groups, Lampung Attack (2012) on Balinese ethnic, Jakarta Event (2012) between students of Senior High School 6 Jakarta and Senior High School 70 Jakarta, and Makassar State University Clash between the students of the Faculty of Arts and Faculty of Engineering (2012), and many others which always resulted on many casualties. It is suspected due to the tendency of education which is based solely on *learning to know* with the trend of prioritizing only the mastery of science and technology to fulfill the material needs and ignoring the transformation of human values to the younger generation, both in formal, informal, and non-formal education.

Related to the above issues, Dantes (2010) described that the activity to pursue mastery of science and technology become more frequent, especially in formal education. Almost all the activities in educational environment (read: school) leads to the development of science and technology only, thus all learning activities are characterized by the dominance of the activity of *thought* only. This goes so fast and becomes very common, which makes the fundamental of togetherness value fade away slowly but surely. The very fast development in science and technology has

presented a new challenge and an opportunity for mankind in all dimensions of life. This condition is reinforced by the grow of global life, so that every man and nation must always be ready to carry out the limitless global life. Globalization is a logical implication of the advancement of science and technology. Related to this, to be able to be a part of global community, everyone is required to be ready to compete in order to exist in this dynamic life. The revolution of information and communication as a direct result of the advancement of science and technology has eliminated the limitations of regional and territorial boarder, so for a community, this condition must be addressed quickly and comprehensively to save its identity (Schement, 2002; Jannes, 2001). For education, the condition is certainly a reality that must be addressed, especially because of the tendency of education is done solely only for the mastery of science and technology.

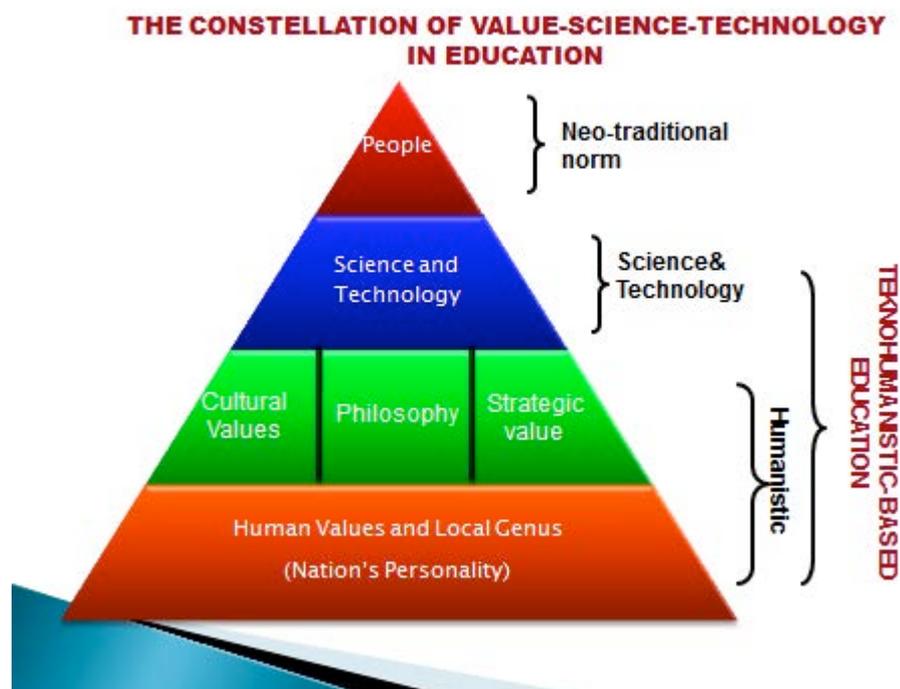
In fact, life is increasingly complex. Many evidences show the decline of understanding, ownership, and application of values in social life. Mastery of science technology that is not based on human values is used as a weapon to control and violate the human dignity of others. A low understanding of human values results in a variety of human conflicts. Therefore education should not only be based on the mastery of science and technology alone, but must also be based on the absolute values of humanity. The combination of the two dimensions should be integrated on youth education. Related to that, education should be able to answer the challenges. In other words, education should provide an opportunity for every student to acquire knowledge, skills, and values to equip them to enter the competition in the world. Therefore, the teenagers (learners) should be given meaningful learning, because, only with a meaningful learning, students can be equipped with life skills. Related to the background, Dantes' finding (2012) about technohumanistic-based learning was experimented to determine the effect of the implementation of the technohumanistic approach in learning on the character formation of students.

