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Learning Analytics for Student Success: Future of Education in Digital Era

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Abstract
In the increasingly competitive and changing world, efficient education system that drives the human development in the country is the key to a nation's progress. The education providers – schools and higher learning institutions must focus on student success and design instruction that considers the individual differences of the learners. In recent years, learning analytics has emerged as a promising area of research that extracts useful information from educational databases to understand students' progress and performance. The term Learning Analytics is defined as the measurement, collection, analysis and reporting of information about learners and their contexts for the purposes of understanding and optimizing learning. As the amount of data collected from the teaching-learning process increases, potential benefits of learning analytics can be far reaching to all stakeholders in education including students, teachers, leaders and policy makers. Educators firmly believe that if properly leveraged, learning analytics can be an indispensable tool to narrow the achievement gap, increase student success and improve the quality of education in the digital era. A number of investigations have been conducted and reported the strategies, techniques, and approaches of learning analytics in the literature. This paper examines the recent attempts to conduct systematic and multidisciplinary research in learning analytics and present their findings. The paper also identifies privacy concerns and ethical issues and recommends further research and development in this area.

Keywords: Learning analytics; student performance; interaction; privacy; learning design

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Introduction

Ever since the digital revolution has begun, endless opportunities arise in creation and delivery of new knowledge contents in different level of educational enterprises. The communications between the learners and educators have been improved tremendously both in terms of speed and time. Learning Management Systems (LMSs) and social networking micro-blogs are commonly used in educational institutions to mediate the learning process. In these communication processes and transactions, huge amount of data have been crated as the digital traces or footprints of the providers and users. These data can be captured and analysed to observe their trends and patterns. The type and magnitude of data that generated from the interactions are so massive that often refers as Big Data (Reyes, 2015; Daniel, 2016).

The term Learning Analytics has emerged to describe the process in understanding the behaviours of learning process from the data gathered from the interactions between the learners and contents. The term can be defined as as the measurement, collection, analysis and reporting of information about learners and their contexts for the purposes of understanding and optimizing learning (Siemens, 2013). Another simple definition states "*learning analytics is about collecting traces that learners leave behind and using those traces to improve learning*" (European Commission, 2016). A number of authors have considered the importance and impact of learning analytics in the future of education (Pardo, 2014: Becker, 2013). In their view, Gašević and Pechenizkiy (2016) note that the field of learning analytics is the confluence of knowledge drawn from related disciplines such as educational psychology, learning sciences, machine learning, data mining and human-computer interaction (HCI). Brown (2011) traces the development of learning analytics and predicts that the concept will be adopted rapidly in the coming years, particularly when the analytical tools are becoming more practical and affordable.

Potentials of Learning Analytics

In recent years, the potentials of learning analytics have been discussed in the educational research community. Most educators agree that learning analytics can facilitate evaluation of the effectiveness of pedagogies and instructional practices. Some suggest that learning analytics has the potential to contribute the quality of teaching and learning by designing innovative and adaptive lessons to suit the individual students' cognitive abilities. The Learning Management Systems (LMSs) that combine content delivery, discussion forums, and quiz and assessment allow to monitor students' learning activities and from the analysis, instructor can detect the students at risk and undesirable behaviors. Once the issues are identified, the instructor can provide remedial solutions to support the students and help increase the level of achievement.

Hwang et al (2017) describe that learning analytics can assist in identifying the status of students' learning and problems they face in the learning process. They also note that instructors will have the comprehensive view of students' interaction with the course materials, peers and instructors. This information may contain raising questions, clarifying concepts, seeking advice, making observations and providing alternative views and so on. By analyzing these learning behaviors and the interactions with the content, it will be possible to design a personalized and adaptive

learning contents, practices and user interfaces to maximize the learning of individual students.

The learning analytics can be an indispensable tool for supporting informed decision making in course design and development. The information and analyses generated from the data can assist instructor to improve the course contents and instructional resources regularly. It is the responsibility of instructors to know the behaviors of their own students. By analyzing the source of data, the patterns can be established to understand the interactions between students, resources, and peers within the course. Providing timely feedback is a key feature in the learning process and important for both learners and instructors. The results from learning analytics can indicate when to provide feedback to specific learners.

Many studies have been reported the positive contributions of learning analytics. The encouraging results confirm that if properly used, learning analytics can help instructors to identify the learning gaps, implement intervention strategies, increase students' engagement and improve the learning outcomes (Merceron et al, 2015).

Applications of Learning Analytics

From the abstract and citation database of peer-reviewed literature, Wong (2017) identifies case studies that report empirical findings on the application of learning analytics in higher education. A total of 43 studies were selected for in-depth analysis to discover the objectives, approaches and major outcomes from the studies. The study classifies six aspects that learning analytics can support to improve the education process. These are (i) improving student retention, (ii) supporting informed decision making, (iii) increasing cost-effectiveness, (iv) understanding students' learning behavior, (v) arranging personalized assistance to students, and (vi) providing timely feedback and intervention. These aspects are not to consider in separate entity, but are inextricably linked.

(i) Improving student retention

In educational settings detecting early warning signs for students who are coping with their study can be an advantage for the instructors. The issues and problems that students are facing may varies from social and emotional issues to academic matters or other factors that may lead to giving-up from the study. Those students can be provided with remedial instructions to overcome some of the problems. For example, Star and Collette (2010) report that knowing the circumstance and understanding the causes, instructor can increase the interaction with the students to provide personal interventions. As a result the students showed better academic performance and significantly increase the retention rate. In a similar study Sclater et al (2016) describe that increase interactions with students promote sense of belonging to the learner community and learning motivations. It was found that in the process the students' attrition rate dropped from 18 to 12%.

(ii) Supporting informed decision making

The results from learning analytics can also be used to support informed decision making. A study by Toetenel and Rienties (2016) at the Open University in UK involves analyzing the learning designs of 157 courses taken by over 60,000 students and identify the common pedagogical patterns among the courses. The authors suggest that educators should take note of activity types and workload when designing a course and such information will be useful in decision making of specific learning design. However, the authors conclude that further studies are needed to find out whether particular learning design decisions result in better student outcomes.

(iii) Increasing cost-effectiveness

With the funding cut and raising expenditure, cost-effective has become the key indicator for sustainability in the education sector. One of the effective ways is to take advantage of the learning management systems that not only deliver the course materials, also keep track of the learners' activities. Instructors can analyze the activities and report the progress to the students and other stake holders in a cost-effective manner. As Sclater et al (2016) note, after conducting the analysis, notifications were automatically generated and send to students and their parents on students' performance.

(iv) Understanding students' learning behavior

To better understand the students' learning behavior, instructors can explore the data collected from the learning management systems and social media networks. Instructors can examine the relationships between students' utilization of resources, learning patterns and preferences and learning outcomes. This approach has been adopted by Gewerc et al (2014) when attempted to examine the collaboration and social networking in a subject for education degree course. The study analyzes the intensity and relevance of the student's contribution in the collaborative framework by using social network analysis and information extraction. The authors concluded that findings from the study help to understand more clearly how students behave during the course.

(v) Arranging personalized assistance to students

Given the advantages of data mining techniques and algorithms that are used in business and manufacturing industry, learning analytics has emerged as educational data mining of students and the courses they study. An investigation into the application of such technique in education domain was conducted by Karkhanis and Dumbre (2015) to discover the insightful information about the students and interaction with the course. They report that after analyzing the students' study results, demographics and social data, instructors are able to identify who need assistant most to provide individual counselling.

(vi) Providing timely feedback and intervention

Providing feedback to students is an important role of teachers in any educational settings. This process enable students to learn from their action and can have a

significant impact on motivation of the learners. The quality and timeliness of feedback are crucial in the learning process. From the learning analytics, teachers can identify students who are in need of assistance and provide appropriate intervention to the specific students. Dodge et al (2015) report that interventions through emails to the students work best and found that such approach impact on student achievement.

Similar to business forecast, ability to predict students' success can be a powerful practice in all levels of education. Daud et al (2017) highlight that there is such possibility to predict student performance with the use of advanced learning analytics. In their study, a wide ranging background and personal data that includes students' household family expenditure, family income, students' personal information such as gender, marital and employment status and the family assets, are collected. By using discriminative and generative classification models, the authors are able to predict whether a student will be able to complete the course.

Privacy Concerns in Learning Analytics

While learning analytics can delve into the students' interaction data with instructors and course materials, identifying and using their behaviors and personal preferences to predict their success may amount to breaching privacy and confidentiality. Such concerns have been raised by Lawson et al (2016) and describe that identification of at-risk students using analytics and providing them intervention strategies raise ethical dilemma for the educators. However, they contend that possible ways to resolve the issue is that the institutions could obtain consent from the students at different levels and increase the transparency of the process to avoid any missteps.

Given the importance of the ethical and legal considerations surrounding the use of data from learning analytics, educators find ways to overcome the issues while still providing feedback that will benefit them. Sclater (2016) draws attention to the Code of Practice for Learning Analytics developed by the Joint Information Systems Committee (Jisc). The Code covers the main issues that educational institutions need to address to progress ethically and legally in this area. The process results in a taxonomy of ethical, legal and logistical issues for learning analytics that are grouped into the distinct areas. These include ownership and control, consent, transparency, privacy, validity, access, action, adverse impact, and stewardship. Each area is identified whether it is an ethical, legal or logistical concerns and the person responsible to deal with it. With such clear guidelines and procedures, educators can comfortably proceed with the practice in learning analytics.

From the students' point of view, they are conservative in sharing data and expect learning analytics systems to include elaborate adaptive and personalized dashboards. This was found by Ifenthaler and Schumacher (2016) when the authors conduct a study with 330 university students. The authors suggest that learning analytics should be aligned with organizational principles and values and include all stakeholders in collecting and use of data. They further suggest that data should be analyzed transparently and free of bias for the benefits of all stakeholders.

Future of Learning Analytics

The educational community is witnessing a remarkable progress in theory development, research design and technical advancement in learning analytics over the past decade. With the increase capabilities in data mining techniques and power statistics, educators can exploit the information retrieved from the students' learning experience and transform into a model that can suggest remedial actions for the learners and predict the students' success. Several studies are reported to describe the future of learning analytics in improving teaching and learning. In this regards, Strang (2017) demonstrated that by using the student attributes and their online activities, key learning engagement factors can be identified and able to develop a General Linear Model to predict the students learning outcomes. His study involves 228 university students and students' engagement data was collected from the learning management system logs.

There has been much discussion about the advantages of personalized and adaptive instruction in education in the past. However, cost-effectiveness is a hindrance in implementing across educational institutions. With the use of technology and learning analytics, adaptive instruction may become a reality in the wider scale. Min et al (2017) made an attempt to use the data to understand the behavior patterns of the learner and design an adaptive instruction for a group of 128 pharmacy students in a university. The study involves a commercially available system that uses adaptive algorithm and semantic analytics engine to take various input data from the students and generates personalized learning paths based on students' performance. The authors suggest that in designing adaptive learning, students' non-cognitive factors such as motivation and goal orientation should also be considered. Mavroudi et al (2017) conducted a systematic review of twenty-one studies to better understand the nature of adaptive learning analytics with the research questions ranging from the context, objectives and when and where adaptive learning is applied and facilitated. They report that more insightful models of complex student behaviors can be developed to create constructive-collaborative environment in the future.

Conclusion

This paper describes the potential benefits of learning analytics research, application of learning analytics in different educational settings, privacy and legal concerns, and the future of the learning analytics research. Following Wong's (2017) analysis of case studies, six themes that use learning analytics are identified. Throughout the paper, the importance of data-informed approaches in education are suggested and the role of timely feedback and intervention for the learners are highlighted. With the application of artificial intelligence, algorithm and adaptive instruction, automated teaching and autonomous learning will become a reality in the near future.

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Literacy and Inclusion in Times of Change

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Abstract

Many students have complex learning needs, including learning disabilities or special educational needs. This paper presents findings from international research published in a recent academic book which brought together two fields, Literacy Education and Inclusive Education. Issues faced by teachers in a changing environment, and strategies to assist students develop literacy are discussed. Change factors of a civil rights agenda, social justice and special education queries, lead to changes in education laws, such that there is an expectation that the majority of children will be taught in regular classes alongside same age peers. However, well-intentioned or aspirational policies are difficult to enact on the ground in classrooms due to a range of reasons, including lack of resources, support, teacher transience, training or quality. As literacy is arguably the most important skill students learn at school, teaching literacy inclusively is paramount. Literacy itself has changed to be multimodal, integrating reading, writing, viewing and analysing. Current literacy teaching uses digital technologies and requires a learning environment that is collaborative and participatory. For literacy teaching to be inclusive, however, it must be targeted to address the differentiated needs of each student, not only by creating interest and motivation, and using language that is inclusive, but also providing specific, structured and sequential instruction in the sub-skills that underpin literacy development for those students.

Keywords: Literacy, Inclusion, Differentiated teaching, Educational changes, Literacy difficulties

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Introduction

The title of this paper indicates that we are in changing times. Some may claim that education is constantly evolving and changing, as educators and researchers seek to improve methods and increase student learning. Arguably, greater change has occurred in the last decade due to technology and higher expectations of teachers and for students. In this paper I explore what has changed and what we can do about it.

The two major areas of change that are considered are:
- the push for inclusion with same age peers
- increasingly complex literacy demands

Classrooms today contain a wider range of student ability than previously, including students with learning difficulties and disabilities. What it means to be literate has also changed, with the increasing pervasiveness of technology. These areas of change are reflected in two fields of study: Inclusive Education and Literacy Education. Research and scholarship that brings the two fields together is presented in the recent academic book *Inclusive Principles and Practices in Literacy Education* (Milton, 2017). In this paper I consider some of that discussion and ask: How can teachers bring the two streams together to benefit all students?

Inclusion

The education world has witnessed a change in perspective regarding the education of students with disabilities and difficulties. This has been evolving over many years due to a civil rights agenda, issues of social justice and the questioning of some special education research methods (Danforth & Jones, 2015). The impact of laws such as the 1975 Education for Handicapped Children Act, Public Law 94-142 (U.S.), the 1978 Warnock Report and the Education Act of 1981 (UK.), and the U.N. conventions on the *Rights of the Child* and a second convention on the *Rights of Disabled People*, led to laws related to racism, equality and educational provision for students with special needs, including those with physical, emotional and cognitive disabilities (Savage, 2015).

There have also been questions raised regarding the effectiveness of separate or special education for students with disabilities. These factors lead to changes in education laws. Nowadays, in many countries, there is an expectation that the majority of children will be taught in regular classes alongside same age peers. Education systems developed 'Inclusion' policies which devolve to the school level where regional, divisional, and or local policies are adopted. Often, however, well-intentioned or aspirational policies are difficult to enact on the ground due to a range of reasons, including lack of resources and support, and teacher transience, training or quality. A longitudinal study of inclusion in Ireland found that Principal leadership and support was a major factor in the success of inclusion in schools and classrooms (Shevlin & Rose 2017).

A form of inclusion that has been accepted as inclusive education was co-location of a special facility on the same grounds as a regular school. In such cases, there may have been some mixing of students on the playground, or during special events such as visiting performances and other incursions. While this minimal form of inclusion may

suit some students, many parents have pushed for greater inclusion. Scholars have also argued for the benefits of greater inclusion for both the students with special learning needs and regular students, indicating that the former learn more and become more socially adept, and that it can make regular students more tolerant and more accepting of difference (Danforth & Jones, 2015). An index of inclusion developed by Booth and Ainscow (2011) is widely used internationally to assist schools to gauge their inclusivity at all levels.

The definition of inclusion used in this paper is:

> 'Inclusive education is one that provides high quality, age-appropriate education either wholly or partially in a supportive regular class environment, in which each student's learning needs are recognized and can be met through acceptance, high expectation, differentiation and explicit, personalised learning' (Milton, 2017, p7).

In today's classrooms there are many students with a range of abilities, there is also a packed curriculum. It is no longer sufficient to teach the three 'R's. Teachers need to develop and embrace technology as it pervades virtually all subjects and there is both a school administration and parental expectation that students will have the benefit of the most up to date schooling. There are higher expectations on teachers to deliver and for every child to learn. However, many teachers lack specific training in how to teach students with learning difficulties/disabilities and how to differentiate lessons such that each child can progress at an acceptable rate.

Within my professional role as an independent school reviewer I visit many schools and classrooms and have been able to observe practices which have a positive impact on inclusion in classrooms. Some actions that teachers made to help with inclusive teaching were:

- Using teacher moderation, worked examples and teacher collaboration to decide what it means for students with special needs to progress across different levels of the curriculum.
- Working from assessments so that teaching is at the point of need and progress is monitored
- Having high expectations of all students
- Watching for inadvertent exclusion, especially cultural capital that can compound learning needs.
- Monitoring own teacher language: avoid idioms, colloquialisms, give one direction at a time, check understanding by asking task-related questions.

Those observations are in accord with ideas presented by several scholars (Danforth & Jones, 2015; Forlin, 2010; Savage, 2015)

Literacy

The understanding of what it means to be literate in today's society has changed. An old definition was 'the ability to read and write' sometimes adding − a simple sentence'. The definition used in this paper is that of the International Literacy Association:

"the ability to identify, understand, interpret, create, compute, and communicate using visual, audible, and digital materials across disciplines and in any context"

(International Literacy Association, 2015).

Literacy is arguably the most important skill students learn at school, and as indicated by the ILA definition above, literacy itself has changed to be multimodal, integrating reading, writing, viewing and analysing. A background ministerial paper from the Organisation for Economic, Co-operation and Development titled *Skills for a Digital World* stated "the pervasiveness of digital technologies in daily life is fundamentally changing the way individuals access and elaborate knowledge" (OECD 2106, p4) so we have to process complex information and think systematically. We can no longer think of reading and writing as separate entities, as in a digital world they form a symbiotic relationship, so becoming a literate person is now more complex than in the past.

Many students across the world struggle to become literate. A UNESCO global monitoring report (2014) conducted a survey of 41 countries which found that it took 4 years schooling to become literate and that 75% of children with less than 4 years school could not read a sentence. The report indicated that poverty, health, low parent education and poor teaching were important contributing factors. Having a learning disability is also an important determinant of reading difficulties. Once a student falls behind the rest of the class in reading and literacy, it becomes increasingly difficult to catch up due to Matthew effects. Taken from a passage in the bible, which states the 'rich get richer and the poor get poorer' and used to explain how good readers quickly outstrip poor readers because increases in reading ability increases vocabulary, general and specific content knowledge, text structure and grammatical knowledge (Stanovich, 1986).

Current literacy teaching, in many countries, uses digital technologies which has the potential to motivate and include all students as it often requires a learning environment that is collaborative and participatory. Teachers can use "technology as a deliverer of literacy", "technology as a medium for meaning making" and "technology as a site for interaction around texts" (Burnett, 2010, p. 254). We are only now beginning to understand how the changes in literacy due to technology is changing the way our brains deal with complex information. Walsh indicates that traditional reading practices are vastly different to reading online. She states:

"On screen reading incorporates multisensory activities such as searching, viewing, browsing, scrolling, hyperlinking and navigating, together with the clicking and scrolling of a mouse or touching and tapping activities…the online activity often includes images, sound, movement and gesture" (Walsh, 2017, p24).

Walsh further indicated that when we are discussing reading and writing in a digital context we can no longer consider them as separate skills, as they are intricately entwined. Oakley (2017, p161) suggests we consider reading and writing multimodal texts as two sides of a permeable membrane, such that each can flow through and

influence the other. While there are many digital programs aimed at assisting to develop the literacy skills of students with literacy difficulties, these are of variable quality, which some students may find boring and may be ineffective. Further, student use of the programs may not be monitored sufficiently well by teachers, so that the student does not gain the most benefit. Students who are developing literacy skills more slowly than their classmates need multiple opportunities to read and write the same words for them to become familiar and automatic. An examination of recent brain-based research into early literacy by Mclachlan, Nicholson, Fielding-Barnsley, Mercer & Ohri (2013) concluded that a number of children require more explicit and intensive instruction in early literacy than their classmates, and that the type of teaching and learning opportunities provided is a determining factor in literacy development. The Rose Report from the U.K. (2006) that analysed different methods of teaching phonics found that a synthetic approach, in which students are initially taught a limited number of letters and immediately taught to blend them into words that can be decoded and encoded in writing, was the most efficient way to teach the letter sound correspondences and decoding skills that are critical to reading. This system of teaching phonics has been adopted for teaching literacy in several English-speaking countries. While the initial research behind the adoption of synthetic phonics was conducted with regular class children, more recent research on using the method with disabled and disadvantaged children is emerging and one example will be discussed later. Children with literacy difficulties will generally progress more slowly and need more opportunities for practice at each level. The pre-requisites and subskills of literacy need to be taught explicitly to all, but within a wider literacy environment.