Indonesian society which tends to use the traditional typology, to be able to live harmoniously and happily in the new world environment (global), requires the presence of *Neo-traditional Norm* of new values rooted in traditional values which construct a new integrated value together with local geniuses. Some references in this regard show how clear and rapid the world changes are. Naisbitt (1997) has proposed *ten global megatrends* which will happen as *millennium global megatrend*. Rowan Gibson (1997) suggests three things connected to future life: *first, the road stop here*; which essentially states that the future will be very different from the past, and therefore requires a proper understanding of the future. *Second, the new time call for new organization*, which in essence states that with different challenges, the form of organization/institution is also different together with the characteristic of high efficiency and speed. *Third, where do we go next*; which essentially states that, with the various changes that occur, every organization or institution needs to formulate the right direction for the expected targets. Peter Senge (1994) also suggests that in the future, there will be a change from *detail complexity* to *dynamic complexity* that would make interpolation difficult. Rossabeth Moss Kanter (1994) states the future will be dominated by the values and cosmopolitan thought and everyone in every field, including education, is required to have 4C, namely: **Concept, Competence, Connection, and Confidence**. Thus in the future, education is needed that is not only based on the mastery of advanced science and technology, but also the understanding

and mastery of basic and solid moral values, which is called ***technohumanistic education***.

Material Welfare obtained by humans in life is the result of their thought in science and technology which has a direct impact on the welfare of human life. With the results of science and technology findings obtained, space and time can be shortened, various diseases can be overcome, information technology grows rapidly, and so forth, causing increased quality of human life. However, it will not mean anything if it is not based on values, ethics, and morals. It could be a boomerang for humans. The product of science of human technology could violate humans, even destroy this universe. Therefore, a strong basic understanding of the values of humanity is needed. The touch from education is absolutely needed, because *education is a process of humanizing human*, thus education is a vehicle to transform culture, and education itself is *intangible culture, a social culture, and supporting culture system*. Education acts as an agent to form civilization. Education is an important process for *nation and character building*. Martin R King Jr., said "*Intelligence plus character that is the true goal of education*". Education should be oriented to the future. Vision of the future of education is defined as a process that can generate individuals equipped with the knowledge, skills, and values necessary for living in the era of globalization.

International Commission on Education for the 21st Century established by UNESCO reported that in this global era, education is carried out by leaning on the four pillars of education, namely *learning to know, learning to do, learning to be, and learning to live together* (Delors, 1996), and Dantes (2010) in his research found another pillar: *learning to live sustainably*, which interpret that learners should understand the meaning of life, and survive in this world, so that the survival of mankind with support from nature could be realized harmonically and sustainably. Through these education pillars, learners grow into skillful individuals who realize all rights and obligations, as well as the mastery of science and technology, and preservation of the natural environment. Thus, we need a model of education that can transform intellectuality with a solid base of civility, that is, Technohumanistic Education Model. The concept of Technohumanistic Education can be described as follows.



Technohumanistic Education is an education which transforms *science-technology* and *civilization values* which is based on the *fundamental principles of human dignity*. In the implementation, Technohumanistic Education refers to effective character education, the principles are as follows: (1) Technohumanistic Education develop "Core Ethical Values" as the basis of good humanity characteristic, (2) the character and Technohumanistic Education should be defined comprehensively, including the mind, feelings, and behaviors. Character education is as the core of Technohumanistic Education that in general touches *cognitive, affective, psychomotor, and metacognitive*. Technohumanistic education is based on the mastery of science and technology that is based on the solid foundation of understanding, concern about the basic ethical values, and actions which are based on ethical values, (3) the school should be "a caring community" which should reveal itself as an educational institution that has a good character, and (4) a number of values should be learned: "*honesty, fairness, tolerance, prudence, self-discipline, helpfulness, compassion, cooperation, courage, and a host of democratic values*" (Lickona, 1991: 43-45), which simultaneously will form the character of students.