For effective inclusive literacy teaching teachers still need to be aware of four principles identified by Shanker and Ekwall (2003, p 4). These are: (1) that students require systematic sequential skill instruction to learn how to decode and pronounce words; (2) nearly all require some form of direct instruction of information in small increments in which the pace of learning and introduction of new material is carefully monitored; (3) the reading level needs to be right; and (4) students need time to practise reading. Further, the amount of time spent actually reading can be critical to developing reading skills. An examination of effective and less effective teachers of literacy found that while teachers spent similar amounts of time overall on literacy, in the classrooms of less effective teachers, students spent little time, sometimes as little as ten minutes of an hour's instruction, in reading. The rest of the time was spent undertaking activities related to the content. In the classrooms of effective literacy teachers, students spent at least half of the allotted time for literacy in reading (Shanker & Ekwall, 2003).

The implementation of numerous early intervention initiatives and programs have resulted in varying degrees of success. Reviews of policies and programs such as *Head Start* introduced in 1975 and the *No Child Left Behind* Act from 2001 in the United States of America; the *Literacy Hour* in Britain; *Close the Gap* initiatives in Australia; and the *Reading Recovery* program from New Zealand indicated that these either they have not achieved anticipated outcomes or have only experienced partial success (Milton, 2017). If some programs aimed at early intervention for vulnerable students have limited success, then the task of assisting those students improve their literacy usually falls to regular classroom teachers.

In order for teachers to cater for the whole class, literacy teaching to be inclusive, however, it must be targeted to address the differentiated needs of each student, not only by creating interest and motivation, and using language that is inclusive, but also providing specific, structured and sequential instruction in the sub-skills that underpin literacy development for those students who may still need it, even if the rest of the class has progressed beyond that point. Students with greater learning needs require more tuition in literacy, such that they take part in whole class literacy lessons, and during work station rotations and extra time they have activities and instruction in the basic skills. A National Early Literacy Panel report (NELP, 2009) indicated the following six variables are critical to developing literacy: phonological awareness, alphabet knowledge, rapid automatic naming (RAN) of letters or numbers, RAN of objects or colours, writing letters and phonological memory.

In today's classrooms, literacy and digital literacy are embedded across the curriculum and frequently students work in small groups with problem-based learning looking for real life solutions. Teachers often use an expanded Blooms taxonomy: Remembering, understanding, applying, analyzing, evaluating and creating (Frey, Fisher & Gonzalez, 2010) to develop student thinking and understanding at increasingly complex levels. This taxonomy can also be used to differentiate instruction so that all children can be successful. Teacher skills for differentiation are paramount. It is therefore necessary for teachers to self-monitor and to assess teacher effectiveness.

Research and Strategies

Teacher effectiveness is often noted as important in ensuring students are included and taught well. A number of studies have investigated the factors that have an impact on student learning outcomes. Hattie conducted a meta-analysis of that research to find out which factors, outside of student ability and home background, have the most impact. He indicated that schools account for 20% of student learning. The schooling factor to have most impact is teacher effectiveness. Hattie then developed a formula to determine the amount of impact on learning. He describes it as *visible learning*, and notes it is 0.4% per annum. (Hattie, 2015). In order to measure the magnitude of any effect, student learning is assessed at the beginning and end of the year. Hattie indicated that less than 0.4% increase in scores could be due to natural maturation, when scores are adjusted for age. In many education systems there is an increased emphasis on assessment and demonstrating improvements in learning for all cohorts of students (Milton, 2017). There is often a substantial difference between the learning outcomes of students in classes with effective teachers and those with less effective teachers. Variability between schools is 36 per cent, while the variance within schools is 64 per cent (OECD 2016). Teacher effectiveness is key to within-schools variability. One aspect of teacher effectiveness is the use of strategies that have been demonstrated through research to be successful with students with literacy difficulties.

With all types of strategies, even those which have been demonstrated to be effective through quality research, the effective implementation in schools can be less effective due to a range of reasons. Further research has shown that to be effective the strategies must have the Principal's support, there must be whole school commitment to the strategies and the teachers need to have thorough professional learning on the

use of the strategies and monitoring student outcomes to ascertain learning growth. For example, a study, in a disadvantaged secondary school, of the implementation of Reciprocal Teaching (a well-researched and effective strategy to improve comprehension) found that it was less effective than expected as many teachers were unsure about it and did not think it was worth the effort (Doveston & Lodge, 2017). While the strategy works as a method for providing inclusive comprehension practice, in this instance it was not taught effectively by all teachers. Other traditional methods used in teaching literacy have been shown to be effective and useful for including the whole class.

Working with traditional types of texts, Rasinski's research over a number of years has demonstrated the benefits of the use of poetry, songs and readers' theatre, as such activities require multiple readings and rehearsals for performance. Further, they provide all students with real purposes for reading and writing, and an audience for performance, even if it is only other group or class members. All students are able to take part at their own ability level and those with literacy difficulties get the extra practice that they need to progress. His research has demonstrated the use of such activities also develop rhyme and understanding of rimes which are necessary for phonological coding and recoding, prosody, fluency and comprehension (Rasinski & Young, 2017).

In a study in remote and regional schools in Western Australia, with high proportions of Aboriginal children, Maine & Konza (2017) found that 'explicit instruction in phonological awareness, alphabetic knowledge and blending leads to improved early-reading skills for all children' (p191). They indicated that in order to be inclusive teachers had to ensure the success of all students and in early reading this meant explicit instruction in the components of reading, alongside a more general literacy and learning area curriculum.

Research into creative ways to use technology and digital programs to develop literacy alongside other curriculum was conducted with elementary school children who had poor reading fluency and comprehension. The research entailed students working in pairs or small groups to create their own multimodal texts using mobile devices, augmented reality and the World Wide Web. Students were engaged, supported and included. In order to create the multimodal text, complex digital literacy practices were developed as they read, wrote their own texts, drew or selected images to accompany the text, and recorded themselves reading the text multiple times until it sounded fluent. They incorporated many of the skills and processes needed for reading and writing traditional print-based texts; such as word identification, understanding grammar, comprehension, spelling, sentence and paragraph writing, as well as understandings about how texts can be structured for different purposes and audiences. The findings indicated that creation of such texts can assist learners attain reading comprehension, fluency and motivation (Oakley 2017, p160).

Conclusion

In regular classes today, there is more to do and more to learn, with expanded curricula, technology embedded across the curriculum, and hence more complex literacy demands in every subject. At the same time there has been a push for

inclusive education so that most students are educated in regular classes alongside their same-age peers, which has meant that there is a greater student ability/knowledge range in each class. There has been a concomitant demand for higher quality teaching, with a focus on assessment, teaching from assessments and demonstrating that all students have made appropriate progress.

This paper presented those issues and some research-based strategies that teachers may use in order to assist all students in their classes develop literacy skills to enable them to take an active part in the learning journeys in their classrooms and to develop the literacy skills needed for modern society.

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Exploring the Educational Potential of Social Networking Environments for Indigenous K-12 Students in New Zealand

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Abstract

The research focused on the factors that promoted e-learning engagement in online social networking sites (SNS) for a small sample of indigenous Māori students (Y9-11) in the rural Northland area of New Zealand. The PhD study helps address a lack of data on how indigenous students, in particular, engaged with e-learning through a series of secure educational social networks (ESN), and how they functioned as a community of online learners operating both inside and outside of their classrooms demonstrating increased bonding and bridging social capital, and incorporating peer group learning relationships. The methodology and process followed a problem-based methodology investigating challenges to practice with a view to changing it within a participatory research framework, to enable teachers to work with a researcher. The use of indigenous pedagogies was an underlying theme in this study to recognise the importance of decolonising discourse in the use of terminology, the process of organising research, and utilising a code of conduct to benefit indigenous people for all research. Students were able to manipulate their online identity by forming their own student led, self-directed learning program that was represented as a "crossover learning framework". Students sometimes chose self-instruction in e-learning, over face to face teacher instruction, as observed in classroom "dual learning pathways" adaptations. The research also identified some of the challenges between SNS and ESN, when developing an understanding of public versus private boundaries.

Keywords: Educational Social Networks; social networks; cross-over learning; flipped classrooms

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Introduction

Over the course of the last decade New Zealand schools have increasingly embraced the digital age. A report prepared for the Ministry of Education in New Zealand (Tiakiwai & Tiakiwai, 2010) noted that there is a dearth of research addressing this area, and a general lack of data on how indigenous Māori students, in particular, engage with e-learning. While there is a large amount of interest in social networking sites (SNS) from many students, there are few indicators in the current research that support understanding of the extent of the use of social networking tools by Māori students in New Zealand schools.

This PhD research (Dashper, 2017) investigated the relationships between e-learning in social networking, and engagement for students in a rural Māori school environment. The study sought to identify how Māori pedagogies and values might be able to be expressed in an e-learning environment, and how this relationship between Māori pedagogies within an e-learning environment may further contribute to engagement with learning in schools.

An Educational Social Network (ESN) was defined as an online community of people, communicating about a common educational theme within a closed social network (such as Facebook). It is a group that is secure and therefore safe for members to discuss topics and not have the conversations available to people outside of the group. It may be time limited (i.e., set up to run for a specified time only) and may have a variety of identifying factors for membership (e.g., within a school it may be a class group, have geographical connections, be topic based or include specific age groups in a cohort).

However, ESN activities in online learning may potentially represent a different environment for identifying student engagement (OECD, 2009). Facilitation of learning may involve changing roles in the educational use of social media (Mason & Rennie, 2008). This project investigated the perceived importance of Māori pedagogies and values to student engagement as measured by their responses and actions. It has also explored the possible links between e-learning and engagement for Māori students, as evidenced by current use in the classroom.

Frameworks were developed to identify characteristics of e-learning practice (illustrating the differences between SNS and ESN usage) for a small group of Northland Māori students in the study. These were used to describe who these learners are, position them as users of technology and identify possible organisational structures or trends in behaviour in the rural Northland area (Stevens et al, 2007).

Methodology

Student questionnaires and teacher interviews, combined with the researcher's experience, were used to identify areas where pedagogies and values might be best incorporated into an ESN (Educational Social Network) to further engage students (JISC, 2009). Research then tested this expression in a particular e-learning context through curriculum-focused ESN interventions. These interventions were collaboratively designed by the researcher and teachers in a focus group environment, and then applied in the case study schools. The ESN environments were constructed

to supplement classroom teaching and learning based on curriculum directions (Boettcher, 2007). Activities and discussions were focused on the students' needs, their prior knowledge and their social capital.

By focusing more on the social capital in e-learning than on cultural capital, the research explored the depth of relationship created by social capital. The research identified the conditions that enable educational social networking community connections to be established between participants and others outside of the immediate community. It pointed to the reciprocal exchange of information and the implicit trust these exchanges are based on within e-learning.

This study utilised a participatory research framework (learning with others to effect change) to enable teachers to work with a researcher. Two tools were collaboratively employed in participating schools to help with analysis:

1. Productive Pedagogies (State of Queensland, 2002a, 2002b) were used in this research as a tool to measure engagement and as a theoretical lens to be used to look at practice. They were initially designed as a balanced theoretical framework enabling teachers to reflect critically on their work.
2. The Ladder of Inference (Argyris 1985) was utilized to help teachers to recognise the claims they make that they believe to be true and expect others to accept (Ministry of Education, 2008). The ladder was used in all teacher interviews and as a framework for focus group meetings.

The Intervention: Educational Social Network

For this research in a school environment, the ESN were based on educational topics within a learning area focus and were specific to an invited group of participants. The ESN were designed with the teachers to fit the programmes of study in their participating classes and follow the learning area curriculum. They were designed to be supporting material for classroom topics, curriculum discussion opportunities outside of class, resource distribution and integration of e-learning opportunities into the classroom teaching and learning practice.

The ESN interventions involved different cohort levels, as well as a variety of learning areas. The different ESN tasks were developed by the classroom teachers in the focus groups, over a three-week period, then trialled in their classrooms over the following six to eight weeks. Ongoing data were collected, and continued to inform the research over the following two months of analysis of results. As data were collected, they were discussed and evaluated in the teacher focus groups.

Surveys showed that there was already a large amount of positive student motivation towards e-learning integration into classroom practice. Because of the structure of the ESN, designed to be integrated into existing units of work, the perceived relevancy of the task for students and teachers was high. The collection of data was seen as part of the learning process rather than as an added extra task for teachers, or reliance on self-reported data from students.

Input into the ESN design process was initiated with collaborative work from the focus groups in the three-week design period. Once the ESN became available in the

classroom, students could contribute either in class or out of school time dependent on access. The ESNs were designed to exist for a limited time and have data collected over a six-to-eight-week period. Student engagement was then measured in classroom activity (via the observation tool), ESN contribution (via site analysis) and student/teacher voice (via questionnaires, interviews and focus groups).

The need for decolonising discourse in research with indigenous peoples

In the course of this research, as a non-indigenous researcher working in an indigenous field of knowledge, there is a need to recognise the importance of decolonising discourse in the use of terminology, the process of organising research, and utilising a code of conduct to benefit indigenous people for all research. This project incorporated Kaupapa Māori (Māori code of conduct) practices (Smith, 1999) as underlying rules for all work undertaken:

1. Aroha ki te tangata (a respect for people)
2. Kanohi kitea (present yourself to people face to face)
3. Titoro, whakarongo . . . kōrero (look, listen . . . speak)
4. Manaaki ki te tangata (share and host people, be generous)
5. Kia tupato (be cautious)
6. Kaua e takahia te mana o te tangata (do not trample over the prestige of people)
7. Kaua e mahaki (don't flaunt your knowledge) (p. 120)

The shift of research practices from 'colonising methodology' towards indigenous research principles and methods has had a useful part to play in this research. Acknowledgement of the influences of colonising practices, allows reassessment of the usefulness of some tools and the indigenous perception of their value in working with Māori communities.

As a non-indigenous researcher working in an indigenous field of knowledge, I made every effort to recognise the importance of decolonising discourse in research methods and methodology. This involved applying kaupapa Māori to ensure the benefit for indigenous people in all stages of the research, empowering and building capacity by involving Māori in the organisation, management and conduct of the project, and working towards the Ministry of Education's Māori educational strategies (Ministry of Education, 2012), to enable Māori to enjoy educational success as Māori.

Discussion

The relationship between school and home e-learning was represented as an Existing Online Learning Framework for managing their educational programme (see Figure 1). This illustrates that there was an inability for students to share immediate ideas or access synchronous help (teacher or peer) when they were involved in schoolwork from home. Developing and constructing their learning environment was controlled from school and there was very little opportunity for relative autonomy or self-determination.
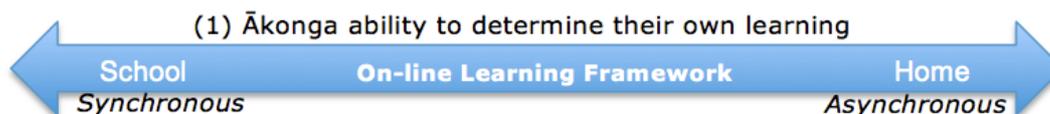
Figure 1: Existing Online Learning Framework

In contrast to this, another framework was created to describe the Existing SNS Communication Framework (see Figure 2). This represented students commenting about their social life in an online environment and was the complete reversal of the existing online learning framework. In this framework, students were able to easily create synchronous conversations and develop their autonomous identity and relationships within an environment of ownership of the process. Because SNSs were not officially allowed at their schools, student school-time communications in this online framework were only able to be asynchronous.
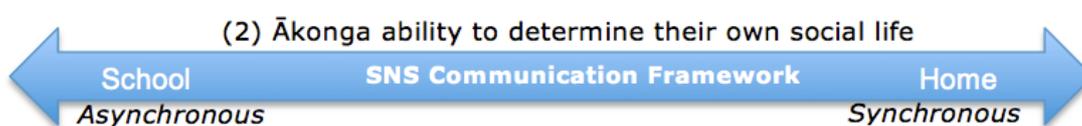
Figure 2: Existing SNS Communication Framework

These results indicated that a third potential framework might be emerging from the student feedback received that could differentiate the ESN communications framework into participatory action on one side and observations on the other (see Figure 3). Student educational needs would determine here which direction to take for them to determine their own learning.
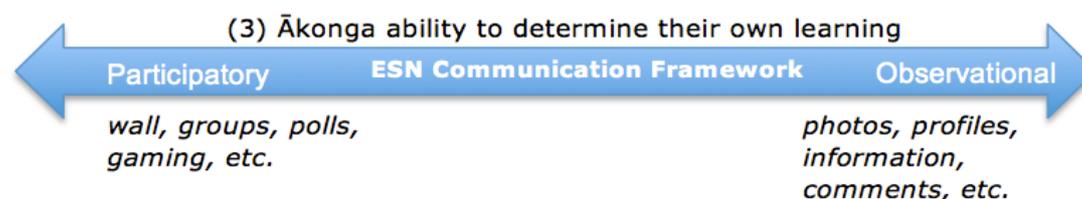
Figure 3: Potential ESN Communication Framework

Management

One of the teachers mentioned how he would like to create a system similar to a flipped classroom framework that linked in with his already successful email resource distribution system:

> *I'd like to use pre-prepping the kids as a strategy for my lessons, by sending them material, and maybe video-cam part of my lesson, so they could upskill themselves the night before. Then I can identify in class those who understand the work and they can carry on digitally, while those that don't—I can work with them in class. (Teacher 1, School 2)*

The ESN membership groups correlated to the class rolls in the school. Once students were members of the ESN, they could invite some of their existing SNS friends who could also choose to join if eligible. In an ESN, students were part of a wider class

group—some might not be friends and others they would not normally communicate with in an SNS environment. The privacy restrictions in place meant that students were not usually able to view other students' SNS pages or profiles (subject to their individual privacy settings) unless they were existing 'friends'. As a result, some students might not have SNS friends in the ESN group and would require a teacher invitation.

A total of 44 students were members of the ESNs constructed over the course of the research. Some of the students (27) were members of two different ESNs, and a small number of students (9) were members of three groups. The learning areas represented in the ESN were science (as science, geology, chemistry and biology), mathematics and statistics (as numeracy and mathematics), technology (design and visual communication), and PE.

Material was posted by teachers onto the ESN for discussion and for students to access resources developed to support class topics or themes. This included the following:

1. resources prepared by the teacher within a learning area;
2. still images or video material supporting classwork, selected by the teacher;
3. review questions for students, based on classwork focus areas;
4. assessment support material for study;
5. motivational material and statements to support student learning.

Summative data in the main engagement period (three months) was collected on a spreadsheet as follows:

1. Membership of each ESN was collected as students applied and were accepted into each group.
2. Students were given an individual ākonga (student or learner) number that could be tracked against the different ESNs on spreadsheet tabs.
3. Each posting was read for content, date and time created, and totals recorded for each ESN.
4. Student postings were recorded separately against individual ākonga numbers, detailing the time the comments were made.
5. Views of each posting were recorded against individual ākonga numbers, accessible in the order that each post was viewed by students (first viewer, second viewer, etc.).
6. 'Likes' for each posting were collected and recorded against individual ākonga numbers.
7. Comments for each posting were collected and recorded against individual ākonga numbers, detailing the time the comments were made.
8. Responses in the ESN environment were differentiated into age groups within learning areas and charted into graphs to show levels of responses.

In addition to this, formative data were collected and sorted into the following groups:

1. Screengrabs were taken of representative examples of student–teacher ESN interaction and engagement.
2. Comments were sorted into groups based on ascribed levels of depth.

3. Examples were collected around the language levels of responses.
4. Examples were collected of positive relationship building in the ESN environment, between teachers, students, other adults and the community.
5. Examples of non-respectful relationships were collected to illustrate any swearing, put-downs, reluctance to participate or name-calling.

When responding to posts or asking questions in an ESN, students did not appear to show any reluctance in commenting on their perceived progress. Student typical postings were mostly by way of a clarifying question such as that shown in Figure 4.

Figure 4: Student question, teacher response, student reply

Bridging Social Capital Observed in ESN

The concepts of 'bridging social capital', or access to newly created information through a wider range of contacts, and 'bonding social capital', or the emotional support students receive from close friends (Ahn, 2012; Burke, Kraut, & Marlow, 2011; Ellison et al., 2007; Ellison, Steinfield, & Lampe, 2011; Steinfield et al., 2008), may also reflect a supportive and caring teaching and learning setting if it occurs in the ESN. Features of both bridging and bonding social capital were observed to be occurring over all of the ESN in the initial engagement period, when students responded to questions in the online environment and supported each other with study and problem-solving experiences.