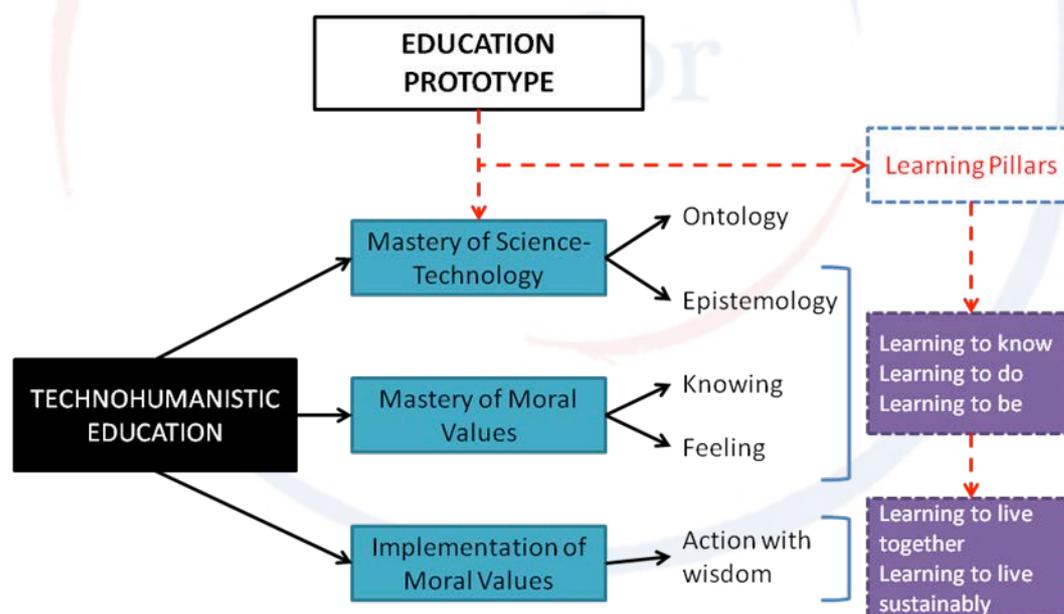
Based on the above theory, education and character development are classified into two dimensions, namely moral character and wisdom. Based on the constellation above, the following hypotheses are proposed: (1) there is a significant effect of the implementation of education with Technohumanistic approach towards the formation of students' moral as a character dimension; (2) there is a significant effect of the implementation of education with Technohumanistic approach towards the formation of students' wisdom as character dimension; (3) simultaneously, there is a significant effect of the implementation of education with Technohumanistic approach towards the formation of students' moral and wisdom as character dimension.

The population of the research was high school students in the province of Bali, Indonesia. The sample was taken by cluster random sampling technique. The sample consisted of 89 high school students, 45 teachers, and 45 parents. The data were

gathered using questionnaire with Delphi Pattern, selected interview, and focus group discussion. This study was conducted using experimental approach of post-test only control group design with two dependent variables, namely moral knowledge (Y1), and wisdom with the aspect of feeling and moral behavior (Y2). The research sample was gathered by random cluster sampling technique, tourism areas (A1), tourism destination areas (A1), excursion area (A3). The data were analyzed using descriptive analysis to validate the indicators of moral knowledge dimension and the indicators of wisdom dimension; trend analysis to validate the prototype of Technohumanistic Educational approach; and Multi Variate Analysis of Variance (MANOVA) to test the three hypotheses.

Based on the data analysis, it is found that; *first*, dimensions and indicators of character education consist of; (1) the dimension of moral with the indicators of; Moral Awareness, Knowledge of moral values, Ability to give moral perspective and moral development, Understanding of Self, Perspective about work, Self-esteem, Empathy, Love to goodness, self-control, Modesty, Compassion, Honesty, Loyalty, Faith; (2) the dimension of wisdom with the indicators of; Moral competency, Willingness, Habit, Self discipline, Responsibility, Friendship, Courage, Perseverance, and Decision making.

*Second*, the prototype of implementation of Technohumanistic-based character education is found with the following matrix.