The example in Figure 5 illustrates two Year 9 students taking responsibility for their own learning and initiating a new topic in an e-learning environment based on high-interest material.
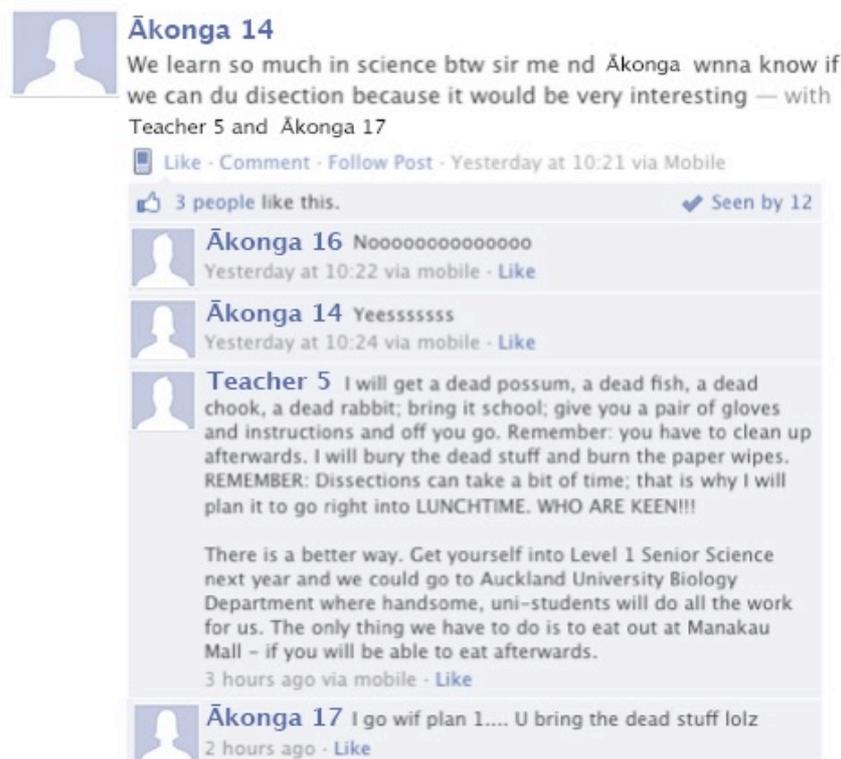
Figure 5: Student engagement and topic initiation

A further example, in Figure 6, illustrates students publicly commenting using an ESN during class time, detailing their perception of progress in their learning process. We see a significantly shorter time differential, in a situation in which students were initially conversing synchronously via the ESN within class time. While they were studying, the teacher has responded asynchronously, addressing the group teaching and learning environment. In this ESN conversation, unlike a classroom situation where oral evidence is often not captured, the ESN afforded step-by-step evidence of student engagement or any disengagement as they articulated their understanding through their comments.

Figure 6: Classroom synchronous ESN Crossover

Analysis of the online behaviours showed that students went back and forth in a number of stages, which I have called the Observed Developmental Stages of ESN (see Table 1). Student responses ranged from 1 – 5:

1. joining the group
2. viewed a post
3. liked a post
4. posted a comment to something existing
5. created their own post in three levels

Relating these Developmental Stages with other research that measures the levels of student engagement, allows us to compare how the proposed developmental stages fit within similar observation tools across e-learning (Richardson 2008), (State of Queensland, 2002b).

This reflected elements of Māori pedagogy, where the traditional teaching relationship of tuakana–teina has been observed to be a complementary relationship (Pihama et al., 2004) allowing students to develop from a teina (less experienced learner) identity into a leadership role and to potentially assume a tuakana (more experienced teaching role) identity.

Table 1: Observed Developmental Stages of ESN

Stage: Developmental Stages of ESN Student Response	Level of e-Learning: observable teacher participation in a learning environment	Level of student engagement	Changing roles for ākonga
1 — ESN group membership but no viewing or response.	• No observation	No student direction.	TEINA
2 — No response apart from data registration that the student has viewed the post.	• No observation	No student direction. All activities for the period explicitly designated by the teacher for students.	
3 — Student uses 'Like' function in a minimal response action.	• Teachers functioning as online experts	Teacher makes initial selection of activity, but student exercises some response.	
4 — Student posts a comment, question, or a reply of some sort, under the teacher initiated posting.	• Synchronous or asynchronous online conversations about content	Teacher makes initial selection of activity, but student exercise some control through a choice of alternative activities.	
5a — Student initiates their own post with a comment in response to a teacher initiative.	• The practice of intelligently and appropriately sharing work with global audiences.	Some deliberation between teacher and student over the activity for the period. Student exercises some control through a choice of alternative activities.	
5b — Student posts a topic question based on their own inquiry within a learning area, asking their teacher's opinion.	• Co-operating and collaborating with others outside the classroom around their shared passions	Some deliberation/negotiation between the teacher and students over the activity for the period, including the range of options and procedures.	
5c — Student independently posts their own in-depth topic investigation, based on their own inquiry, possibly asking their teacher's opinion.	• Engaging in the hard work of shared responsibility and outcomes • Involved in real work for real purposes for real audiences online	Students determine their activity, its appropriateness and context. This may be either independent of, or dependent on, teacher regulation.	TUAKANA

(adapted from Richardson, 2008)

(adapted 'Productive Pedagogies : student direction')

Conclusions

The following findings show the 10 main factors of research that were seen to help promote engagement for student learning in this ESN environment, and how students have adapted their identities to fit an e-learning environment.

1) Understanding Public versus Private

Students initially used an ESN in much the same way as their existing SNS, and gradually came to understand the different operating structures and the identity shifts required. Observation of initial ESN usage showed a potential confusion between their understanding of public and private domains. Students overstepping boundaries in an ESN suggested a confusion over differentiating their relationships between public relationships in their SNS and private relationships in a closed ESN group as they switched between the two networks. As the ESN progressed, students began to either support or conduct their own moderation to maintain a respectful relationship among their peers and show respect for their teacher.

2) Bridging and Bonding Social Capital

Features of both bridging and bonding social capital were observed in the ESNs when students responded to questions in the online environment and supported each other with study and problem-solving experiences. Students working with information and topics in an online ESN environment had access to the capacity of Internet searches and were able to research in their own time out of the classroom. This allowed them to search, cut and paste in a way that classroom time and capacity constraints may not have allowed.

While the SNS bonding social capital relationship lay within family and friendship ties and connections, in the ESN environment this support was observed to work between student and student, and between student and teacher.

3) Flipped Classroom

Students were able to successfully use the ESN as a flipped classroom framework to support classroom teaching and learning focus areas. By overlapping their ESN access between home and school, some students were seen by teachers to increase their independent work at home. The ESN use in class allowed students not requiring individual attention to work quietly in the online environment on their individual learning programmes. In class, they were allowed to review material, work on current topics or investigate new directions in their learning area through the ESN material.

Figure 7: Levels of cognitive work in a flipped classroom

Using the ESN out of class time, and in a flipped classroom capacity, involved distinct differences in delivery and levels of cognitive work. This allowed students to participate in the lower levels of cognitive work (gaining knowledge and comprehension) outside of class, enabling them to be focused by their teacher on the higher forms of cognitive work (application, analysis, synthesis and/or evaluation) in class, where they had the support of their peers and instructor (Anderson et al., 2001; Brame, 2013).

They were also able to interact with each other synchronously, or their teacher asynchronously, while accessing the virtual teaching resources as needed. For the teacher, this represented multiple teaching opportunities not previously available and a new focus for digital activity.
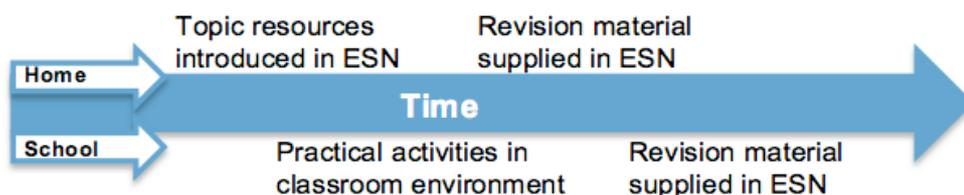
Figure 8: Flipped classroom framework operating in ESN

Online resources were introduced around topics to be covered in class, to offer students material of an interactive nature, potentially high-interest images and resources available both on demand and by replaying. This allowed the ESN to function as an independent e-learning tool to support student learning (Figure 8). Teachers were then free to provide practical application and assistance for their students in class time, supporting the knowledge comprehension gained from home-based viewing. This represented a significant change from non-interactive paper or textbook-based homework exercises that students may have previously completed.

4) Crossover Learning Framework

Students engaged with an ESN 'crossover' learning framework, in order that their ESN might be used during school time as well as accessed from home. In a number of the ESNs, students were allowed to access the online resources and make appropriate asynchronous postings or raise questions during school time. This independent learning utilised the student capacity for choosing self-instruction in an e-learning environment over face to face teacher instruction in the same class. A framework (Figure 9) was developed to illustrate this.

Figure 9: Crossover ESN Framework

As the crossover ESN framework developed in the research, students were able to utilise asynchronous or synchronous communications with their teacher or other ākonga from home.

While the content of material submitted to the ESN was observed to be usually based on related classroom topics or information, students directed the learning to a large extent by their postings and queries. Self-directed learning questions were often answered as a student-initiated post or inside a teacher posting. Their individual inquiry learning processes were available for everyone else in the group to share. This feature made the crossover framework a popular strategy that supported an autonomous operating structure for students.

Students were seen to communicate how they were doing with formative comments both directed to the teacher and identifying with the ESN group. Students in a peer help relationship were able to help each other when required, and these structures were seen to be an effective teaching and learning tool that was easily communicated and organised through the ESN with a crossover framework.

5) Dual Learning Pathways

Students were given the choice to pursue an ESN dual learning pathway in class. This could encompass a crossover framework involving synchronous conversations with other students in the ESN or asynchronous communication with their teacher asking questions or viewing of resource material. Alternatively, they could participate in the normal lesson without e-learning (face-to-face and offline teaching). They could also do both and switch between the two pathways according to their needs. A framework was developed (Figure 10) to show this.

Figure 10: ESN dual learning framework

The teacher in this framework, by necessity, could only participate in two of these processes (face to face or asynchronous ESN). The value added by the ESN allowed an extra element to be included in the teaching and learning process. This was able to operate at school or at home. When it was used in the school environment, it incorporated the crossover learning framework.

Students were observed to access learning materials in the ESN to suit their needs. This included revision material, project content, resources, questioning the teacher, learning community help and focus questions in a forum. Because both the teacher and the ESN were available on demand in a classroom situation, the students were able to determine their own pace and content, and self-review. The dual learning pathway could not operate outside of the classroom, however, because of the absence of the face-to-face teacher.

There were clear indications that students were taking responsibility for their own learning in self-directed learning (Brake, 2008; Chandra & Lloyd, 2008), where teachers are facilitators of change (Harlow et al., 2008).

6) Comparative Practice

Some aspects of ESN teaching practice observed in this study can be compared to pedagogy used in an activator practice (Hattie, 2007, 2010) and discursive practice (Bishop, 2011; Bishop & Berryman, 2009; Bishop et al., 2007). In the learning environment of the classroom, there are similarities across activator and discursive practices relevant to ESN design. In an active and guided instruction environment, where learners are given clear requirements by their teacher (activator practice), there is also a necessity for the boundaries, rules and organisation that are fundamental to effective learning (discursive practice).

The implications for an ESN environment where all instructions are text based in a secure teacher-moderated environment, show that rules may be inherited both from the classroom and from SNS as a form of bonding social capital. Within ESN design, students were seen to be monitoring their own learning progress, from making frequent comments on how well they had understood resource material to requesting help with comprehending the classwork.

In the same way as an activator practice constantly supplies learners with feedback, or like a discursive practice, where students monitor their own progress, ESN design may combine a high degree of feedback and feed forward to online content. The importance of reflection and feedback to students was identified in an activator practice, and when this occurred in ESN design, there were three levels of evidence of supportive feedback in teachers' communications. Level 1 was acknowledgement by the teacher. A second level was specifically responding to a question from a student. A third level was addressed to selected students in a formative feedback response to material the student had posted.

7) Manipulating Online Identities

Students were able to manipulate their online SNS identity to fit into an ESN learning environment. There were some distinct transitions in identity and roles of students and teacher that were observable within the ESN environment, and students were able to build on their existing identity and adapt elements of their prior experience to fit both an online environment and an educational community. Their previous experience in SNS enabled them to transition seamlessly into the ESN with some modifications of their understanding of roles and taking on the classroom rules that did not exist in their SNS.

The dual learning pathways enabled students to process their questions in a text-based environment, cached and available as a resource. Unlike the classroom, where the teacher and student had either semi-private or public synchronous vocal and text-based communication, in the ESN all the online community viewed everything as synchronous and asynchronous text-based cached responses. This created a transparent public environment that functioned both as a resource and as an educational communication tool.

8) Perception of ESN Use versus Actual Use

Student perception of their ESN usage was compared to measurements detailing their actual ESN usage. The results showed that the ESN groups had full class membership despite being optional. A comparison between students' perception of looking at a social network and their actual recorded views of the postings, showed an increase in actual use. This represents some evidence of initial engagement. Student perception of their capacity to 'like' a posting was compared with actual student ESN observations of the use of 'like', and the results showed either a reversed or an inflated perception of their use of this function.

When student perception of posting comments were compared with actual student ESN observations, the perception was generally more than or the reverse of the actual numbers of students commenting. Similarly, students' perceptions of having initiated their own post (as a response, query or investigation) were also generally inaccurate. Almost half thought they responded often or a lot in their own posts, whereas in the ESN observation, a range between 67% to 93% of students did not initiate their own post. In itself, this does not necessarily represent a lack of engagement, but rather inaccurate perception.

These results may potentially be due to students' eagerness to be involved in a new initiative or their confusion, identified in the early stages of observation, between their normal SNS activity and the newer ESN identity. Inflated perception of their participation may show how much students see the potential of this form of e-learning, equating to anticipated rather than actual perception.

9) Use of the indigenous language te reo Māori

Students in this study exhibited only a small amount of usage of the indigenous language te reo Māori in an ESN environment, corresponding to another older Māori students SNS study (O'Carroll, 2013a). Vocabulary from te reo Māori was observed in very few of the responses as the language of communication in ESN. The majority of the language of communication observed was in English. A large group of students reported that using te reo Māori did not work as well as expected in the ESN groups. This may reflect a transition time required for te reo Māori to gain SNS acceptance in the Māori world, or students simply may not have felt comfortable using te reo Māori in an ESN environment. The actual reasons could not be determined in this study and need further research.

The use of te reo Māori was supported by teachers in the initial design and reflected school planning, where the use of the Māori language was actively encouraged in class communication. That the language of communication observed in this ESN research was predominantly English may or may not reflect the actual classroom language or language spoken at home, and further comparative study of this is required. While this is disappointing in itself, it is reiterated in other studies of Māori student use of te reo Māori in SNS (O'Carroll, 2013a, 2013b).

10) Whakamā (shyness or embarrassment)

Student acceptance of ESN postings and conversations being always publicly available to the whole group may lead to a different interpretation of whakamā in an ESN. The digital student identity existing in the online environment, may not be subject to the same pressures or restrictions that the student has in their normal class.

In the ESN, students were seen to be easily able to ask text-based questions of their teacher in front of the whole ESN community (for example, explanations of simple terms not understood or difficulty understanding instructions). Students were equally forward in expressing difficulty or in revealing complete understanding of a topic or task (for example, asking for extra help, voicing confusion or communicating their engagement and comprehension). In an ESN environment, unlike the immediacy of a classroom verbal or written positive comment, individual text-based praise was able to be seen by all members of the group and cached to be observable for as long as the ESN lasted.

Teachers commented on the use of ESN as related to reduced student whakamā, and a differentiation was noted in the relationship between teacher and students in the online environment compared with the face-to-face school environment. Teachers also commented on the perceived reduction of whakamā in face-to-face classroom time when continuing from ESN interaction. One acknowledged that her students were noticeably different after experiencing the ESN, and were more vocal and responsive.

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Understanding Visible Learning Through a Brain Targeted Teaching Framework

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Abstract

The teaching learning process is not a place for guesswork. That assumption lies at the core of John Hattie's body of research, *Visible Learning*, and has informed educational settings based on empirical evidence since it became known. To make what works best in Education understood and effectively incorporated in instructional practices, there needs to be a framework where emotional, physical and cognitive processes involved in teaching and learning are taken into account. This is the realm of Mind, Brain and Education science and bringing both to enhance and contribute to the development of teachers' continued praxis is the ultimate goal of this paper (presentation).

Keywords: learning, teaching, visible

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Introduction

This presentation was prepared to be delivered in a F2F session which should ideally last 4 hours. The topic is *Visible Learning*, term coined by Prof. John Hattie upon studying hundreds of metanalyses to search for the answer to an apparently simple question *"What works best in Education?"*. More than a decade later and now counting with a team of experts who are constantly processing information generated from a bank of over 1,400 meta-analyses on the topic, Prof. Hattie has made quite an impression worldwide by taking the guesswork out of Education.

After analyzing an initial body of 800 plus meta-analyses, the first book on what would become a series about *Visible Learning*, concentrated on influences that had an effect size of over 0.4 on a scale from 0 to 1. This has been clearly demonstrated in the *barometer of influence* and Prof. Hattie has brought to fore many influences that have for years been considered empirically as exerting a high effect (such as reducing class size and individualizing instruction), but which in fact produce a low effect on learning (0.21 and 0.22 respectively). This kind of evidence-based knowledge can effectively serve teachers in procuring ways to increase students' achievement.

In order to bring that concept and body of research to years/grades 1 to 12 teachers in Professional Development (PD) sessions, a brain-targeted teaching framework was developed that made use of scientifically sound ways of conveying information to present to teachers the main ideas of *Visible Learning*, where it becomes visible what teachers are teaching so that students know what they are learning.

To achieve that purpose, a clear set of success criteria was established which, according to Hattie's research, is adamant for achieving the goal that all teachers should have: making students' learning visible so that they could become evaluators of their own teaching. The criteria follow: 1) understand what *Visible Learning* is; 2) know the main implications of *Visible Learning*; 3) understand the attitude of expert teachers; 4) prepare lessons for *Visible Learning*; 5) analyze feedback; 6) investigate one's mind frame.

General Overview

Setting the Emotional Climate

To establish a positive emotional connection between the group and the topic, which comes from solid neuroscientific research with implications for Education (Colibazzi et al, 2010), I thought hard about a way to state clearly what *Visible Learning* proposes, what it intends to deliver, and how sound that body of research is so that teachers in the K-12 spectrum can: get in touch with the most current research in terms of effectiveness in classroom teaching; know what the major influences in teaching and learning are as well as their size effects; and have a basis on how to incorporate those influences into their practice.

Regarding that change is not easy and that a great part of the buy-in from teachers comes from their emotional engagement with the content of this session, I have incorporated several components that cater for the emotional climate. One such component, and perhaps the most important for this PD session, is clarity. Besides

straightforward intentions, one must understand that, more often than not, teachers' and students' perceptions about what successful communication entails may be at opposing ends (Levy et al, 1992). Therefore, it is important at the setting of the emotional climate, to create opportunities for clarity to come forth as often as possible. A first opportunity was provided through Kahoot, a tech app that allows users to choose and control their participation using their own tech device (computer, tablet or smartphone). I have used Kahoot in other instances, throughout this session, to fulfill different objectives, but all remain strongly grounded on the idea that emotional climate setting must offer students control and choice over manipulation of the content (Wentzel & Wigfield, 1998).

A second component is the provision of procedures and expectations. This caters to every student's need for emotional connectedness and predictability: to perform well, one needs to know what is expected of him/her and the way it is communicated strengthens the bond between teacher and learner (Hardiman, 2012). By means of clear and consistent expectations, such a goal can be achieved for, as Levine (cited in Tokuhama-Espinosa, 2014, p. 227) used to say: "our job as teachers is to help students find success every day so that they develop a perception of themselves as learners.". To add to this important concept of setting high expectations, Rubie-Davies (2010) notes that students perform to the level of teachers' expectations, whether these are high or low. So, it is utterly important to the setting of a positive emotional climate that the instructor establishes, right at the beginning of the learning experience, in a clear and distinctive manner, what s/he expects of participants. This has the added benefit of reducing anxiety and nurturing their self-image, for the clearer the criteria, the more students can measure their own understanding, participation and engagement in the session (Bicchieri & Chavez, 2010). To further the reflection and mindful attitude towards the content, rubrics were offered to "allow students to take stock of what they have and have not assimilated into their own knowledge base". (Wood Daudelin,1997 as cited in Tokuhama- Espinosa, 2014, p. 173).

In fostering a propitious emotional climate, it is also imperative, especially with adult participants, to make sure that humor is present throughout. This has been catered for with visuals that reinforce the need for reducing negative emotions or perceptions (Strick, Holland, van Baaren, & Van Knippenberg, 2009).

Teachers/Instructors are models of behavior and providing opportunities to display care, warmth and kindness, which are within the realm of the emotional climate, must be part of our content planning. This sets the emotional paradigm we are to work with and works not only for certain age brackets (Resnick et al, 1997) but for the entire life spectrum (Hardiman, 2012; Tokuhama-Espinosa, 2014). This I do not only in the way I show respect towards participants and in how I address them, but also in the model of reflection/feedback tool that I use at the closing of the F2F session. By asking them directly how they feel about the way I have treated them throughout the session, I open an avenue of further dialogue and communication that can be later extended to social media channels.

Catering for the Physical Learning Experience

Since order and beauty are influential to learning (Lillard, 2005, as cited in Hardiman, 2012, p. 69), I make sure that all my slides have a good presentation and are harmonious to the eye. The use of colors greatly varies according to the time of my sessions. In the early morning, I usually opt for a yellow background as I aim at bringing the morning disposition and the sun's influential power into the classroom I am using.