*Third*, the experiment on the implementation of Technohumanistic-based character education on students in tourism areas, tourist destination areas, and the tourism path areas finds that: (1) moral knowledge of students taking Technohumanistic-based character education is significantly higher than those taking conventional education with  $F_{obs} = 9.127, p < 0.01$ ; (2) wisdom related to feeling and moral behavior of students taking Technohumanistic-based character education is significantly higher than those taking conventional education with  $F_{obs} = 29.93, p < 0.01$ ; (3) moral knowledge and wisdom related to feeling and moral behavior of students taking Technohumanistic-based character education is significantly higher than those taking conventional education with  $F_{Wilks' \text{ Lambda}} = 7614.624, p < 0.01$ .

The suggestions are addressed for: (1) formal, non-formal, and informal educators, it is suggested to implement it to the local areas, thus, the development and character building of students can be done optimally. This will have an impact on conducive social behavior which results in a positive impact on convenience social interaction of the nation; (2) the government, it is suggested to seriously promote the implementation of the proposed prototype. With the participation of government, it is expected to have a positive impact on the future of the nation.



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## **Examining and Determining the Extent Effect of the Research Methods Used by Teachers on their Educational Performance**

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### **Abstract**

This research is done to examine and determine the impact of the research methods used by teachers in their educational performance. The Statistical Society is all of the researcher teachers in the Tehran city Educational organization whose researches have been chosen by the Organization and relative departments. The tool used in this study is researcher made questionnaire .The research contains a main hypothesis and six minor hypotheses. Independent T-test was used to test the research hypothesis. The entire hypothesis is confirmed based on the results. Accordingly, the research methods used by teachers has been effective on increasing student participation in the learning process, improving relations between teachers and students, Identifying and resolving problems that disrupt learning, determining the appropriate method of teaching, using different tools and different types of learning opportunities and learning process, and improving relations between students, teachers and parents. Confirmed all the hypotheses of the study it can be concluded that the research method used by teachers was effective on their educational performance.

Keywords: research methods, teachers, educational performance, Tehran Educational organization.

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## Introduction

Nowadays the meaning of education is different from the past. Rapid developments in science and providing new technologies have made inevitable the necessity for revolution in educational activities process. Educational systems are committed to train the personnel who are able to understand the complex world and manage it creatively. Educating Creative and Thoughtful people require particular methods. The methods are interwoven with teachers and their professional performance. So one of the most important to meet the new requirements is development of teachers and trying to make it better.

Specialist, dynamic, highly motivated and interested teachers, play an important role in the achievement of educational goals. One of the methods that can help to promote the role-playing is more teacher involvement in the entire educational process. Researching is one of the ways making possible teachers involvement. Research is a tool that may enable teachers to contribute to even higher levels of decision-making. Mehrmohammadi, (1379) in new definition of Educational Research, classifies educational Research at three levels students, teachers and university levels. The second level of classification, named "the teachers level ". According to this view, the complex nature of the teaching-learning process in such a way that it cannot be expected a set of scientific findings concerning the relationship between the variables used as the sole support. As a result, because teachers will be able to carry out their professional tasks efficiently, have to do research and engage in the acquisition of new knowledge and reputable professionals. The teacher can assume the serious and complicated educational duties only if he has the courage and audacity to deviate from the well- known guidelines and testing innovative methods, In this case, we can mention him as a researching teacher.

## Statement of the Problem

Teacher research is a systematic research with the goal of helping teachers better understand to improve teaching and learning activities in the classroom. (Camp bell, 2004) Teacher study significantly contribute to the learning experiences of teachers, It helps them to gain new knowledge about the research, education, their students and themselves (Dixie, 2002)

Teacher- researcher in a systematic effort is seeking to develop a complete, accurate and comprehensive learning and teaching framework (Moher and Marian, 2004, p 24).Nofke & Zeichner (1382), offer the following points about the achievements of teachers:

It reshapes teachers' definition about their skills and professional roles and provokes their sense of competence and confidence in their tasks, Increase their awareness about reflecting and responding. It will change their values and Improves the agreement between theory and practice (quoting Rumiani, p 38). Teacher research process, seeking to develop concepts and intellectual capacity to make theoretical interpretations of the data. Looking closely at teaching methods leads to develop common ideas and reliable methods (Lali, 1991). Teacher research Significantly affect teachers' learning experiences. Teacher researching makes possible Implementation and analysis of the teaching-learning process in a structured, systematic methodology for teacher. This defined structure by warning and more

systematizing, helps teachers to gather and analyze data and reflect on the results (Brown, 2002). A study done by the teacher researcher known as action research or research in action.