However, if the session is to be delivered in the afternoon, I opt for a darker tone and highlight the message using a lighter hue for fonts. This creates an added challenge for participants to stay focused and on-task as it is more difficult for them to read the content because of the contrast (light font, dark background). I also pay close attention to the visuals that I bring to each slide as I make use of them later on to recap the written content and to retrieve what was worked once more.

I also use light in different ways. In the morning, I tend to open all the curtains to let natural daylight shine in; in the afternoon, curtains and shades are used to avoid the glare and heat of the setting sun which can be very strong in our hemisphere (south). Therefore, I make more use of artificial light and tend to turn on the light that is directed at the screen and dim those directed at the audience. When there is the need for audience participation or mixed groupings exchanges, I do the opposite and let light shine on participants (Hathaway, 1995 as cited in Hardiman, 2012, p. 64).

When participants are instructed to engage in exercises (dynamics), I use movement to improve their cognition and alertness. By means of different strategies (like 'think-pair-share'/ 'fruit salad'/ 'matching clothing items' among others), I manage to get my audience to stand up and move, something that boosts their energy and participation and increases their probability of learning (Hillman, Erickson & Kramer, 2008).

Learning Goals

The learning goals for this module were the basic concepts of *Visible Learning* together with some reflective practices which stem from teachers' routine practices to make their impact more significant regarding their own self-appraisal and the learning of their students. As straightforward as this may sound, it is not an easy target to hit. Therefore, I make use of a very powerful big concept, that is the importance of understanding research in Education and the power it exerts in making our (teachers') praxis more solid and substantial. And to do that, I assess their prior knowledge of "ulcers".

Unbeknownst to many, ulcers are not caused by stress nor anger, but rather by bacteria that is found in our gut. This rendered a shared Nobel prize in Medicine in 2005 to an Australian gastroenterologist who had to drink an infected broth to prove everybody wrong (see more at http://discovermagazine.com/2010/mar/07-dr-drank-broth-gave-ulcer-solved-medical-mystery).

Learning Experience Design

To design this learning experience in such a way that research has to be unmistakably understood as an inherent basis of our professional beliefs and practices, I start with a simple yes/no question: "do you agree that ulcers are caused by stress?" Then I divide the 'yay' from the 'nay' sayers in the room and ask each group to draw a big concept map to illustrate the reasons, the examples and the evidence both teams hold to make their case. For that I allow them five minutes and give plenty of stationery material for them to draw their big concept maps. After the time allotted, both maps are displayed in opposite sides of the room and teams get to see each other's productions. This inevitably leads them to the self-realization that there is no evidence to consubstantiate the belief that ulcers are caused by stress, only hearsay passed from generation to generation.

After that provocative start, the learning experience, that is to be shaped by the realization of how and the extent to which research has to provide evidence to support everybody's practice, gets a much larger buy-in from the audience. Their *schema* to dispute, accept, base and reflect upon the knowledge about what constitutes *Visible Learning* is then ready to make sense of what is to come (the learning goals or success criteria) which is thus accepted without a reactionary stance. This ensues a higher probability for the content in the designed learning experience to be retrieved and consolidated (Byrnes, 2008).

Instead of using a mind map, just like the one cited above, to present the most important influences on learning according to effect sizes and contextual preferences, I opted to assess prior knowledge by using Kahoot. This was done for two distinct reasons: the first is that there are too many influences that are addressed under the overarching research of Prof. Hattie to establish the concept of *Visible Learning*. Therefore, I had to choose and control what influences were the most pertinent and relevant to be brought to my audience's attention. To remain true to the research conducted by Hattie (2012) and employ a tool that reflected that choice, Kahoot was chosen.

A second reason is that the questionnaires, created within Kahoot's main website that serve as the basis for audience participation, remain free and accessible by anyone when they become members of the Kahoot community. This fact favors my audience in providing them with opportunities to reflect, reassess their own knowledge and retrieve the memories encoded during the PD session as many times as they wish. This employability might not often be found with mind maps displayed once during the session but not retrieved at subsequent stages.

To provide a chance for participants to act on the knowledge they have been exposed to, there is a table (to be projected on the screen) containing slots for the insertion of each influence on learning together with a correspondence to the effect size that it has according to Prof. Hattie's research. This provides a chance for participants to generate the effect size bandwidth for each influence (for I had asked them to retrieve this information from memory encoded during the Kahoot session) and also to physically manipulate the slips and stand up to insert that slip in the appropriate box within the projected table. Research shows that exercising more effort to retrieve

information, what is known as the generation effect, delivers higher probability for memory recall (Slamecka & Graf, 1978).

For this dynamic, I printed each influence and participants had to report back to me the effect size bandwidth in which they should be placed (low/medium/high columns in the table) according to the feedback they had received using Kahoot. This offered them the opportunity to see the big picture again (all the 16 influences picked for this session together with their effect sizes) mapped together and inserted in the big projected table on the wall of our classroom.

To make use of the great impact that visuals create in bringing novelty to the environment (Posner & Rothbart, 2007 as cited in Hardiman, 2012) and to add expectation to that heightened attention (Summerfield & Egner, 2009), the barometer of influence, one of the most cited and widespread visuals based on Prof. Hattie's *Visible Learning* research, is explored to add strength and turn the idea of effect sizes relative to each influence more familiar to the audience. Designing learning experiences that cater for memory encoding, storage and retrieval do tend to facilitate learning (Barrouillet & Gaillard, 2011 as cited in Tokuhama-Espinosa, 2014, p. 126). *Brain-based strategies and justification*

To distinguish the memory encoded or retrieved through facts and language (declarative) from that memory created by repetition of movements (procedural), we need to retrieve what is familiar to provide a basis or a place for the unfamiliar to find opportunity for encoding and retention. That was created in this presentation via access of prior knowledge using Kahoot (Lewis & Williams, 1994).

When we rely on memory, many strategies have to be considered and incorporated for learning to happen. One such strategy is chunking, that makes use of groups of structured concepts or ideas put together to facilitate encoding, storage and retrieval (Gobet et al, 2001). Based on that strategy, I have included some slides of previous PD sessions where I anchor the unfamiliar concept being presented on what is familiar to them using the priming for pattern detection that our brains are wired to employ (Vanderberghe et al, 1996).

Whenever a student sees something new, an added bonus to memorization is set; one that is reliant upon the biophysical heightened attention humans pay to anything that is new (Balderston, Schultz & Helmstetter, 2011). However, for that novelty to promote the process that leads to long term memory, i.e. learning, we have to offer plenty of repeated rehearsals, elaboration and desirable difficulties (Bjork, 2017). Put altogether it seems to be difficult to achieve, but when we understand, as designers of learning experiences, that we have to make the brain use whatever information it has been exposed to not to lose it (Hebbinian Rule), then those concepts and ideas explored by neuroscience and cognitive psychology start falling into a pattern of interconnectedness that any educator must strive to make sense of and implement in their daily praxis.

Knowledge Transfer

When a student is told to apply the knowledge s/he has been receiving to make it understood by a wider audience, then there is room for creativity and real transfer of

knowledge (Barron et al, 1998; Barron, 2006). This happens because such student has thereon a problem to solve: how and in which ways is s/he going to make content accessible to different people? What ways are there to convey the depth and relations that this concept has with all the other concepts and ideas at their disposal? And what will create that everlasting impression, the imprinting that we all desire when we truly wish someone learns something?

That is the kind of challenge that I pose to teachers (turned students) at the end of my presentation when, after reviewing with them the content through visuals, I cast my die: it is always an unpredictable result that we, as designers of learning experiences, have when such challenges are proposed. There can be innovative results, beautifully accomplished models of transferred knowledge but there can also be meager and scarce examples of what was understood. Therefore, a teacher who is willing to prepare and deliver activities for extension and application of knowledge must never cease to be humble and to expect the unexpected. For that is how the human mind operates. There may always be a surprise for us!

Once that is well understood by the teacher/designer, there comes the part which this same teacher/designer plays in grand style: propitiating contexts where there is room for error and trial because this is the place where one can really create. We have to accept people, and learners, for who they are, for what they bring to the learning experience, and for the things they are capable of doing. That acceptance has nothing to do with lowering standards, but is rather firmly based on trust, on the belief that every human is different and can assimilate and deal with content and creation at differing stages and paces. Instilling in students the impetus to always do what reflects their best is what teachers should aim at. Ultimately, that is the mindset that will endure the extension and application of knowledge that stands the test of time (Dweck, 2006; 2015).

When teachers understand through firsthand experience how "fluency, originality and flexibility" are indeed associated with divergent thinking (Chávez-Eakle et al, 2007), it is more likely that they will try to foster activities that promote divergent thinking and freer and novel application of knowledge. When I invite teachers to exercise their expertise by conducting investigations of how they access their students' prior knowledge which is adamant to the *Visible Learning*, I give those teachers the responsibility and freedom of deciding about what is best for each student individually considered, and to create different modes of assessment so that the end result displays the variability and jaggedness that we all have (Rose, Rouhani & Fischer, 2013).

Providing Feedback

Feedback is indeed the fuel of learning and that main, straightforward and relevant message is at the pinnacle of John Hattie's work (2011, 2016; Hattie & Gan, 2011). Therefore, the target of evaluation and its importance to learning has been at the top of my mind since the creation and preparation, going on during delivery, and at the closing of this PD session. The fact that feedback has to be given throughout the learning process is something well accepted by teachers albeit rarely done. One fact is that it truly demands creativity from the teacher/designer and also a heightened attention to the question of formative assessment. The influence of each context is

also to be gauged as the teacher may even be flexible in thinking, planning and delivering formative evaluations, but in a school that is not cognizant of this need nor allows teachers to perform such assessment, there is no room for change. That is why I always work with school leadership prior to this PD session to investigate their evaluation method.

School Support

Most often than not, the school is already implementing some form of formative assessment and teachers just need input and alternative views and ideas on how to do this; but there have been occasions in which I had to dispute and inform the leadership team about what evaluation truly entails and how feedback is always at the heart of it. In such cases, I have to make them reflect upon the importance that feedback and its basic components, to name, continuity, quality and formation, have for learning to really move forward as a lifelong process. Once that roadblock is removed, then I can work with my participants, the teachers, who will be able to experience first-hand what, how and why feedback has to be present throughout any learning endeavor.

Assessing the experience

As cited above, and illustrative of many moments of this PD session to achieve different BTTs (brain teaching targets), I have used Kahoot to illustrate how a tech tool can be an alternative and efficient means of assessment. Being low stakes and delivering individualized and immediate feedback, tech tools such as this, which is paired in efficacy with Socrative and Quizlet, tick all boxes for the kind of formative assessment teachers have to provide to students without overloading their heavy and busy schedule.

Additionally, such a tool, by offering the benefit of being accessible to students outside the classroom and on an on-demand basis, paves the path for the self-regulatory kind of feedback that should be the aim of every teacher. Once a student realizes how to give him/her own self the feedback that propels learning, then teachers and tools have achieved their ultimate goal: fueling lifelong learning (Mynard & Navarro, 2010).

Another critical component of evaluation is rubrics. How are we to know how far or how well we have fared if there are no signposts to tell us if we have made it to the end accordingly? The setting of clear rubrics, irrespective of the age, content or level of achievement of one's audience, is inherent to the determination of one's success (Hardiman, 2012; Hattie, 2012, Tokuhama-Espinosa, 2014). The rubrics I have set forth to my audience had this rationale at their inception.

As important as knowing the signposts is having the right map in your hands. This 'map' when learning is involved refers to the answers that have to confirm, disconfirm or explain one's efforts either way. It is by supplying students with answers after an activity, preferably with a delay, that memory is more potently affected (Fazio et al, 2010). Another powerful effect on memory that feedback promotes is when it is delivered little by little, that is, in scaffolded instances (Finn & Metcalfe, 2010), as this is the time when students have more chances to reflect on their right and wrong answers and to deal with the dissonance henceforth created.

Apart from providing variability in the form of alternative assessments, when evaluation is targeted by the teacher/designer, authenticity must be present as well. This can be offered whenever the student has the 'upper hand' in developing and delivering the evaluation. Instruments that cause self-reflection and that draw upon an individual response to a task are the ones that cater for authentic evaluation (Horz, 2012). A superior form of authentic learning is brought about when the student is asked to self-evaluate against a given rubric; not only is it original, but also draws on their reflective capacity to analyze his/her own achievement.

To summarize, the conductor has to exemplify how feedback is to be received: when it is candy or ineffective (Brookhart, 2017), all is apparently well, but what happens when the candy gets tough, i.e., when quality demands honest and exponential feedback? Therefore, submitting oneself (the conductor, teacher or designer in charge) to the feedback that students can and should give in every learning experience is one of those things that one should rather do than say. The results may not be a 100% sweet, but they are always nourishing.

Conclusion

Knowing what works best in Education is essential. But this knowledge does not come to fruition if not grounded on principles that determine how we learn. Catering for the emotional climate, the physical setting and for the apt determination of goals that are to be developed, mastered and evaluated have to present, in tandem, for the improvement of teaching practices and learning processes. In this joint effort, i.e., *Visible Learning* coupled with Mind, Brain and Education principles, not only teachers come to benefit but their students, their settings, and their communities. It becomes a framework for practice where one informs and gets informed, via constant and quality feedback, where empirical evidence is matched to neuroscientific data and cognitive psychology findings for the benefit of entire communities.

Acknowledgements

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Participatory Peer Education: An Empowering Process for the Individual, Organization and Community

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Abstract

Studies of peer-led adolescent health education frequently report empowerment as an outcome for young people volunteering as peer educators. Such claims have been contested however, and there is a need to investigate what empowerment, and the participatory processes believed to facilitate this phenomenon, look like in the context of peer-led adolescent health education. A case study of a peer education initiative on the Shetland Islands was conducted to examine how peer education projects can utilise participatory methods in their practice and whether participants felt these to be empowering. By presenting the stories of staff and volunteers working at a peer education project, this paper explores whether their experiences correspond with definitions of empowerment as given in health promotion literature. A number of participatory practices were observed and identified as facilitating the empowerment of youth volunteering as peer educators. These include the creation of equal relationships between staff and volunteers, prioritisation of youth voice, formation of networks of peer group support and construction of safe spaces to discuss community issues. Combining perspectives from Education and Health, and drawing on theories of participatory education and empowerment; participants' stories have been compiled to create a narrative illustrating how actors working within these settings conceptualise the process by which peer education projects are empowered and in turn, empower their participants and the communities in which they are based.

Keywords: empowerment, peer education, health education, participatory education adolescent health

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Introduction

Peer education is thought to be an especially effective method with which to encourage the use of participatory practices within health education efforts.

> 'Peer educational settings promote assimilation or accommodation of a range of individuals' opinions within an evolving group process. Individual outputs weave and clash through the process of dialogue and argument between peers, as they ask one another questions, exchange anecdotes and comment on one another's experiences and points of view'
> (Campbell & MacPhail, 2002, 337).

Engaging populations in participatory learning processes is believed to foster empowerment (Simoni, Franks, Lehavot & Yard, 2011). When theories of empowerment, particularly those drawn from Freire's (1973) work, are applied to health education (Wallerstein & Bernstein, 1988), there are clear parallels with peer education.

Peer education is presented as an alternative to top-down expert advice, as it is the target population themselves who identify and educate their peers on issues of relevance to their social group. The similarity between educator and educated is thought to produce a more 'egalitarian dialogue' in contrast to expert providers, who are presented as being unsuccessful in their endeavours as they are too far removed from the social experiences of the target population (Stephenson et al., 2008). Similarly, the application of Freirean philosophy to health education prioritises the experience of the target population over experts, encouraging members to identify and take action to address problems in their communities. There is emphasis on the collective knowledge that emerges from the peer group sharing experiences and engaging in 'authentic dialogue' to understand the social influences that affect their individual lives (Wallerstein & Bernstein, 1988). Consequently, it is thought that 'an important element of the effectiveness of peer education approaches is the impact of the intervention on the peer educators themselves' (Parkin & McKeganey, 2000, 293).

Whilst there have been examples of peer educators reporting an increased sense of empowerment (Harrin, 1997), it has also been argued that peer education may inhibit empowerment. For example, many initiatives do not allow peer educators to select the content or delivery method for the intervention. Adults may be unwilling to cede control to volunteers as young people are often viewed as vulnerable or irresponsible (Harden et al., 1999). In this way projects merely reflect adult conceptualizations of young people's health problems (Milburn, 1995) rather than engaging youth directly. 'This is an issue which peer education projects… are likely to have to grapple with both in their formation and function' (Parkin & McKeganey, 2000, 293).

Problematically, what is meant by empowerment in the context of peer education is ambiguous. 'Peer education studies… typically focus on the behavioural impacts of interventions rather than on broader actions and rarely assess the elements of the program that result in the impacts' (de Vreede, Warner & Pitter, 2014, 48). Empowerment is frequently reported as an outcome post-intervention, but is not specifically explored or investigated a-priori. Indeed empowerment and participation are 'two of the most popular and at the same time controversial concepts' in health

promotion literature as 'both concepts suffer from insufficient theoretical articulation' (Cornish, 2006, 301). Consequently, there has been little focus on what empowerment looks like and how to enact this process within projects utilizing peer education (Frankham, 1998).

Research Purpose

The aim of this research therefore was to explore how projects utilize participatory methods to support peer-led practice; how volunteers describe their experiences of participating in a peer education project; and whether these experiences correspond with definitions of empowerment as presented in health promotion literature.

Methods

A case study was selected as the most appropriate design to address the research aims as they are recommended to explore 'areas… where terminology and a common language and a set of definitions are not yet clear or widely accepted' (Darke, Shanks & Broadbent, 1998, 279).

Sample

The case under investigation was the OPEN Project - a peer education initiative promoting adolescent health and wellbeing based on the Shetland Islands, Scotland. Study participants were those working or volunteering for the project during the fieldwork period.

Data Sources

Data providing source material for the study included:
- Observations of office behavior, peer educator meetings and workshops
- Staff interviews
- Focus groups with peer educators

Data Collection

Fieldwork took place during March 2017. The researcher spent approximately 100 hours with the project to gather participants' views and experiences of peer education and its practice. No interview protocols were used during staff interviews or peer educator focus groups. Participants were encouraged to think about these activities as conversations and to describe their role within and recount their experiences with OPEN. This allowed participants to raise key debates and discuss subject matter in terms of understandings that were their own, rather than being prompted, influenced or restricted by the researcher.

Analysis

Responses were audio recorded and transcribed to capture the words and meanings of participants in their original form. These were then analysed thematically as they pertained to each of the research questions. A constructivist approach to analysis was adopted to encourage close collaboration between the researcher and participants,

thereby enabling participants to tell their stories (Crabtree & Miller, 1999). Through these stories, participants described the reality of practicing peer education as they experienced it (Lather, 1992; Robottom & Hart, 1993). As empowerment is such a broad term, Zimmerman's (2000) definition of empowerment as a multi-level construct, taking place on three inter-connected levels: that of the individual, the organisation and the community (Israel, Checkoway, Schulz & Zimmerman, 1994), was used to guide analysis.

Validity

Whilst bias arising from observation effects are almost unavoidable (Walsham, 1995), it is hoped this was limited through participants' prolonged exposure and interaction with the researcher to establish rapport. This reduces social desirability responses (Krefting, 1991; Miles & Huberman, 1984) as it 'allows people to return to a daily life that one hopes goes beyond what is performed' for the researcher (Miller & Dingwall, 1997, 17). Another potential for bias is in the researcher's analysis of case data as 'the researcher is presenting their interpretation of other people's interpretation' (Walsham, 1995, 78). Long verbatim quotations have been included to 'convey a sense of immediacy to the reader' (Fetterman, 1998, 124) and provide them with sufficient data to determine for themselves whether the study's interpretations and conclusions are warranted. The study was also subject to 'member-checking' (Baxter & Jack, 2008). Participants read the study and were asked to contribute any new or additional perspectives they felt to be important. In this way, the researcher ensured that findings resonated with participants and represented an accurate reflection of their thoughts and behaviour.

Ethics

Ethical permission for this study was granted by Durham University School of Education Ethics Committee.

Results

The Case

OPEN is an acronym for 'Our Peer Education Network'. There are four part-time staff members working at the project and a group of twelve young people volunteering as peer educators, aged between 16-25. Two of the staff members (Staff 3 and 4) were originally volunteers who were invited to take on more responsibility with a paid role within the organisation. OPEN work in partnership with local practitioners from a range of services, using these partnerships as community forums where professionals and community leaders come together to discuss issues around health promotion and practice. This has created opportunities for collaboration with other services and helped to identify gaps in existing provision. In return, volunteer efforts are celebrated by the community in the form of 'Saltire Awards'; an annual awards ceremony acknowledging the contribution of youth volunteering.

The Peer Educators

OPEN is seen to provide a useful service for 'those that aren't engaging well in education or are struggling with things' (Advocacy and Participation Worker) as volunteers with few or no qualifications can gain skills, training and accreditation. These incentives were not alluded to by volunteers however, who instead described their feelings of responsibility towards educating their peers about topics where adult provision was perceived to be insufficient:

> 'The reason that I come and want to do it is because the school has so much more to teach, they find it hard to focus on the real issues that affect young people. Having a group like this come in gives them more of a chance to actually learn and understand the issues that could affect them'
> (Peer Educator 9)

Experiences of Peer Education

By participating in a process identified by both staff and volunteers as being participatory, young people described increases in confidence which not only changed how they perceived themselves and their self-efficacy, but also changed how they related to and understood their identity within their community.