### **General hypothesis**

Research methods used by teachers have been effective in their teaching performance

### **Partial hypothesizes**

- 1- Research methods used by teachers have effective on increasing participation rate of students in learning process.
- 2- Research methods used by teachers have been effective in improving relations between them and students
- 3- Research methods used by teachers have been effective in recognizing disruptive problems of education and solve them
- 4- Research methods used by teachers has have effective in identifying appropriate methods of teaching
- 5- Research methods used by teachers have been effective in utilizing a variety of learning opportunities and numerous different tools and instruments in training process
- 6- Research methods used by teachers have been effective in improving relations between them and students' parents

### **Method:**

This study is descriptive- survey type. Target population, is all researchers' teacher of education department in provinces of Tehran, which their research has been chosen in evaluating organizations and subordinate offices. The number of teachers is 976 people that have been scattered in 27 districts of city of Tehran province. The used sampling method is multi-stage cluster sampling procedure. The sample size have selected equal to 275 individuals by using preliminary studies and considering probable accuracy, estimated variance, and confidence coefficient and based on Cochran formula. Data collection instrument in this research, is a researcher-made questionnaire which has six sections. In order to assessing basic components of study, according to this that each component contains a number of items, we use five degree Likert scale. Validity of questionnaire have been provided by citing esteemed faculty members' opinion. Reliability of questionnaire have obtained equal to 94% after test implementation among the sample of 30 individuals from the target population with Cronbach Alpha method and by using spss software. In conclusion we can say that questionnaire of this study have adequate validity and reliability. In order to analyze the data obtained from research, we use descriptive and inferential statistical indices in spss software. In level of descriptive statistics, frequency, percentage, mean and standard deviation were used in order to describe reality. In inferential statistics level, T-one sample is used. Assuming average for the population, is the average range of 3. In fact, T-test have specified that observed difference between two sample mean due to arisen chance factors or observed difference is represent real difference between the two communities.

## Research findings

In first hypothesis, participation of students in learning process is evaluated. For this purpose, items 1 to 7 of questionnaire has been allocated to this hypothesis. This hypothesis was confirmed by using one sample T-test with 274 degrees of freedom and a confidence level of 65%.

Table 1: one-sample T-test for hypothesis number one

Significance Level	Confidence level	df	T	Standard deviation	Experimental mean	Hypothetical mean	number	Variable
%000	%95	274	19/54	0/37	29/08	21	275	Participation of students In learning .process

According to results of Table 1, the experimental mean is obtained 29.08. As result, this hypothesis is confirm with difference mean of 8.08 due to hypothetical average. From the overall of questions findings related to this hypothesis it can be concluded that using research methods in these cases are effective in this order: Increasing students' sense of responsibility, encourage students to think, participation of students in variety of individual and group educational activities, participation of students in curriculum classroom activities, participation of students in academic performance evaluation, participation of students in analyzing curriculum's content, and participation of students in social critique and evaluation.

Examined variable in second hypothesis is the relationship between teacher and student which is measured by items 0 to 16 of the questionnaire. This hypothesis was confirmed by using one sample T-test with 274 degrees of freedom and confidence level of 65%.

Table 2: One-sample T-test for hypothesis 2

Significance Level	Confidence level	df	T	Standard deviation	Experimental mean	Hypothetical mean	number	Variable
%000	%95	274	25.60	/16	39.51	27	275	Relation between teacher and .students

Based on results in Table 2, average is obtained about 39.51. This hypothesis is confirmed with an average difference of 11.51 with respect to hypothetical mean. According to this hypothesis, the research methods used by teachers have been effective in improving relations between them and the students.

From the overall of questions' findings related to this hypothesis, means questions 0 to 16 of questionnaire, it can be concluded from available 6 variables that using research methods in these cases are effective in this order: utilizing students' opinion and encourage them to commenting, creating an atmosphere of mutual trust between students and teachers, increasing mutual respect's sense between students and teachers, teachers utilization to increase human communication between teachers and students, creating context in which students feel secure, talent identification in teachers, more attention to curiosity sense of student, independence and self-esteem of students, awareness of students' different learning styles, psychological, emotional and family backgrounds' recognition of students by teachers.