Process

Volunteers are given opportunities to identify issues that affect their social group through collective discussion and debate in 'topic of the week' at OPEN meetings. They find and present solutions to these problems in the design of educational workshops for their peers. Volunteers select key messages they would like students to take away from the workshop, decided by consensus vote. The group then plan activities to convey these messages. Staff then try to fit these activities into a structure suitable for schools. This sometimes involves compromise.

> 'It's difficult negotiating which year gets which workshop because schools don't want the first-years having drugs education or sixth-years having sex education because it's too late'
> (Staff 4)

Whilst acquiescing to these requests, staff are mindful that youth voice is central to the project:

> 'It's not about me teaching them to take a lead, it's about young people being given the opportunity to take a lead themselves. I know in some ways that looks twofaced because NHS Shetland will want us to do something and everyone will go yeah let's do it. So am I feeding them information that's actually our agenda? It's about finding a balance'
> (Staff 1)

Volunteers are encouraged to design and develop resources whenever they feel motivated, inspired, bored, spot a gap or want to do something different with existing

material. For example, the most recent addition to OPEN's programme is an LGBT workshop designed by a volunteer.

> 'They went off on their own and produced a format for an LGBT workshop without any of us (staff). It was obvious they didn't need us interfering, they could go and complete that on their own and it was great'
> (Staff 3).

Workshop content and delivery is modified based on volunteer reviews:

> '…we use the information gathered from peer educators' learning and experiences, working with them to make decisions about our next step/strategy'
> (OPEN End of Year Report, 15/16).

This focus on youth voice was identified as important by volunteers:

> 'It's successful because we do everything. Everything we do, even if they want a new workshop, they come to us and ask us what we think about it and we do it'
> (Peer Educator 2).

and participatory by staff:

> 'It's focused on the participation of the young people… It's not us telling them anything. It's them telling us'
> (Staff 2).

A sense of equality is created between staff and volunteers by making training opportunities available to all and being honest about lacking knowledge when complex issues arise in 'topic of the week'. Volunteers describe staff as 'more like friends' (Peer Educator 4) and volunteers have transitioned to working for the project as staff.

> 'When I made the transition from being a volunteer to being a staff member, there wasn't ever a division. It wasn't like *there's* volunteers and *there's* staff. We're all a big team'
> (Staff 3)

This was not as seamless as first appears however:

> 'It was weird to begin with… I had to find that whole identity of a paid staff member'
> (Staff 4)

> 'When I first became a worker there was still that mindset that I wasn't a worker'
> (Staff 3).

When discussing their work, both staff and volunteers use collective pronouns such as 'our' and 'we'. There is sometimes a sense of personal ownership 'as long as they don't change my drugs workshop' (Staff 3), but the emphasis is on the collective.

> 'Good working practice is making sure the young folk feel ownership. It's their community and their issues and their ideas that are going to make a change for other young folk'
> (Staff 1)

> 'They've always said the main goal of the project is it being run by the young people'
> (Peer Educator 8)

Outcomes

Project documents report:

> 'Peer educators develop confidence, skills and knowledge to deliver workshops and activities. This process increases their self-esteem, personal development and helps them gain skills that are transferable to future work or training'
> (OPEN End of Year Report, 15/16).

Volunteers identified a number of advantages to participating in the project.

> 'I attended the meetings and training and progressed and got more confident. I realised through working as part of the project that I wanted to work with young people. I want to open a youth café because youth in Shetland need another youth café'
> (Staff 3)

> 'I was involved with child protection and at the time I couldn't understand why they were doing it to me. Then I got the training and heard the reasons behind it. I was obviously a child protection issue. I think we should do something where we help support kids involved with child services. Because it would be better for young people to help them understand the reasons why adults see child protection as they do'
> (Peer Educator 3)

> 'I feel like it's built my confidence and I've learnt a lot of stuff. I feel more like an active person in the community'
> (Peer Educator 6)

> 'It's definitely got my confidence up and made me want to come back'
> (Peer Educator 9)

Volunteers identified their work as important in helping them develop a sense of identity and self-worth:

> 'Everybody was saying 'Oh I really enjoyed that'. That was really good. You're sat there thinking, *I* did that'
> (Peer Educator 8)

> 'You're not just a mum. Or you're not just a mum anymore. Because you're returning to do something that you did previously, before becoming a mum. Something that you were confident that you were good at'
> (Peer Educator 1).

OPEN has also created opportunities for young people to access social support from a wider network of peers:

> 'There's been people that have come to meetings before that I thought I would never ever talk to. A different group from different areas. But OPEN honestly links the community together'
> (Peer Educator 1)

> 'Since I started I can be comfortable with almost anyone in the room and if I had a problem I could actually speak about it to them'
> (Peer Educator 6)

> 'We speak about stuff that troubles you'
> (Peer Educator 4)

> 'When my mum passed away I had such good support'
> (Peer Educator 3)

> 'Even just getting pregnant at a young age, everyone here was so supportive'
> (Peer Educator 2)

Discussion

This study examined staff and volunteers' experiences of participating in a peer education project. Findings suggest that OPEN place considerable emphasis on being participatory and youth-led. Both staff and volunteers believe that this is empowering.

Freire's principles for education

Freire proposes a three-stage process through which an empowering education can be produced: listening to the needs of the community, initiating participatory dialogue about community issues, and planning action to support the problems identified from this dialogue. Each of these is discussed in terms of their similarity to the case being described within this study, along with the benefits and disadvantages of adopting such an approach and implications for practice.

Listening to the needs of the community

Freire posits that the initial listening stage should be conducted in equal partnership with community members to identify felt needs and priorities for action. In the case of OPEN this process is facilitated by engaging in strategic partnerships and prioritising

youth voice. Walker & Avis (1999, 576) advise that 'the most successful peer education projects will be those which seek involvement from a broad range of agencies'. OPEN has been able to match their services to the needs of the community by using strategic partnerships to map and thus identify gaps in existing provision. Engaging with groups who exert power over volunteers and influence project actions ensures that the project is not overlooked, but divergent interests within these groups can increase difficulties around commitment to and consensus on provision (Cornish & Campbell, 2009; Backett-Milburn & Wilson, 2000). Similarly in this case, the identified needs of youth are sometimes tempered by the needs of the schools in which content is delivered; for example, by selecting the 'most appropriate' age group to receive workshops. This does not always align with the wishes of OPEN volunteers and places limits upon the project's youth-led approach. Despite this, youth voice within the community is clearly powerful as volunteers have independently taken the initiative and been approached by practitioners to work together to design workshops. This may have important consequences for youth empowerment as young people are more likely to feel in control of their health if they experience being effective in different fields and their competence is recognised by others (Wallerstein, 1992). Within the organization, youth voice is of import as it is used to review and revise practice. This is a strength of the project as health promotion research often points to gaps in knowledge about the views and perceived needs of youth (Milburn, 1995; Nutbeam, Aaro & Wold, 1991). By creating opportunities for youth to come together and identify community-based issues, the project is sensitive and responsive to the needs of the young people and community they serve. On a more cautionary note however, the reliance on youth feedback is predicated on the assumption that young people always know what is best for young people. Whilst it is important that young people receive education that is agreeable to them, and that their voices are prioritized within promotion efforts, practitioners should be careful that this is not at the cost of listening to other voices. Pupil needs are diverse and likely to be very varied, which may make it difficult to meet everyone's needs or result in education focused on dominant discourse e.g. becoming heteronormative (Wight, 1999).

Participatory dialogue

In a Freirean approach, knowledge is not thought to be held solely by experts. Instead, the emphasis is on the collective knowledge that emerges from a group sharing experiences and understanding the social influences that affect their lives. OPEN offer Shetland youth an opportunity to engage in this dialogue by inviting volunteers to attend meetings and participate in the working processes of the organisation as equals with staff. To facilitate participatory dialogue, Freire proposes using codes; introducing objects to the group that represent a community issue to engage assembled members in meaningful discussion. The 'topic of the week' serves this function at OPEN meetings. In a Freirean approach, groups are asked to: describe what they see and feel, define the many levels of the problem, share similar experiences from their lives, question why the problem exists, and develop action plans to address it (Wallerstein & Bernstein, 1988). This process mirrors that observed within OPEN meetings, where volunteers are encouraged to think critically, ask questions about, and inform the educative process; following recommendations for participatory youth-led programmes to create a context where youth can engage in dialogue and debate (Campbell & MacPhail, 2002; Campbell, 2003). Volunteers identify and explore issues they collectively feel are important to their community and

suggest methods in which these problems could be addressed. Volunteer contributions are validated by the empathetic listening of the group, thereby serving to function as a form of social support. This is important as participatory dialogue is most likely to occur in an atmosphere of trust and solidarity amongst volunteers who feel they have common life goals and face common life problems (Campbell & MacPhail, 2002). Freire proposes that dialogue-based approaches are those in which everyone participates as equals, enabling learners to be actors in their own lives and society. Groups must come together as co-learners; creating knowledge and raising themes for mutual reflection. This is achieved by staff and volunteers at OPEN positioning themselves as co-learners. Staff do not privilege their knowledge or present themselves as superior to volunteers. In this way, discussion in OPEN meetings is an example of Freire's 'authentic dialogue'. It is an alternative to authority figures imposing their own views as knowledge is constructed with volunteers as equals. A sense of collective ownership is reinforced by referring to the organization and its products with collective pronouns such as 'our' and 'we'. This may further strengthen feelings of equality between staff and volunteers as it suggests that all members of the organisation are united in working towards a common purpose.

Action

A Freirean programme emphasies that action and reflection are key outcomes of education. As a result, a Freirean approach to health education should encourage group members to develop their own curricula and undertake action to address self-identified problems in their community. OPEN achieves this ideal by giving volunteers the opportunity to work in community partnerships to develop health education curricula for local youth and formulating solutions to community issues in OPEN meetings. This is especially important as OPEN engage youth traditionally seen as being disempowered such as young mums and those in contact with social services. Participation in the project would appear to act as a gateway for youth to not only access education and employment, but to develop confidence, build supportive relationships and cultivate positive links with their local community. In light of this, perhaps the target population of peer education projects should be the peer educators themselves. Whilst this may reduce funding opportunities as interventions would target a smaller population, evidence of peer educators' influence on students is contradictory and limited (Milburn, 1995; Kim & Free, 2008; Tolli, 2012); whereas there is a dearth of research propounding benefits to peer educators (Backett-Milburn & Wilson, 2000; Badura, Millard, Peluso & Ortman, 2000; Strange, Forrest, Oakley & RIPPLE, 2002; Maticka-Tyndale & Barnett, 2006). By giving volunteers the opportunity to transition to staff, OPEN fosters socially responsible leadership. Other peer-led projects have identified the importance of allowing volunteers to increasingly take on leadership roles (Cornish & Campbell, 2009) through increased training, mentoring and development of management experience. The appointment of volunteers to a paid position was presented as requiring a change of mindset, suggesting that there is some distinction between what it means to be a member of staff and a volunteer. Such practices facilitate the transfer of decision-making to volunteers however, which is a step towards achieving the project's aspiration to be totally youth-led as it enables volunteers' progression from participant to proponent.

Empowerment

In this study, empowerment was defined as a multi-level construct (Zimmerman, 2000), taking place on three inter-connected levels: that of the individual, the organisation and the community (Israel, Checkoway, Schulz & Zimmerman, 1994).

Individual empowerment

Individual empowerment combines personal efficacy, competence, a sense of mastery and control, and the ability to influence institutions and decisions (Zimmerman, 1990). Turner & Shepherd (1999) suggest that those volunteering as peer educators must already be empowered to have the confidence to volunteer. Instead, accounts presented as part of this study portray a gradual process of confidence building and skills development that assists volunteers in performing their role as peer educators. This is in line with findings from previous studies (Campbell &Mzaidume, 2001; Backett-Milburn & Wilson, 2000) and reviews of peer-led approaches (Wilton et al., 1995). OPEN volunteers extensively describe personal developments they believe occurred as an outcome of volunteering as a peer educator. Each of these stories corresponds with the definition of individual empowerment given above. For example, personal efficacy and competence are demonstrated through testimonies of increased confidence and expanding skill sets. Bestowing awards, helping young mums to find or reclaim a sense of identity, using fellow volunteers as a support network and widening understanding and awareness of social issues through debate and discussion in OPEN meetings suggest mastery and control. The ability to influence institutions is demonstrated through volunteers being invited to collaborate with other professionals to develop health promotion programmes. Volunteers describe newly-acquired motivation to work with the community and a keener sense of social justice in wanting to help other youth; for example identifying the need for a youth café and aspiring to make this a reality.

Organisational empowerment

Organisational empowerment is defined as organisations that are democratically managed, in which members share information and power, utilize co-operative decision-making processes and are involved in the design, implementation and control of efforts toward mutually defined goals (Israel, Checkoway, Schulz & Zimmerman, 1994, 152). Staff and volunteers at OPEN relate to each other as equals. There is co-operative decision making through voting on issues in meetings, and volunteers are always consulted on aspects of project implementation such as funding.

Community empowerment

Community empowerment is:

> 'a community in which individuals and organisations apply their skills and resources in collective efforts to meet their respective needs… provide enhanced support for each other, address conflicts within the community and gain increased influence and control over the quality of life in their community'
> (Israel et al., 1994, 153).

OPEN share their training, knowledge and resources with other professionals in the community. In turn, they are invited to identify community needs and suggest plans of action to address these. Campbell, Wood & Kelly (1999) suggest that the most important dimension of health-enhancing communities is 'perceived citizen power'; where people feel that their needs and views are respected and valued and where they have channels to participate in making decisions that affect their community. Strategic partnerships aid this process as members of the public, service users and professionals can make their voices heard. Advantages of the community partnerships OPEN work within include: maximizing power and influence on community issues, pooling resources and expertise, sharing responsibility for problems and any resulting provision, facilitating coordinated action and minimizing duplication of services. This creates one cohesive movement to support peer education across services throughout the locality and suggests that OPEN could not empower volunteers without the support of its empowering community.

Strengths, Limitations and Recommendations for Practice

Whilst OPEN appears to be highly participatory internally, it is less clear how this participation can be expanded to include the students attending workshops. As workshops are designed by peer educators it is unclear how much influence participating students have/feel. Further research is necessary to explore these views.

Though volunteers easily talk of changes in themselves and in their relations with peers and the wider community, this is merely reported as an observation. It is not within the remit of this study to suggest that these were specific outcomes of participation in peer education. Rather it is believed to be an outcome as reported by those experiencing this phenomenon. As this study cannot test or generalize findings, impact on personal and community-level development could be explored through experimental designs that can establish causality. It may be useful for projects to measure volunteer wellbeing as part of evaluation efforts. Measuring wellbeing longitudinally over the duration of a volunteer's interaction with a project could be a new direction in evaluation. The empowerment described by OPEN volunteers was a long-term process; therefore measuring volunteers' self-esteem or participation in community organising efforts throughout their time volunteering as a peer educator may provide a clearer indication of this effect on volunteers. Self-report measures cannot completely capture this process however and monitoring these changes poses a challenge to evaluators. Further evaluation such as referee or parental feedback or comparing volunteer feedback with that of other youth or voluntary organisations may be needed to support such an approach.

Evidence from this study would suggest that those wishing to develop peer-led projects in other areas need to look to the community context in which the project is to be based. As Wallerstein & Bernstein (1988) posit, empowerment models can only exist through working with the reality and resources of the community. This study has highlighted the importance of establishing strong working partnerships with practitioners and target populations to identify needs, share resources and work collectively towards a common goal. Changes in health behavior are more likely to occur within communities where there is trust, reciprocal help and support, a positive community identity and high levels of involvement in local organisations and

community networks (Campbell & Jovchelovitch, 2000). Consequently it may be difficult to replicate the processes observed in this case in different settings: 'there may be little that programme designers can do other than conclude that participatory approaches such as peer education are not suited to disempowering environments' (Cornish & Campbell, 2009, 133). Despite this, findings echo those reported in other studies of peer education that have been situated in marginalized, disempowered communities (Cornish & Campbell, 2009; Campbell, Foulis, Maimane & Sibiya, 2005).

Conclusion

By providing young people with an opportunity to choose intervention content and engage with other aspects of provision typically perceived as being within the remit of adults, such as discussing funding sources and meeting with stakeholders, OPEN demonstrate to volunteers how their actions can directly influence and effect change within their own lives, their organisation and their community. Such efforts to create participatory peer-led practice do not go unrewarded. Participants were overwhelmingly positive about their experiences. This is especially important as youth volunteering with OPEN are from backgrounds typically seen as being disadvantaged or disempowered in health, social and educational contexts. In consequence, this study recommends that future research into peer-led adolescent health interventions should focus on peer educators as the target population; evaluating the impact on volunteers and whether such an approach could be sustainable as an intervention for those in need of additional support to increase confidence, community engagement, and positive self-identity, as well as providing the more obvious surface level skills and qualifications beneficial for future education and employment.

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Leadership Skills and Competencies Through the Co-Curriculum - The Singapore Management University

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Abstract
Student affairs professionals and those who work with students directly know in their hearts that students learn in the co-curricular arena. Unfortunately, they do not always have a way to show that to others. Once learning outcomes have been developed, the appropriate assessment measures have to be developed because stakeholders are interested in what students are able to do in college as well as what they will do when they enter the work world. Many of the skills that employers want are the very skills that student affairs professionals teach students, such as communication, problem solving, and working with others who are different from themselves. In this current environment, there are calls for student learning assessment and documentation, both in and out of the classroom. Professional associations (ACPA, 2006; ACPA/NASPA, 2010) recognize the importance of student affairs professionals' ability to assess student learning using multiple methods. Direct and Indirect Measures of measurements are used in this study to measure learning especially leadership skills and competencies. The paper will introduce examples of how these direct and indirect measures, namely a structured questionnaire and a semi-structured interview respectively, were implemented and how the results were obtained and analyzed showing evidence of learning. This research and data gleaned will make student leadership learning in higher education more robust, especially in a Singapore context.

Keywords: Leadership, Co-Curricular, Outcomes Measurement

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1. Introduction

This report provides an analysis and evaluation of graduate outcomes that result directly from student leadership in Singapore Management University (SMU). Two separate studies were conducted over two stages - the first study was conducted to validate the existing list of SMU Graduate Outcomes and the second study was conducted to understand what the Graduate Outcomes were from the viewpoint of a student leader. In the first study, definitions of the graduate outcomes were found to be insufficient, as many students gave varied responses to what they thought were graduate outcomes and the extent to which they believed they had developed these graduate outcomes. However, we found that the variables defined in the Graduate Outcomes were neither internally consistent nor independent. The results calls for a more specific definition of each variable. Hence, we conducted the second study to identify and define skills developed from student leader and the process of developing these skills.

2. Problem Definition

Singapore Management University aims to be a "Different U" by bringing out a "Different you". This is done through different policies such as the mandatory internship programme, compulsory community service hours, and vibrant student life. The Graduate Outcome attempts to pave the direction for students to develop employable skills that is beneficial in the workforce. However, there is no indication or research conducted to identify the causality between the skills developed by student leaders and its effectiveness in the workforce. Hence, this research attempts to identify the skills developed by student leaders and test if student leaders use these skills developed in other environments.

3. Study 1: Research Design

This study is a quantitative analysis of skills attained by student leaders during their term of service using the SMU Graduate Outcomes. The framework consists four elements, it aims to develop student leaders as strategic thinkers, global citizens, team players, and lifelong learners. Over 300 student leaders in the Singapore Management University (SMU) constituent bodies (CBds) were surveyed to measure skills each student leaders acquire. The survey will be divided into four sections; collection of basic particulars, skills leaders felt were essential to be elected or coopted into role, skills used during the term of service, and skills applied during internships. An online survey was sent out to all students holding leadership position within student constituent bodies or student clubs.

3.1 Statistical Analysis

The study surveyed a total of 301 student leaders and the data analyzed using an open-source statistical program, R Studios. The statistic package used for the analysis are "psych", "performance analytics", and "ggplot2". From this quantitative analysis, we have drawn results from the pre-identified variable's internal validity, randomness

of data, interdependency of data, and cluster analysis. A Cronbach alpha was applied to the scales categorized within the four skills identified in the SMU framework to validate the consistency of questions asked. Results of the various scale within the skill category will then be summed if the Cronbach alpha is above the value of 0.7. (Cronbach, 1951; Nunnally, Bernstein, & Berge, 1967) and hypothesis:

H0: Skills learned by student leaders of different roles are the same.
H1: Skills learned by student leaders of different roles are not the same.