Variable evaluated in third hypothesis is recognizing disruptive problems of education and solve them which are measured by questions 17 to 22 of questionnaire. This hypothesis have been confirmed by using one sample T-test with 274 degrees and 95% level.

Table 3: One-sample T-test for hypothesis 3

Significance Level	Confidence level	df	T	Standard deviation	Experimental mean	Hypothetical mean	number	Variable
%000	%95	274	23	/16	27.79	21	275	Recognizing disruptive problems of education and solve them

Based on results in Table 3, average is obtained about 27.79. This hypothesis is confirm with average difference about 9.79. According to this hypothesis, the research methods used by teachers have been effective in recognizing disruptive problems of education and solve them.

From the overall of questions' findings related to this hypothesis, means questions 17 to 22 of questionnaire, it can be concluded from available 6 variables that using research methods in these cases are effective in this order: identifying physical factors affecting on increasing educational performance, such as poor lighting in classes, existence of educational tools and instruments, identifying the students' behavior disorders and their causes, utilizing other's research and experimental findings to solve educational problems, consultations with guiders and educational supervisors to resolve training problems and issues, identifying students who have physical problems and help them to identifying disruptive non-educational factors in education like factors such as dropouts' friends, lack of parents' motivation to continue students' studying. Examined variable in fourth hypothesis is identifying appropriate educational method and is measured by questions 23 to 26 of the questionnaire. This hypothesis have been confirmed by using one sample T-test with 274 degrees and 95% level.

Table 4: One-sample T-test for hypothesis number 4

Significance Level	Confidence level	df	T	Standard deviation	Experimental mean	Hypothetical mean	number	Variable
%000	%95	274	7.77	0.35	28.28	21	275	Identifying appropriate educational method

Based on results in Table 4, average is obtained about 27.79. As result, this hypothesis is confirm with average difference of 9.79. According to this hypothesis, the research methods used by teachers have been effective in Identifying appropriate educational method.

From the overall of questions' findings related to this hypothesis, means questions 23 to 29 of questionnaire, it can be concluded from available 7 variables that using research methods in these cases are effective in this order: Awareness factors of pattern types and teaching methods and manner to use them, using appropriate methods according to teaching and learning circumstances; familiarity with issues and new material in their discipline context; create new teaching topics' relationship with topics that have been taught; using methods that lead to understanding, creativity and innovation in students, integration of social and cultural issues with curriculum content, using cyberspace and IT in order to improve education.

Examined variable in fifth hypothesis is utilizing a variety of learning opportunities and numerous different tools and instruments in educational process which is measured by questions 30 to 38 of the questionnaire. This hypothesis have been confirmed by using one sample T-test with 275 degree of freedom and 95% confidence level.

Table 5: One-sample T-test for hypothesis number 5

Significance Level	Confidence level	df	T	Standard deviation	Experimental mean	Hypothetical mean	number	Variable
%000	%95	274	6.89	0.64	32.92	27	275	utilizing a variety of learning opportunities and numerous different tools and instruments in educational process

Based on results in Table 5, average is obtained about 32.92. As result, average difference is confirm about 9.79. According to this hypothesis, the research methods used by teachers have been effective in utilizing a variety of learning opportunities and numerous different tools and instruments in educational process.

From the overall of questions' findings related to this hypothesis, means questions 30 to 38 of questionnaire, it can be concluded from available 9 variables that using research methods in these cases are effective in this order: factors of using books, journals, articles and resources except the textbooks, teaching methods of problem solving, planning question, information gathering, hypothesizing and finding solutions, creating a context in which students can demonstrate behaviors consistent with their knowledge, using varied and numerous method, techniques and tools for academic performance evaluation, using extra-curricular activities, using spaces except for classrooms and school atmosphere in order to increase students' motivation, holding various field trips, using educational software such as: educational films related to course subject, use of educational hardware: such as all types of computer, video and more.

Variable evaluated in sixth hypothesis is relations among teachers and students' parents which are measured by questions 39 to 45 of questionnaire. This hypothesis have been confirmed by using one sample T-test with 274 degrees and 95% level.