A box plot was constructed for each skill identified by the SMU framework with student roles identified as with student roles as categories of the four plots. T-test conducted to check if skills learned by student leaders of different roles are the same. 4 by 4 correlation matrix comprising the four skills identified by SMU was constructed to conduct a cluster analysis for each of the combination of variables to test if roles can be identified from the skills learned during the student's term of office. Six scatterplots comparing each of the four skills identified by SMU and four histograms analyzing the general trend of skills was constructed using a randomized dataset (Anderberg, 1973). Hence showing the role which has a higher propensity to learn a certain set of skill. The histogram shows the aggregated scores of each skill from all student respondents.

3.2 Internal Validity of Variables

The variables identified for this study are the four SMU Graduate Outcomes namely, Strategic Thinker, Global Citizen, Team Player, and Lifelong Learner. We have divided each variable into two sections with three questions each. We then calculated the Cronbach Alpha for each section and its' total Alpha score to analyze the internal validity of the variables. The recommended Alpha value to verify internal validity is above 0.7. (Cronbach, 1951; Nunnally et al., 1967) The results of the alpha values are as displayed in Figure 1.

	Raw Alpha Value	Standard Alpha Value
Strategic Thinking (Initial)	0.76	0.76
Global Citizen (Initial)	0.66	0.66
Team Player (Initial)	0.63	0.63
Lifelong Learning (Initial)	0.68	0.68
Strategic Thinking (Duties)	0.68	0.68
Global Citizen (Duties)	0.24	0.25
Team Player (Duties)	0.17	0.26
Lifelong Learning (Duties)	0.46	0.49
Strategic Thinking (Total)	0.8	0.8
Global Citizen (Total)	0.5	0.6
Team Player (Total)	0.56	0.62
Lifelong Learning (Total)	0.47	0.5

Figure 1: Alpha Value of Variables

As observed, the only two variables that exhibited internal validity is Strategic Thinking (Initial) and Strategic Thinking (Total). For other variables, we observed a consistently low internal validity. The low internal validity of the variables hints at the broadness of the definitions for these variables, with the sole exception of "Strategic Thinking". This can manifest in the form of measuring multiple attributes within a single variable. Therein lies our first recommendations:

1)   To narrow the definition of each graduate outcomes for analytical purposes
2)   To identify skills hidden within each graduate outcome for analysis

With these recommendations, we can expect a greater variety of variables to analyze and a better internal validity for each variable.

3.3 Cluster Analysis

We have used a correlation matrix to perform a cluster analysis. The first observation we can see from the correlation matrix is the randomness of data. Every variable adheres to a normal distribution which validates the randomness of the data which allowed us to proceed with the analysis. (Var, 1998)
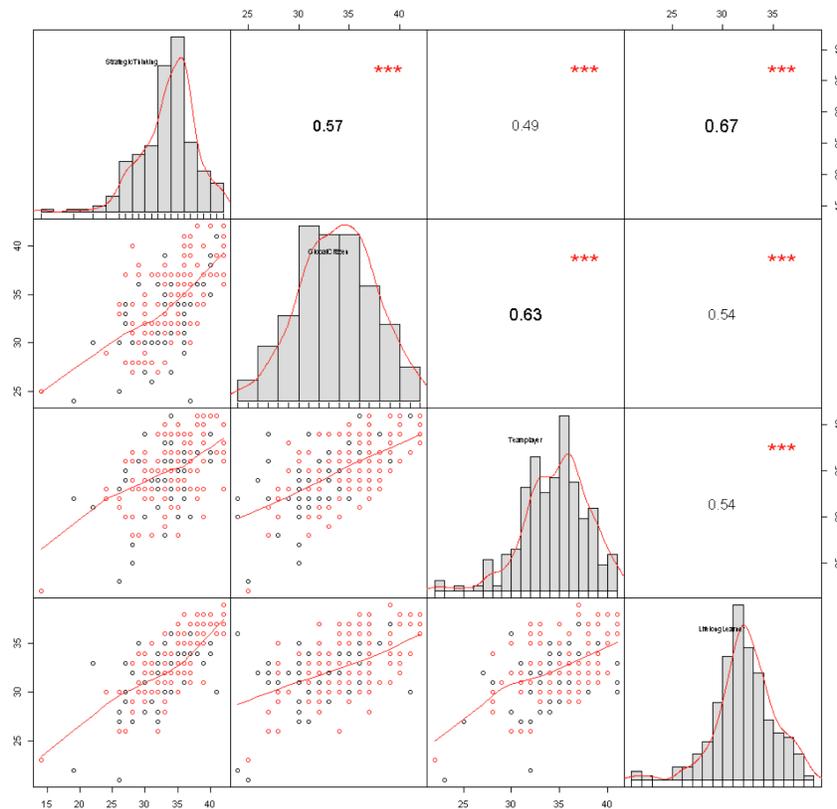
Figure 2: Cluster Analysis for Elected and Co-opted Leaders

Next, the correlation coefficient of each variable. The recommended inter-item correlation coefficient is between 0.2 and 0.4. (Briggs & Cheek, 1986) However, the correlation between the variables as observed above is above 0.45. This suggests interdependency between these variables. With attention for the correlation between "Strategic Thinking" and "Lifelong Learner" at 0.67***, and "Global Citizen" and "Team Player" at 0.63***, we might be able to generalize the variables measured. Firstly, the abnormally high correlation between "Strategic Thinking" and "Lifelong Learner" suggests the measurement of task-orient functions of leadership while "Global Citizen" and "Team Player" might be measuring the people-orient functions of leadership. Thirdly, there is no significant signs of clustering in these scatterplots. This shows that elections make no significant impact in the skills demonstrated by student leaders. Similar observations were made on other variables.
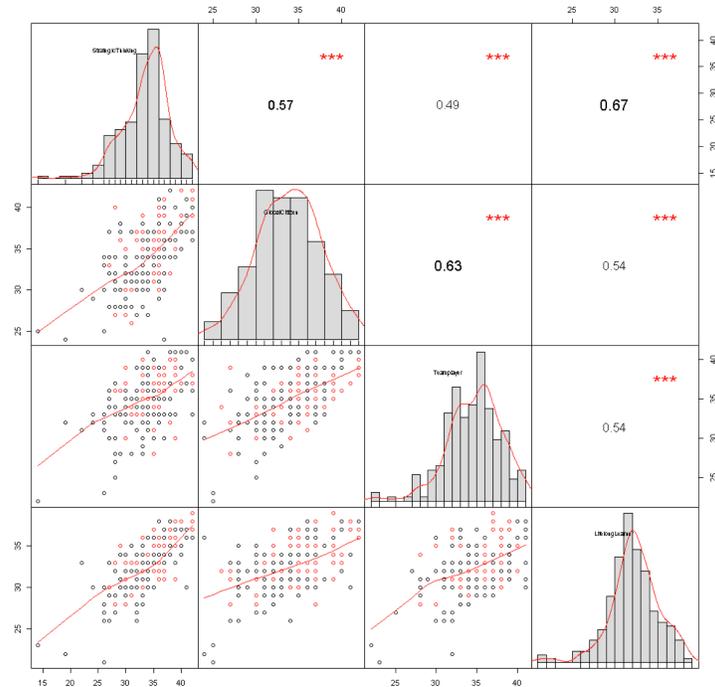
Figure 3: Cluster Analysis for Training before Term of Service

We witnessed little indications of clustering when we divide the survey samples based on the presence of management trainings before their term of service. This indicates the insignificant impact of trainings on skills demonstrated.
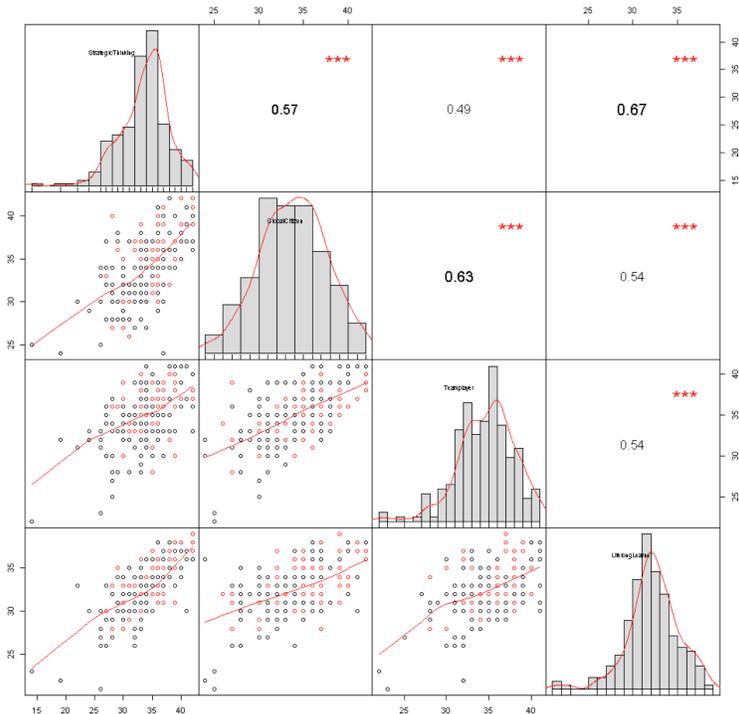
Figure 4: Cluster Analysis of Handovers

There are no visible clusters when we divided the samples by the existence of handover processes. Hence, we can infer that the handover procedures today do not have an impact of skills demonstrated by student leaders.
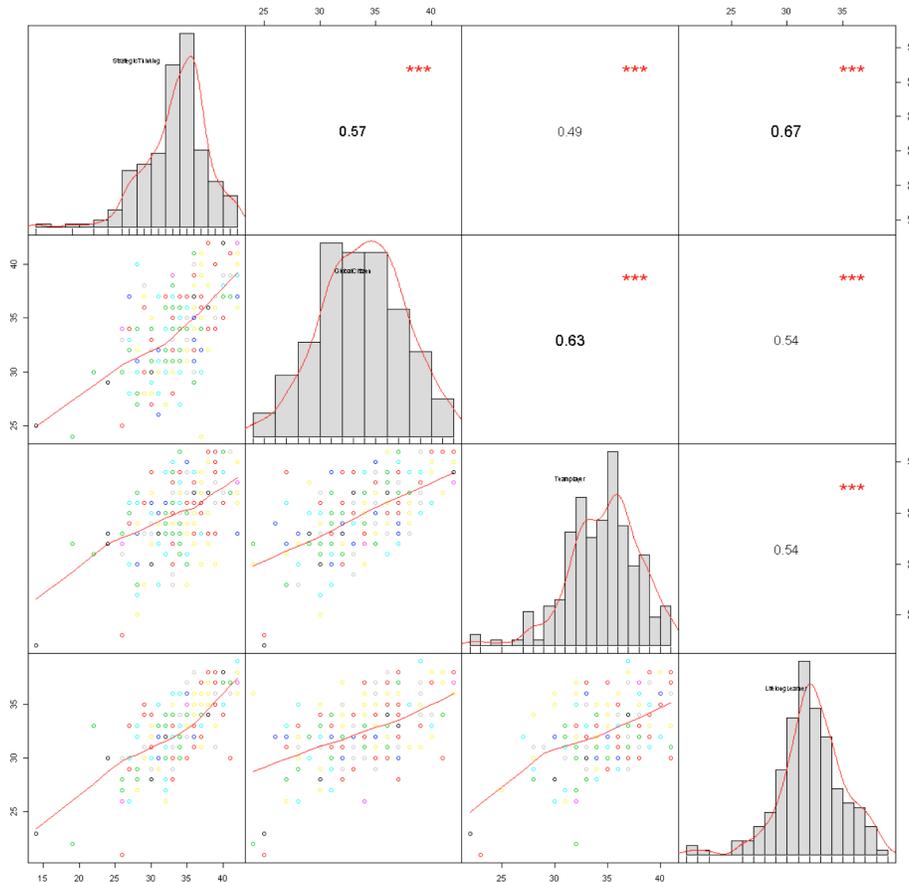
Figure 5: Cluster Analysis of Leadership Roles

We observed no clusters at the scatter plot for the eight leadership roles identified. Hence, we can conclude that the roles are insignificant to the skills students demonstrate during their term of leadership. Despite the insignificance of the independent variables on the graduate outcomes, we created box-plots to further analyze the impact of student roles on different skills. We observed from the "Strategic Thinking" plot that Presidents performed the best in this skill, followed by vice presidents. This is evident as the roles are undefined and requires interdisciplinary knowledge to execute. Hence, the lack of a clear definition of the role forces one to exhibit the "Strategic Thinking" outcome. Additionally, we noticed that there is a huge variance for this function for the Assets/Logistic Secretary and the Honorary Finance Secretary has the worst median out of the eight roles. We also observed the stellar performance of the Internal Relations/Liaison Secretary. Except for "Strategic Thinking", the Internal Relations/Liaison Secretary has performed the best in all graduate outcome.
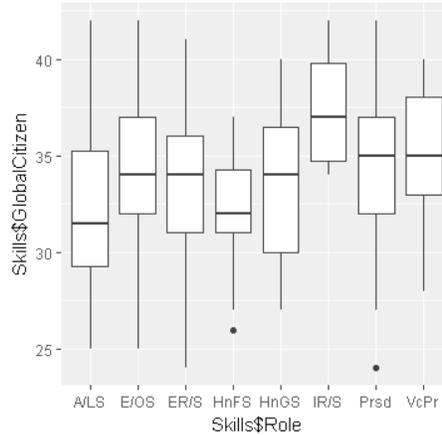
Figure 7: Global Citizen

From this plot, the Internal Relations/Liaison Secretary has a significantly better performance as compared to the other roles. The "Global Citizen" variable aims to measure the ability for one to empathize with a diverse group of people. Due to the requirements of the role, it is only natural for the Internal Relations/Liaison Secretary to perform best in this role as they coordinate between the Constituent Body's demands and the Club's needs. Hence, managing an array of stakeholders with sometimes contradictory objectives. Thus, they will require the skills specified in the "Global Citizen" variable to effectively execute their role.

The Assets/Logistics Secretary have displayed a large variance for this variable while having a low median. The Honorary Finance Secretary also displayed a low median for this variable.
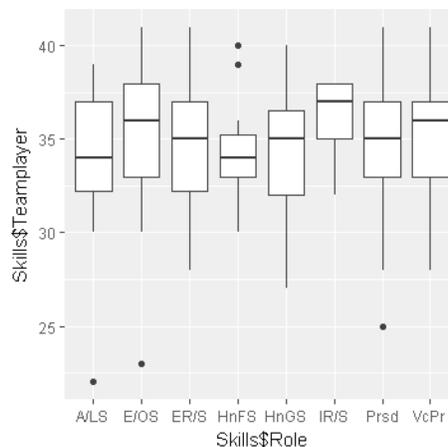
Figure 8: Team Player

There is little significance between roles for the "Team Player" variable. However, we observed a somewhat similar pattern in chart. Firstly, the Internal Relations/Liaison Secretary still scored the best for this variable. Secondly, the Assets/Logistics and Honorary Finance Secretary fared the worst for this variable.
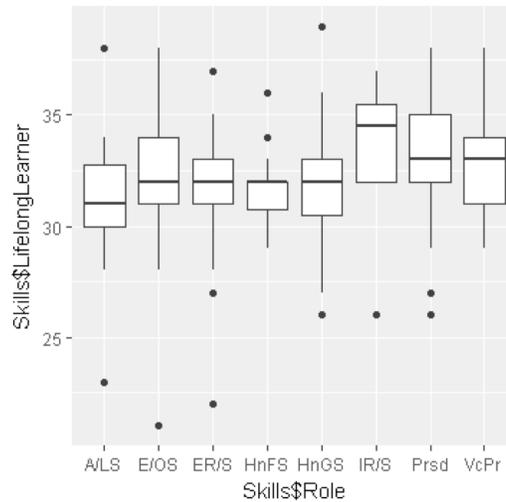
Figure 9: Lifelong Learner

The same pattern is observed for the "Lifelong Learner" variable where the Internal Relations/Liaison Secretary scored the best while Assets/Logistics Secretary and Honorary Finance Secretary had the lowest median.

3.4 Recommendations for 2nd study

The results in the first study indicates that the variables are both not independent nor have an internally consistent definition. Hence, a peer evaluated survey will not add clarity nor insight to the research. Therefore, in the next phase of the study, the team then conducted a series of semi-structured, in-depth interviews to:

● Scope and define specific skills student leaders utilize during their term of service.
● Identify the general attribute driving student leader's performance.
● Describe the Graduate Outcomes more comprehensively.

Based on the research analysis, the team decided to interview the top two performing roles in study 1 (the President and the Internal Relations/Liaison Director) and the bottom two performing roles (Honorary Finance Secretary and Assets/Logistics Director) across CBds and Co-Curricular Activities (CCAs) groups and these interviews were conducted with a small convenient sample of 6 to 8 leaders.

4. Study 2: Research Design

There were five research questions identified and 8 students were selected through convenience sampling for interviews, to identify similarities of different roles at different levels. We interviewed leaders from both CBd and CCA groups. The four roles we identified are Internal Communications/Liaison Director and President which are the best performing roles, and Assets/Logistics Director and Honorary Financial Secretary which are the worst performing roles. The interview questions (Kvale,

1994) helped as guiding questions for the interviewer and a responsive semi-structured interview design was used.

5. Interview Results

The team went through each set of interview notes, pulling out skills as mentioned by candidates. These skills were written out, and identical skills were grouped together. The first section of the interview results will aim to map out what skills were perceived to have been developed. As part of the interview also involved mapping these skills to outcomes, the first section will attempt to map out the most salient skills to outcomes mentioned by the interviewees. The second section will aim to discuss the process of skills development from their student leadership experience. The skills that were identified were:

1. **Organizational Skills** (Archer & Davison, 2008): Rearranging tasks or information to attain objectives

Organizing skills refers to student leaders being able to rearrange task or information to attain objective. Respondents often note that they are usually involved in multiple processes and task, with each process having different administrative procedures and requirement. They often need to be aware of such administrative procedure for them to achieve their organization goals (e.g. conducting of events, distribution of resources etc.). At times, respondents would feel overwhelmed with such requirements. To fulfill such administrative requirement, respondents would usually develop organizational skills and strategies for them to keep track of administrative process.

2. **Prioritization** (Hager & Holland, 2007): Putting or acting on specific tasks or resources based on their importance or urgency

Prioritization refer to the ranking of task or issues based on importance or urgency. Respondents often note that they are faced with competing interest or concerns from various stakeholders (within respondent's team, management committee, or school offices). For some respondents, prioritization is usually required for them to carry out their function and task. Respondents often will try to objectively compare and assess interest against one another before making a decision to prioritize one concern over another. Some respondent will establish a standard or criteria to determine importance and urgency.

3. **Negotiation** (Mallough & Kleiner, 2001): Discussion with the aim of reaching an agreement

Negotiation skills refers to respondents' ability to achieve agreement between parties through discussions. Due to competing interest between parties, respondents often that they frequently engage in negotiations to achieve consensus or agreements between parties. Negotiation skills, as understood by respondents, usually mean a need of communicating respondent's interest to other parties. This would usually involve

respondents attempting to persuade or influence other parties to change their position. Also, respondents highlighted that it is necessary for them to clearly identify the organization's interest and objective for effective negotiation. Negotiation skills would thus involve the ability to safeguard an organization interest while seeking for consensus with other parties.

4. **Networking** (McArdle, Waters, Briscoe, & Hall, 2007): Meeting individuals or groups in a formal setting in order to establish mutually beneficial relationships

Some respondents felt the opportunity to organize events had allowed them to develop socialization and networking skills. Learning of networking skills had helped some respondent to become more confident and comfortable in networking sessions. However, it should be noted that not all respondent shared such sentiments.

5. **Presentation** (Moore & Morton, 2017): Showing others an idea or an outcome for them to scrutinize or consider, typically in a formal setting

Presentation skills refers to the ability of respondents to communicate their organizations' opinion, ideas and position. Some respondents mentioned that they have improved their public speaking ability as they are required to regularly engage in public speaking at formal events with a large audience. Respondents had mentioned that significant challenges being faced by the organization were usually resolved by a group of student leaders. The ability for respondents to communicate and cooperate within a team is often salient when respondents highlight how they managed to resolve challenges.

6. **Tactfulness**(Moore & Morton, 2017): Communicating with sensitivity to others when dealing with difficult issues

Many respondents mentioned that when conveying undesirable news or opinion, there was a need to sensitive to other party opinion, interest and feelings. Respondents often developed an ability to convey such messages in a manner that was more palatable and acceptable for others.

7. **Empathy** (Grant & Kinman, 2013): Understanding the position and opinion of other individuals

Many respondents highlighted that they have developed empathy. Empathy, as defined by respondents, were found to have 2 aspects. Firstly, empathy was viewed by some respondents as an ability to understand the emotions and feelings of another individual.

Secondly, empathy was also viewed by respondents as the identification of interest and concerns by other parties. This usually involves the ability to view issues and problem from stakeholders' perspectives.

8. **Resource management** (Bridgstock, 2009): Dealing with assets and resources such as finance or logistics

Resource management was a skill often developed by respondents whose primary role involves the allocation of resources. These respondents often allocate resources on principles such as "fairness" as well as seeking for the maximization of organization benefit and utility.
Resource management is not limited to tangible resources such as assets and finances. Other forms of resources that respondents learned to manage includes manpower and effort.

9. **Expectation management** (Johns & Saks, 2001): Dealing with expectations that others have of you, your work, or your group

To cope with the demands and interest of multiple stakeholders on various issues, respondents were found to develop skills to manage expectations from other individuals. This would include the communicating of realistic expectation to other parties, lowering of expectation as well as rejecting the request or demands made by other parties.

10. **Power management** (Bouquet & Birkinshaw, 2008): Dealing with people in positions of power over the respondent

Some respondents have mentioned that they faced more difficulty in managing expectation of individuals who are possess more power as compared the respondents. Power, in this research, is not limited to legitimate power / authority. Individuals that possess more experience are also seen to possess greater power by respondents. Respondents were found to develop skills in managing differences of power. One way of coping differences in power is through building or managing relations with the individual that possess power.

11. **Conflict management** (Thomas, 1992): Dealing with discussions that are emotionally charged

While respondents have highlighted that if they are unable to resolve or manage the competing interest between parties of disagreement, disagreements can potentially escalate to situations of emotionally charged conflict. In such situations, respondents mentioned that they would need to cope with hostile emotions and threat from other individuals. Respondents mentioned that they had developed skills in managing the emotions of others to deescalate such conflicts, or provide systems for communication without exciting emotions

Situation of conflict was found to potentially create stress and anxiety for student leaders.

Because the latter four skills require more than one skill and are not skills in themselves, the team decided to use these management issues as a way to map out the

eight aforementioned skills. The way these skills are plotted out are depicted in the following page:
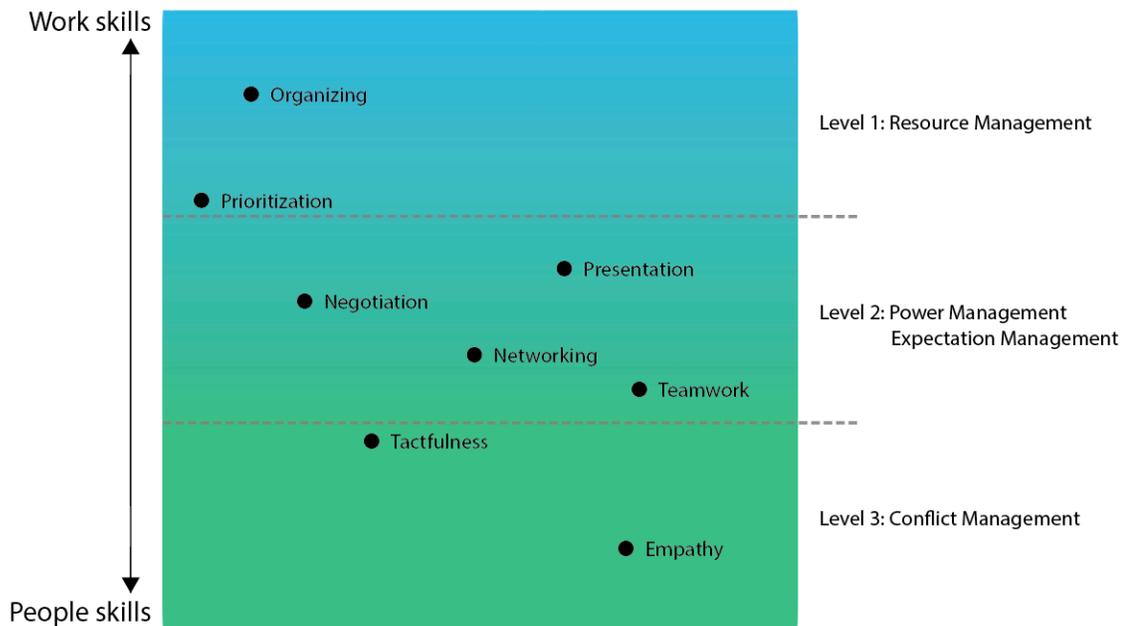
Each level (on the right) corresponds to a management issue. They were arranged in order of difficulty - for instance, resource management dealt purely with resources excluding people; power and expectation management dealt with people working together or collaborating; finally, Level 3 corresponds to dealing with emotional people in discussions, which requires more than simply working with a few people of different backgrounds.

After that, each skill was mapped out onto a grid less matrix. This was to account for the fact that all skills are to some extent needed for all levels of management issues, while allowing for the more salient skills to emerge. For example, in Level 2, expectation management requires *more* of negotiation than tactfulness, even though tactfulness would be a useful skill - skills on Level 2 are in some sense hybrid, combining a mix of work-related skills and people skills. The skills are not arranged in any particular manner across the grid as there is no horizontal axis.

5.2 What is the process of skills development?

The process of skills development of a student leader is very consistent with the SECI Model (Rice & Rice, 2005) which attempts to explain learning and knowledge creation. While SECI is designed for individuals, organizations have adopted the model for organizational knowledge management. The model explains the production, evolution, and transformation of knowledge as the individual goes through the socialization, externalization, combination, and internalization process. By converting tacit knowledge to explicit knowledge and vice-versa, knowledge can be retained and created.

Phase 1: Selection

There is a self-selection effect of student leaders. They possess certain skills and traits that increase their chances of being elected or recruited into the team. All student leaders experienced some form of campaigning and networking activities to increase support or legitimacy for the role they took on.

Phase 2: Induction

There are 2 important processes in this phase, trainings provided by the organization and handovers from predecessors of the role. Most student organizations conduct their handover socially. Little made references to the handover documents passed on to them. Most handover processes are conducted socially without documentation. Respondents also indicated their preference of a mentor as compared to a handover document.

This, however, requires the predecessor and successor to have a neutral or positive relationship. We have not gathered sufficient evidence that this can work in the event of a hostile succession. This process models the socialization phase of the SECI model. The transfer of tacit knowledge between two individuals is best done socially.

Phase 3: Execution

Many respondents stated that they learn most from the job itself. Adopting the learn-by-doing approach, student leaders shared that they familiarize themselves with routines and are becoming more proficient in their tasks gradually. There is consensus that respondents "get used" to their role before summer, spanning between three and four months into their role. This is more distinct for individuals who described that their roles are more administrative than social.

This process models the externalization phase of the SECI model where individuals apply their knowledge to the job. This aims to transfer the individual's tacit knowledge into explicit knowledge. One way to improve learning is to adopt quarterly reviews to ensure that the individual learns from the experience. This is supported by our interviews as none of the participants reflected about their personal development prior to the interview.

Phase 4: Problem-Solving

Only some respondents reported their experience of addressing problems beyond their job scope. Nevertheless, all respondent who reported such a phenomena shows indications of the use and combination of different skills to develop a solution. Both task specific and people skills were demonstrated for participants who indicated the occurrence of such an event.

This models the combination phase of the SECI model where individuals use interdisciplinary knowledge to solve a problem. This requires the customization and combination of different skills and experiences. This is evident during negotiations when student leaders claimed to have used different skills such as prioritization, empathy, and presentation to achieve their objectives.

Phase 5: Consolidation & Application

There is a trend for the applicability of skills. Respondents indicated that work-related skills are more applicable during their internships and they were not able to apply people-related skills during their internships. This is largely due to the difference in autonomy and power in the environment they operate in. Respondents also reported the application of hybrid skills to manage expectations. These skills include negotiation, networking, presentation, and teamwork. These skills learned from student leadership is useful in internships. From this, we note that there is a knowledge retention deficit from both the organization and individual. Skills learned from student roles has limited immediate applicability to internships.

6. Recommendations

In this study, we have identified and defined skills that students claimed to have learned from their experiences as student leaders. Nevertheless, there is more that can be done to improve the quality of student leadership and enhance the learning experience of students. Comparing the graduate outcomes and the skills identified by the interview, we suggest to have subsections within the graduate outcomes. Alternatively, graduate outcomes can be redefined and tailored to the skills learned by student leaders based on bottom-up feedback from student leaders. This will present a more accurate depiction of skills used and developed as students undergo the SMU student-life experience.

Next, there is consensus from the interview responses, showing that extended and guided mentorship procedures are preferred as compared to handover documents. This is consistent to the SECI Model, stating that tacit knowledge transfer is best done by social processes.

Additionally, there is a call for specific formal trainings to be provided to all student leaders on an optional basis. Interviewees shared that they are unable to host trainings at a specific level due to the limited interest. However, by expanding the target audience to include all student leaders on an opt-out basis, the school can achieve the required scale to host formal skill trainings. Alternatively, the school can leverage on existing student interest groups to conduct skill trainings to improve the performance of student leaders. SMU can also leverage on the annual Leadership Symposium to develop skills identified in this research. These skills can then be reflected in the student's CCA record, acknowledging their development in the course of their services to the CCA and school.

Finally, we propose to conduct a study on leaders who have graduated and gotten a job. From the interviews, participants shared that skills they've developed from student leadership had limited applicability during their internship. This is largely the result of the lack of responsibility and autonomy given to interns in the private sector. However, this might not reflect the applicability of these skills as a full-time employee. Hence, another study should be conducted on student leaders who has recently graduated to assess the applicability of these skills as an entry-level employee.

7. Limitations

Firstly, the quantitative study is limited by the definitions of the graduate outcomes. (Steckler, McLeroy, Goodman, Bird, & McCormick, 1992) From the results section, we concluded that the definitions of the graduate outcome are purposed as a marketing tool rather than a research framework. Hence, we have recommended and conducted a follow up study to identify specific skills developed by student leaders.
Next, the interviews are sampled based on quota sampling methods and might not be reflective of the skills developed by the student population. (Coughlan, Cronin, & Ryan, 2009) Furthermore, many of the identified interviewees did not respond out our invitation. This resulted in the relatively skewed result of the interview, and hence we are unable to compare and identify the general factor as mentioned. Finally, this reflects the general flaw of interviews. We have no way to accurately validate the claims of the interviewees. This is because it will be resourcefully intensive to conduct a multidimensional interview to assess one subject. Hence, we must work with the assumption that the interviewee is truthful with their claims.

8. Conclusion

Student leadership can develop employability skills if the institution places sufficient emphasis on specific skills it intends to develop from these leaders. While the SMU Graduate Outcome is a good marketing tool, it inaccurately describes the skills developed by student leaders. Hence, we are unable to use its definitions for research purposes to derive purposeful conclusions. Nevertheless, interviews with student leaders gave us clarity in the skills they developed and applied over their term of service. This allowed us to categorize skills into three main categories; task-based, relationship-focused, and hybrid skills. This method of developing and defining skills increases the accuracy of its definition due to the bottom-up, user-centric approach. Hence, improving its applicability for future quantitative research.

We have also observed that interviews from student leaders reported that their development during their term of service mirrors the SECI model. This has implications on handover processes and trainings for student leaders. Due to the preference of a more social process for handovers, we suggest for the elections fever to be brought earlier into their term to facilitate and mandate effective handovers and on-the-job trainings.

Formal trainings for specific skills identified in this study can be provided to all student leaders. Various platforms can be used. This includes but are not limited to skills-based CCAs, the annual leadership symposium, and additional workshops hosted throughout the year. Skills training can also be tailored to the general phase of development for the student leaders based on the SECI model. Skills developed from these trainings can then be included into the student's CCA records.

Finally, the applicability of skills developed during student leadership cannot be observed while students are still undergraduates. This is due to their role as an intern as they are given little job autonomy and formal responsibilities. The research can be better supplemented by interviewing graduates who are already in the workforce, and had served as a student leader when they are undergraduates.

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Estimating Sample Sizes in a Google Classroom: A Case of Global Collaborative STEM Education

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Abstract

Education is a perpetually evolving field, especially with the rapid advancement of technology and the uprising of the globalization phenomenon, and thus, it can be argued that global education is absolutely necessary. Global collaborative STEM Education (GCSE) is a subset of global education that is rarely discussed in the literature. Specifically, this paper focuses on the teacher mentorship of the GCSE aspect by showcasing a practical example occurring in the backdrop of a mini-project between two classrooms in different parts of the world regarding estimation of sample sizes. Chromebooks—laptops associated with Google that utilizes Google Chrome as its main web browser—were used as a technology tool to access the online application, Google Classroom. This virtual classroom application served as the digital medium for students to post up assignments and engage in communication. Perceptions in participating in this global collaborative STEM project were positive, as participating teachers expressed that it was a pleasant departure from what they normally did in their classroom.

Keywords: global education, global collaborative stem education, teacher mentorship

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Education is a perpetually evolving field, especially with the rapid advancement of technology and the uprising of the globalization phenomenon (Crawford & Kirby, 2008). Thus, it can be argued that global education is absolutely necessary. Lindsay and Davis (2013) assert that "global competition for jobs means that today's students must not only be well-educated, creative problem solvers but they must also be equipped to collaborate globally" (p. 3). This begs the question, "How can educators be better prepared to implement global education for their students?" This paper showcases a practical example of teacher mentorship occurring in the backdrop of a *global collaborative STEM education* (GCSE) mini-project between two classrooms in different parts of the world regarding estimation of sample sizes. Particularly, attention will be placed on the teacher mentorship aspect of this project that occurred with one of the teachers. First, a brief review of the literature was conducted regarding theories and concepts that were used to frame the project and this paper. Then, context of the GCSE project and the mentorship experience will be discussed. Finally, the paper concludes with the outcomes and evaluations of the project in the perspective of the mentee involved.

Review of the Literature

This section is divided into two parts: (1) the mentorship process and (2) the global education aspect. First, the theory of *situated learning* is discussed, providing context on how the situative perspective is used as an underlying theme for the mentorship process with the teacher partners from different locations. Then, for the global education piece, the concept of community of inquiry is examined and how the orchestration of its three main constructs—social presence, cognitive presence, and teacher presence—may be applied with the P21 (Partnership for 21st Century Skills) framework on preparing students with the necessary skillset to become successful contributors in a 21st century society.

Teacher Mentorship

This project involved a teacher mentor (henceforth, mentor), familiar and experienced with GCSE, and teachers whose classrooms participated in the project. The mentor and one of the teachers (henceforth, mentee) work in the same school in Pullman, Washington in the United States (US), while the other participating teacher works in an international school in Tokyo, Japan. The extent of the mentor's duties was to oversee the project and provide support and mentorship to the participating teacher in the US. Although participating teachers in this project were experienced, this was their first encounter with GCSE in that they never before had their respective classrooms work collaboratively with another from overseas. Nonetheless, both teachers expressed willingness to participate in this collaborative activity with the understanding that they would be provided help and guidance throughout the project. Thus, in the context of this activity, mentorship refers to the overall learning experience gleaned in the transfer of knowledge and skills from mentor to mentee (Mathur, Gehrke, & Kim, 2012).

Unfortunately, there is a gap in the research regarding mentorship for GCSE, with many studies focusing mainly on mentorship for each STEM discipline separately, general global education, mentorship programs for first-year or novice teachers, or teacher attrition prevention (Chiu, Price, Ovrahim, & Ed, 2015; English, 2017;

Ingersoll & Smith, 2004; Rhodes & Beneicke, 2002; Smith & Ingersoll, 2004). This dearth in the research literature is understandable as GCSE, in general, is an emerging field that needs to be further explored. In line with this inquiry, a framework for this mentorship is proposed using principles and constructs outlined in the theory of situated learning (Brown, Collins, & Duguld, 1988). From the situative perspective, learning is contingent upon the *situation* in which a person learns, as opposed to just *what* or *how* they learn (Peressini, Borko, Romagnano, Knuth, & Willis, 2004). Consequently, teacher learning in the context of implementing a GCSE activity occurs situationally, as interactions between systems such as technology and cooperative classroom exchange may inadvertently affect future learning outcomes. In other words, there is a constant refinement in the mentorship process, as the guidance provided comes from a theoretical perspective, while the practical application may have a completely different result.

The perspective provided by Greeno and colleagues (1998) supports this argument. They assert that situated learning shifts the focus from behavioral and cognitive perspectives to interactions between systems. The teachers participating in this study not only gleaned information from the theoretical perspectives that were provided to them regarding GCSE, but also learned the subtle nuances that came along with undergoing the entire process. For instance, at the conclusion of the GCSE project, the teacher partners from both locations not only learned about different flora from another region of the world, but also subsequently learned how to effectively use the online application, Google Classroom, as a global collaborative tool. In this case, learning occurred in multiple situations—collaboration between mentor and mentee and interaction between teachers themselves with technology acting as an integrated system (Cobb & Bowers, 2014).

Wilson and Myers (2000) provide another perspective for situated learning theory. They argue that a fundamental aspect of learning takes place in communities of authentic practice instead of individual occurrences. In other words, learning involves interactions within social groups. Because the teachers were in two different areas, the delivery mode of mentorship occurred differently between them. Communication with the teacher in the US occurred primarily in a face-to-face setting, while communication with the teacher in Japan communicated via video conference. E-mail messaging was also another form of asynchronous communication and collaboration between all parties involved. In a sense, a mini-community of authentic practice where learning took place was formed, while participating teachers engaged their respective students in the larger community of practice for this GCSE project.

Global Education

As noted earlier, GSCE is an emerging field in the realm of education, but generally speaking, global education is nothing new (Becker, 1982). In recent years, however, many educational researchers have promoted the need for teaching students 21st century skills (AACTE & P21, 2010). The Partnership for 21st Century Skills (P21) created a framework that delineated student outcomes necessary for the 21st century— life and career skills; learning and innovation skills; learning, media, and technology skills; and core subjects and 21st century themes. These outcomes, along with the necessary teacher professional development, pave the way for perpetuating the implementation of global collaborative STEM education in current classrooms. This

particular project was also supported by the underlying themes found in the concept of a *community of inquiry* (CoI). Unfortunately, similar to the theory of situated learning, there is scant research on CoI and its applications in the K-12 educational setting, as most studies focus on levels of higher education (e.g., Garrison & Arbaugh, 2007; Garrison & Kanuka, 2004; Rourke & Kanuka, 2009). However, this paper argues that such a framework may be applied in this particular context, as well. In the concept of CoI established by Garrison, Anderson, and Archer (2000), learning occurs in interactions between students and teacher(s) within the context of digital technologies.

Essentially, there are three core elements or constructs that comprise the CoI—cognitive presence, social presence, and teacher presence, each of which were apparent during this global collaborative project (Garrison et al., 2000). Cognitive presence refers to the ability of participants in the learning environment—in this case, a virtual learning environment—to engage in intellectual experiences via sustained communication. Social presence refers to the ability of the participants to effectively communicate their genuine personalities and humanness within the online setting. And finally, teaching presence refers to the role of the instructor and his or her responsibilities in guiding instruction within the online learning environment (Rourke & Kanuka, 2009). These defined constructs suggest and inform the existence of multiple CoIs within the realm of this GCSE project. Context of the project is provided in more detail in the sections that follow.

Project Context

A seventh-grade middle school science classroom in Pullman, Washington in the US and a private international school classroom in Tokyo, Japan participated in this GCSE project. The mentee who participated in this GCSE project teaches multi-grade level science content. She teaches one section of sixth-grade physical science, two sections of seventh-grade life science, and one section of eighth-grade earth science. One of the seventh-grade classrooms was the participating class for this project. The participating teacher from Japan teaches eighth-grade mathematics.

The US middle school has a population of approximately 650 students and is situated in a community that is fairly well-educated, as it is located in a college town with a local university at the heart of the city. The university draws students, faculty, and other employees from around the globe, and as such, many students in the middle school have parents who are graduate students or university faculty themselves. Meanwhile, the participating classroom in Japan was an eighth-grade middle level classroom in a private international school that comprises students from K-12. Located in an urban area in Tokyo, the international school serves a diverse population of middle to high-class students.

Chromebooks—laptops associated with Google that utilizes Google Chrome as its main web browser—were used as a technology tool to access the online application, Google Classroom. This application was utilized as the virtual classroom that served as the digital medium to post up assignments and engage in communication. All participating teachers and students had Google accounts as part of their respective school networks, which made it convenient to be part of the virtual classroom. Furthermore, every student had access to a Chromebook.

The GCSE project was a week-long lesson which involved students participating in an assignment where they would learn how real-life scientists estimate population sizes of local flora. Students in their respective classrooms modeled how scientists do this by randomly drawing pieces of paper that represented organism locations found in a grid worksheet (see Appendix B for accompanying grid). Then, they would fill out responses in an accompanying worksheet where students would predict population sizes from these small sample sizes (see Appendix A for response worksheet). This worksheet was completed digitally in Google Classroom by each student, and students from each class were paired together with another student from the foreign classroom. Google Classroom was then used a medium to exchange worksheets with respective partners to provide feedback on responses. Additionally, students were also required to conduct research regarding local flora and present it to their foreign counterparts.

Mentorship Experience

Planning of this project between the mentor and mentee occurred one year before the actual execution of the project. Although the initial meeting took place before the execution of the project, meetings between both individuals became more frequent as the timeframe came closer to the actual project date. Both agreed to work on a project that was already a part of the mentee's scope and sequence of the curriculum, so as to not disrupt the flow of her lessons. The teacher from Japan came into the project after a call had been put out by the mentor's colleague who teaches in the same international school in Tokyo. During the mentorship process, the mentee agreed to first present the idea to her teacher partner from Japan before carrying out the project. This sense of autonomy given to the mentee aided in the seamless transitions of the project, as the mentor opted to be more a guide-on-the-side rather than taking a more authoritative stance.