Table 6: One-sample T-test for hypothesis number 6

Significance Level	Confidence level	df	T	Standard deviation	Experimental mean	Hypothetical mean	number	Variable
%000	%95	274	24.9	0.1	28	21	275	Relations among teachers and students' parents

Based on results in Table 6, average is obtained about 28. As result, this hypothesis is confirm with 7 average difference. According to this hypothesis, the research methods used by teachers have been effective in improving relations among teachers and students' parents.

From the overall of questions' findings related to this hypothesis, means questions 39 to 45 of questionnaire, it can be concluded that using research methods in these cases are effective in this order: Factors promoting the sense of consultation and exchanging ideas between teachers and parents, controlling and evaluating programs and students assignments in collaboration with parents, encouraging parents to provide a variety of resources and tools for students, participation of parents in different school subjects and issues, acquisition of common recognition (teachers and parents) of interest, desire, needs and students' talents, using different viewpoints and perspectives' of parents and encouraging them to provide their views and perspectives and participating parents in teaching and learning of students.

## Discussion and Conclusion

Regarding the obtained results of hypothesis test in this study it is specified that from the perspective of teachers with previous research experience, their used research methods have been effective in increasing participation rate of students in learning process, improving relations between teachers and students, recognizing disruptive problems of education and solve them, identify appropriate methods of teaching, utilizing a variety of learning opportunities and numerous different tools and instruments in learning process and improve relationships among students, teachers and parents.

According to confirmation of first hypothesis, it became clear that the research methods used by teachers have been effective on increasing participation rate of students in learning process. This effect in training process are as following: Increasing students' responsibilities sense, encouraging students to think, participation of students in various individuals and groups' educational activities, participation of students in classroom curriculum activities, participation of students in academic performance evaluation, participation of students in analyzing the content of the curriculum and participation of students in social critique and evaluation. Thus, this question's findings is consistent with research and results of Lee An (2006) and Adele (1989), but they are inconsistent with HAGHPARAST (1380) findings. Based on the findings of HAGHPARAST (1380) there isn't a significant relations between being inquiring of teacher and student participation in solving educational problems.

According to confirmation of second hypothesis, it became clear that the research methods used by teachers have been effective on improving relations between them and the students. This effect in improving relations between them and the students are as following: utilizing students' opinion and encourage them to commenting, creating an atmosphere of mutual trust between students and teachers, increasing mutual respect's sense between students and teachers, increasing human communication between teachers and students, creating context in which students feel secure, talent identification in teachers, more attention to curiosity sense of student, independence and self-esteem of students, awareness of students' different learning styles, psychological, emotional and family backgrounds' recognition of students by teachers. Thus, this question's findings is consistent with research results of Adele (1989), Lilly (1993), Brown (2002), Dixie (2002) and Lee An (2006), but they are inconsistent with HAGHPARAST (1380) findings. Based on the findings of HAGHPARAST (1380) there isn't a significant relations between being inquiring of teacher and improving relations between them and students.

According to confirmation of second hypothesis, it became clear that the research methods used by teachers have been effective in recognizing disruptive problems of education and solve them. This effect in recognizing disruptive problems of education and solve them are as following: identifying physical factors affecting on increasing educational performance, such as poor lighting in classes, existence of educational tools and instruments, identifying the students' behavior disorders and their causes, utilizing other's research and experimental findings to solve educational problems, consultations with guiders and educational supervisors to resolve training problems and issues, identifying students who have physical problems and help them to identifying disruptive non-educational factors in education like factors such as

dropouts' friends, lack of parents' motivation to continue students' studying. Thus, this question's findings is consistent with research results of HaghParast (1380), Adele (1989), Brown (2002).

According to confirmation of forth hypothesis, it became clear that the research methods used by teachers have been effective in identifying appropriate educational method. This effect in identifying appropriate educational method are as following: Awareness of pattern types and teaching methods and manner to use them, using appropriate methods according to teaching and learning circumstances; familiarity with issues and new material in their discipline context; create new teaching topics' relationship with topics that have been taught; using methods that lead to understanding, creativity and innovation in students, integration of social and cultural issues with curriculum content, using cyberspace and IT in order to improve education. Thus, this question's findings is consistent with research results of Karimi (1386), Boorely (1993), quotes from Rezaee Kamal Abadi (1384), Dixie (2002), Dixie and Duffi (2004) and Bardeen (2003) quotes from Rezaee Kamal Abadi (1384).

According to confirmation of fifth hypothesis, it became clear that the research methods used by teachers have been effective in utilizing a variety of learning opportunities and numerous different tools and instruments in educational process. This effect in utilizing a variety of learning opportunities and numerous different tools and instruments in educational process are as following: using books, journals, articles and resources except the textbooks, teaching from methods of problem solving (planning question, information gathering, hypothesizing and finding solutions), creating a context in which students can demonstrate behaviors consistent with their knowledge, using varied and numerous method, techniques and tools for academic performance evaluation, using extra-curricular activities, using spaces except for classrooms and school atmosphere in order to increase students' motivation, holding various field trips, using educational software such as: educational films related to course subject, using educational hardware: such as all types of computer, video and more. Thus, this question's findings is consistent with research results of HaghParast (1383), Laali (1991), Lilian (1993), Boorely (1993) quotes from Rezaee Kamal Abadi (1384), Brown (2002), Dixie and Duffi (2004) and Bardian (2003) quotes from Rezaee Kamal Abadi (1384) and Camp Bell (2004).

According to confirmation of sixth hypothesis, it became clear that the research methods used by teachers have been effective in improving relations between them and students' parents. This effect in improving relations between them and students' parents are as following: promoting the sense of consultation and exchanging ideas between teachers and parents, controlling and evaluating programs and students assignments in collaboration with parents, encouraging parents to provide a variety of resources and tools for students, participation of parents in different school subjects and issues, acquisition of common recognition (teachers and parents) of interest, desire, needs and students' talents, using different viewpoints and perspectives' of parents and encouraging them to provide their views and perspectives and participating parents in teaching and learning of students. Thus, this question's findings are consistent with research results of Laalian (1993).

Due to confirmation of all research hypothesis, it can be concluded that the research methods used by teachers are effective on quality of their teaching performance.

Therefore, teachers are considered as key element in education system that have a unique role in achieving the system's goals. Specialist, dynamic, motivated and interested teachers have important role in achieving educational goals. One of the method which can help to promoting this role playing, is increased involvement of teachers in whole educational process, and research is the tool that may contribute to even higher levels of decision-making. According to research findings, the use of following suggestions will be helpful:

- 1- Given to importance of students' participation in the learning process and emphasize on new theories of psychology - Learning and teaching on this subject, it is recommended that educational authorities create necessary mechanisms to conduct research by teachers, thereby providing necessary grounds to establishing great participation of students in education issue.
- 2- Given to role of establishing constructive relationship between student and teacher in teaching- learning process, it is recommended that requirements for such relationships would be provided. Thereby we can encourage other teachers to conducting research and using its results in context of constructive relationship with student.
- 3- Expansion of educational system interaction with society which is in progress has led to that, this system will face with new challenges every day. Teachers are comprises the main body of educational system, and on the other hand is only person who is grappling with issues and problems of classroom directly or momentarily. Therefore he/she could be very helpful in recognizing disruptive problems of education and resolve them. Therefore, it is recommended that by valuing teachers' research, their results will be use in order to resolve the problems of educational system and classroom. Using teachers' research results can be as incentives and motivations for other colleagues.
- 4- Given to that, research methods used by teachers are effective to identifying appropriate teaching method, it is recommended that required condition will provided to establishing a research culture of teacher in comprehensive and continuous program form to be more effective thorough educational methods.
- 5- It is recommended that by designing courses and workshops, research methods in applicable way will teach to teachers.
- 6- It is recommended that teachers with research experience be used for conducting workshops about manner of doing research and using its results in training process.
- 7- It is recommended that, necessary legal and administrative mechanisms will be design in order to families' participation in teachers' research.
- 8- It is recommended that a bank with reports of teachers' research findings will establish to provide utilization possibilities of these experiences for other colleagues.
- 9- According to that research methods used by teachers have been effective in utilizing a variety of learning opportunities and numerous different tools and instruments in educational process, it is recommended that the results of such studies of content service training courses for teachers will used.
- 10- It is recommended that by giving research journals and books about research methodology, necessary fields will be provided in order to creating scientific and research atmosphere at schools.

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