Communication was also integral in the mentorship process before, during, and after the GCSE project. E-mail messaging was used most frequently, but weekly face-to-face meetings prior to project execution were also held. In one of the meetings, a global education continuum identified by Nugent et al. (2015) was presented to the mentee by the mentor, and both agreed that this project would fit into the limited collaboration component of the continuum (see Figure 1). Although there was some form of data sharing and indirect communication between students, there was not any form of direct real-time communication via video conference or chat sessions.
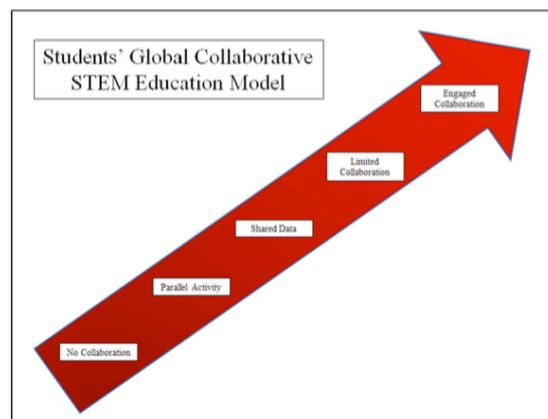
Figure 1. Global Collaborative STEM Education Model

Due to the overwhelming obstacle of different time zones, the mentee decided that doing some form of synchronous communication over video conference would be impractical. With Japan being sixteen hours ahead of Washington, she expressed that the idea of doing a video conference between students would not be efficient, which explains the rationale behind using Google Classroom. During the week of the project, the mentor and mentee met daily to discuss what did or did not work for that particular day. And finally, one more face-to-face meeting was held to discuss and evaluate the overall outcomes of the GCSE project.

Project Outcomes and Evaluation

This GCSE project served two purposes: (1) to provide an opportunity for local students to work collaboratively with foreign students in determining how scientists estimate and predict population sizes of organisms, and (2) to produce global collaborative classrooms by mentoring a local teacher. While students found learning about different sampling techniques to be enjoyable, being able to read and provide feedback on their foreign partners' papers was perhaps the most rewarding aspect of the project. Teachers of both classrooms additionally reported that students found it interesting to learn about the different types of flora from a different part of the world, as well.

Google Classroom made the process of participating in the project more efficient and convenient as everyone was already familiar with the digital classroom interface and how it worked. Though all students have used Google classroom in the past, this was their first experience providing feedback on student work from another country. The mentee commented on how this particular aspect of the project enticed the students to participate in the project because they were looking forward to communicate with foreign students. However, the feature to post on the Google classroom newsfeed had to be disabled to effectively control the magnitude and content of messages that were being posted by the students. Thus, students were only permitted to comment on work submitted as a Google document into the online classroom application. The "edit document" feature was disable for students, as well, to avoid deletion or modifications being made to final work documents.

As a group, respective classrooms also did some research regarding some flora specifically found in their region. Both participating classrooms were able to create PowerPoint presentations of their regional flora and uploaded them onto the Google

classroom platform. Then, teachers were able to showcase these presentations to their respective classes. Initially, this part of the project was intended to be completed individually by all students, but both teachers found that idea to be redundant and unnecessary, especially since only three types of flora were being researched.

All in all, perceptions in participating in this global collaborative STEM project were positive, as both teachers expressed that it was a pleasant departure from what they normally did in their classroom. More notably, the mentee expressed that having the support of a mentor aided in the execution of the project in that she felt supported with her ideas. She also mentioned that learning more about GCSE made her feel more confident in carrying out a similar project for future lessons. It is also interesting to note that even though the teacher from Japan was a math teacher, she mentioned that being able to do a more science-oriented activity motivated her to collaborate with her local science teacher counterparts at her school. Thus, even though the initial intent of this project was to bridge foreign classrooms, efforts were made to collaborate locally, as well.

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Appendix A

Estimating Population Size Response Worksheet

Estimating Population Size   Name: _____
Technique 1: Random Sampling   Date: _____ Period: _____

Scientists cannot possibly count every organism in a population. One way to estimate the size of a population is to collect data by taking random samples. In this activity, you will look at how data obtained from random sampling compare with data obtained by an actual count.

The green grid poster represents a meadow measuring 10 m by 5 m. Each grid segment is 1m x 1m. Each sticker represents one organism.

Grid segment	⭐ Idaho Fescue # number	🙂 Dandelion # number	🌸 Snowberry Bush # number
Total # of each species			
Average (divide total by 5)			
Total # of plants in the meadow (multiply average by 50)			

1. A lazy ecologist collects data from the same field, but he stops just on the side of the road and just counts the 5 segments near the road. These 5 segments are located at 1 A-E. When he submits his report, how many dandelions will he estimate are in the field? Suggest a reason why his estimation differs from your estimation.

2.   Population Sampling is usually more effective when the population has an even dispersion pattern. Clumped dispersion patterns are the least effective. Explain why this would be the case.

3.   Describe how you would use Sampling to determine the population of dandelions in your yard.

Appendix B

Grid Worksheet Modeling Plant Organism Locations

The Success-Factors and Boundaries of External Consultancy Processes to Universities Regarding Organizational Development Processes

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Abstract

Universities today are increasingly required to deal with economic, economic and strategic issues and challenges from the inside and outside. In this context, external consulting firms are often consulted on the university side. But not all of these external consulting processes are as successful as hoped. The aim of this work is to show what general conditions of success and obstacles in the context of external consulting processes in the field of higher education are important for both university members and external university advisors by answering the question: What are the critical conditions for success and obstacles to organizational development processes in universities conducted by external consulting firms both on the university and the consulting side? From this, recommendations for action with regard to the implementation of external counseling processes in higher education have been developed. They were created in order to create more awareness on the university as well as on the consultant side and to increase the general chances of success of externally accompanied organizational change projects.

Keywords: Universities, organizational development, external consulting, conditions of success, obstacles

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Introduction

External consulting in higher education

With the advancing professionalization of higher education and the continuing economic and strategic challenges facing universities, more and more tools, methods and concepts have entered the scientific community in the past few years come from the economy. What was considered an exception a few years ago is now common practice in higher education and science, including the use of external know-how.

This is also a consequence of the introduction in recent years of new public management approaches in the area of higher education, in consequence of which scientific organizations and educational institutions are considered from the standpoints of effectiveness, efficiency and cost-performance characteristics, as previously only the private sector was known.

Although the use of advisory services in the private sector has become the norm and, as a result, the subject of scientific research since the end of the 19th century, this does not apply equally to the field of science education and higher education institutions (Altvater 2007). For a long time, universities have not opened up to this development. At the end of the day, this was partly due to the prevailing self-image or self-image of the universities, which in turn understood themselves to be experts, so that for a long time the possibility of accepting help from outside their own organizational boundaries was not taken into consideration (Ibid. 2007). However, this view on the part of universities has changed in recent years. More and more often, help is being sought from consulting firms with specific knowledge of higher education (Ibid. 2007). In this context, one speaks of Expert-Know-How or Process support Know-How.

Functions of external consulting in higher education

The range of topics within which external consultation in the field of higher education nowadays takes place is multifaceted. The thematic spectrum includes, for example, the Bologna Reform, a new university governance, university access, professorships, excellence initiative and fundraising, digitization, new public management, the Higher Education Pact 2020 and its manifold consequences for universities. These consulting projects are often not present in the public perception because they are relatively small in scope (Stratmann 2014). This is offset by the larger projects with a higher level of public attention. These include university development planning, strategic support in the context of university mergers, projects in the field of quality management and quality development, reorganization of the university administration or partial areas as well as the introduction of campus and financial management software. This also involves a reorganization of the structure and sequence of structural control and performance processes in the university (Ibid. 2014). In terms of content, such advisory processes by external consultants are not just an analysis of existing structures. Rather, this is about the preparation of recommendations and modernization concepts by the external consultants and the advisory support during the implementation (Altvater 2007) The basic function of organizational consulting in higher education is the support of the university management for decision-making, the absorption of uncertainty, the acquisition of legitimacy (and in the external

description of the organization in order to increase its reflection (Pasternack 2012 / Stratmann 2014).

External consulting generally fulfills two functions in this context. On the one hand, technical know-how - expert knowledge of the external consultancy - of the higher education organizations is made available (Von Ameln 2015). This can be used in a variety of ways in the context of change processes, be it to offer, for example, alternative observation perspectives or to moderate conflicts (Ibid. 2015). On the other hand, external consultants act as process facilitators in change processes in order to shape them in an equity-oriented manner and to ensure that these change processes can be implemented in the sense of an operational action reality. Unlike in the economic sector, where organizations are characterized by clear structures and responsibilities, and changes in the hierarchy can be implemented in a top-down manner by management staff, the situation in higher education is very different. Universities, whether universities or polytechnics are highly social, complex organizations ("expert organizations") with their subsystems consisting of university management, faculties, deaneries, departments, committees and staff councils, as well as individual scientists and the student body. Each department persecutes and represents its own interests in the overall university system. First of all, this must be considered fundamentally when it comes to processes of change in higher education institutions, which are externally assisted, since advice cannot be given on the modular principle, but must be carried out individually. A few years ago Moldaschl cited the private sector as saying "that at least 70% of all external consultancy projects fail" (Moldaschl 2009). For the higher education sector, there are no comparative values to date. It is therefore not surprising that even in higher education not all externally accompanied change processes are as successful as desired. Against this background, in the context of an empirical study (Master's thesis MBA study course of Science and Education Management of Carl von Ossietzky University Oldenburg, Germany / In the period from September 2017 to March 2018) three experienced university advisors and three university members at university level were interviewed anonymously, on the one hand to gain insight into the reasons for the use of external consultants in university change processes; On the other hand, to get to know the expectations of both sides towards each other as well as to derive possible conditions for success and obstacles to externally accompanied change processes in universities.

Findings

Basic expectations of both sides

The research has shown that external guidance in higher education is an extremely personal process, both on the university and on the consultant side. Mutual trust, openness, and transparency form the essential basis from which the probability of success of a consulting process essentially depends. If there is no common basis of trust, if the personal chemistry between the two sides does not harmonize, the respective consulting process is almost doomed, no matter how well the consultant may be technically competent.

First and foremost, the clarification of the order and objectives, clarification of methods, the communication plan and a clearly articulated commitment to the consultation process in the university are of utmost importance for both parties.

External consultants who try to advance the respective consultation process with best practice suggestions and a rigid insistence on the project plan will quickly reach their limits. What is needed are not rigid project designs, but flexibility and situational adaptability to sudden situations such as conflicts, doubts or resistance or even added project goals during a consulting process. It is therefore positive that both the surveyed members of the university and the external consultants interviewed attach great importance to close, dialogical cooperation right from the start. This is certainly not the case in all counseling processes in higher education institutions, but in the present study, this was very clear among the respondents.

The greater the personal basis of trust between university employers and external consultants, the higher the probability of success of a change process. This basis of trust is made up of all of the surveyed members of the university with regard to their personal qualifications, their academic qualifications and their academic experience in the field of higher education. In addition, binding, non-changing contact persons for the course of the consultation process are valued by both sides.

Without sufficient university resources no sustainability will be given

In the survey, the surveyed external university advisers criticized the university's resources, which are not available in the adequate and necessary form in every counseling process. Be it, for example, binding contact persons for the external consultants means of communication or the time resources of the persons involved in higher education, most of whom work full-time at the university. For them, participating in a counseling process means sometimes immense extra time. When university managements buy external advice, they should take these issues into account, as long as they are seriously interested in successfully achieving the goals and implementing an externally accompanied change process. After all, it should be borne and lived in retrospect by all stakeholders involved in higher education.

Clear role definitions and task distribution

From the consultant's point of view, it is the task of the university management to transparently present to their own organization when and to what extent external consultancy is engaged. This is important because the consulting organization or subsystem needs to be consulted or made available for a consultancy project to be successful. In addition, there must be a clear allocation of roles, tasks, and rights between university management and external consultants, but also between university management and internal university stakeholders. If this is not the case, many change projects are already beginning to fail. Change processes are processes in which all relevant participants should be invited to participate because only the basis for an acceptance towards the external consultants in the universities as well as for the planned changes is created. Power games and secret agreements will always only do the opposite.

Inadequate communication channels into the university

Internal communication in higher education institutions is if not the worst and most crucial, issue in externally accompanied change processes. The communicative involvement of all relevant university-based stakeholders, such as individuals,

committees, and personnel councils is always critical to the success of the consultancy processes. Communication in different ways not only serves to inform stakeholders, but also provides the opportunity to provide important feedback during a counseling process, and more importantly, invites participation. Targeted communication with all participants invites them to participate actively. This creates appreciation among stakeholders, which in turn is the basis of acceptance for the need and conduct of a counseling process, as well as its outcomes. Especially the communication security in the deaneries and from there deeper into the faculties inside, works at most only satisfactorily, if at all. From a university perspective as well as from a consultant's point of view, much of the information is lost here, that is to say, information is, from the perspective of the university management, simply not carried further into the subsystems of the university for reasons that cannot be explained. This may be related to the size of the respective university and its subs-ystems, but does not explain why this is so. Loss of information or the fact that relevant information simply does not reach affected persons is a knock-out criterion not only for change processes in universities but for all work in universities in general. Certainly, this also has something to do with the issue of "continuity in office", which applies precisely to deans, but equally to university leaders. It is probably more a question of the individual professional view of the position and the tasks involved. Scientists who suddenly take on leadership and management responsibilities for their field of work but who are by nature "only" scientists, but not administrators, may find it hard at this point. However, this seems to be changing more and more with the increasing attractiveness of senior management positions in higher education administration, with more of an on-the-job, science-related continuing education program contributing to higher education management. Nonetheless, there is a definite need for action on the part of the universities to find adequate solutions that guarantee targeted communication flows within the organization of higher education.

Change must increasingly be lived as part of higher education culture

On the subject of higher education culture, it should be noted that even today, universities still have a relatively high level of professionalism and cultivate a corresponding self-image. There is a growing need to promote cultural openness to external counseling in higher education as a whole or parts of it. In change, processes depend on the organizational climate of the university, how its stakeholders meet each other and whether a consultation process strengthens or pushes the university organization to its limits. It is therefore important, as already mentioned, that higher education institutions can estimate the type and level of advice and counseling clientele that best suits their institution. The prerequisite for this, however, is that the client, in this case, the university management, is honest enough with himself to know what kind of university culture prevails in their ranks. In relation to the conception of a change process, the respective university culture also plays a role, as it depends on how strongly such a change process must be structured in order to avoid risks and to facilitate a project's success. Along with this, a higher level of self-reflection by higher education institutions towards their own organizations has been clearly expressed by both members of the academic community and external consultants. Reflection is a clear management task.

Conclusion

With regard to the course of externally accompanied counseling processes, the results show how important it is to clarify the objectives at the university level and to create a common understanding of the problem before a call for tenders is issued to external consulting firms. Closely related to this is the demand for a higher degree of self-reflection in higher education institutions with regard to a necessary organizational change. However, it depends on the prevailing university culture to what extent this is perceived and maintained as a management task in universities. Furthermore, this study shows that there has to be a general improvement in internal university communication, especially with regard to externally accompanied counseling processes. Communication flows must be made more effective in the depths of the university organization and its subsystems since otherwise the transparency of the cooperation and the acceptance, as well as the participants, will be undermined among the involved stakeholders on the most different hierarchical levels, whereby also the conversion probability of change processes decreases substantially. Lack of clarity about the meaning and purpose of an externally accompanied counseling process in the university organization is ultimately a fault of the commissioning university management, which also applies to the insufficient provision of human, temporal and structural resources. This was stated by both the surveyed university members and the consultants surveyed. Therefore, all interviewed external consultants demand a clear commitment from the commissioning university management to the consultation process with their respective university, in order to form a basis for the common cooperation from the beginning. Thus, on the whole, there are no sensational factors that were identified in the course of the investigation as generally expedient or as inhibiting for external consulting processes in universities. Rather, it is the basic framework conditions and factors that must constantly be the focus of all those involved in the university as well as on the consultant side, when it comes to the successful implementation of externally accompanied counseling processes in the higher education sector.

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Qualitative Research Methods in Social Sciences

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Abstract

Numerous written materials and a wide range of reading collections in social sciences were produced to analyse qualitative research methods in social sciences. Qualitative research refers to research about people's lives through insights of their stories and behavioural patterns. It is usually employed in human field studies and social sciences disciplines, including education, sociology, social work, and communications with an additional examination of organisations, relationships, and social movements. Qualitative research involves an interpretive and natural approach to the world. This means that qualitative researchers study the natural settings and attempt to make sense of, or interpret concepts in terms of the meanings people bring to them. The aim of this paper is to study how people and groups construct meanings, further exploring real life issues through using qualitative research. As an applied research methodology, there is often a greater emphasis on the design and processes of data collection and data analysis. However, the main aim of this paper is to explore more deeply the qualitative research via broader spectrum of critical discussions, specifically by delving into what is unique about qualitative methods and highlighting the features of qualitative methodology. Qualitative research identifies with 'lived experiences' of research participants as the researcher is considered the instrument of data collection and data analysis. Henceforth, the quality of qualitative data depends, to a great extent, on a much deeper and complex layer of methodological skill, cultural sensitivity, and integrity of the researcher, as opposed to the mere technicalities of data collection and data analysis.

Keywords: Research methods, Qualitative research, Social sciences

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Introduction

There are hundreds of books, articles and empirical studies of social sciences researches were written to explain qualitative research methods and to discuss the processes of data collection and data analysis. In order to study how people and groups construct meanings and to explore real life issues, the qualitative research is well known to be employed in human field studies and social sciences disciplines, including education, sociology and social work. With all the strengths and flaws of the qualitative research, the aim of this paper is to contribute to the growing literature of the qualitative research in the human disciplines. Therefore, the main aim of this paper is to review the literature and to discuss more deeply the qualitative research methods by identifying the strengths and general critique mentioned in the literature. Moreover, the purpose is to consider what is unique about qualitative methods and to understand the 'lived experiences' and life stories of the research participants. Qualitative research involves real and interpretive, naturalistic approaches to the world. This means that qualitative researchers study things in their natural settings, attempting to make sense of, or interpret the phenomena in relation to the meanings people bring to them. Therefore, the quality of qualitative data depends to a great extent on the research skill, objectivity, and integrity of the researcher and the extent to which they are trained to be more objective and ethical whilst carrying out fieldwork investigations. Therefore, this paper aims to discuss the implications of considering the researcher as the instrument of data collection and data analysis, as well as to understand the central role in qualitative research of the researcher as the "instrument".

Qualitative Research Methods: Its definitions and importance

Wide range of written materials and social sciences texts about qualitative research were consulted, (e.g., Patton, 2002, 2015; Alase, 2017; Rahman, 2017; Daniel, 2016; Bryman and Burgess, 1994, 1999; Burgess, 1990, 1995; Delamont and Atkinson, 1995), including some that not only outlined the techniques that can be used but guide the researcher to the practicalities of doing this research methodology. Such texts made one duly conscious that:

'Qualitative research has a long and distinguished history in the human disciplines. In sociology, the work of 'Chicago school' in the 1920s and 1930s established the importance of qualitative research for the study of human group life (Denzin and Lincoln, 1998: 1).

Qualitative research methods can refer to research about peoples' lives, lived experience, behaviours, and emotions, as well as the organisational functioning, social movements and cultural phenomena (Rahman, 2017: 103). These are primarily descriptive texts and narrative accounts rather than numerical or statistical analysis.

'It (qualitative research) can refer to research about people's lives, their stories, and behaviour, and it can also be used to examine organisations, relationships, and social movements. Research done in this way produces descriptive data such as people's own spoken or written words or observable behaviour' (Bouma and Atkinson, 1995: 206).

Qualitative methodology allows researchers to apply interpersonal and subjectivity skills to their research's exploratory processes, thus establishing rapport and obtaining detailed and in-depth data. Moreover, a qualitative research approach gives researchers "the best opportunity to understand the innermost deliberation of the 'lived experiences' of research participants" (Alase, 2017: 9). Therefore, this process will enable the researcher to explore the research areas in its natural setting and to allow real stories to be revealed as they are happening in real life.

Hennink, Hutter and Bailey (2011: 9) stated that "(Q)ualitative research is a broad umbrella term that covers a wide range of techniques and philosophies, thus it is not easy to define". Defining qualitative research is very important as it is the central focus of this section, although it is a challenge to define this term as it does not have clear theories, obvious paradigms, nor an apparent set of methods or practices that are merely of its own. "This term also involves a vast array of methods and approaches within different subjects of research. Hence, writers have provided the definition of qualitative research distinctively" (Rahman, 2017: 103). Qualitative research thus seems to be an overarching, impactful concept under which a number of issues may be placed and discussed, involving positive and negative perspectives.

Fortunately, qualitative research is an approach that allows you to examine people's experiences in details by using a specific set of research methods such as in-depth interviews, in-depth observations, documents analysis and focus groups. However, qualitative research is much more than just the application of qualitative methods, one main distinctive features of qualitative research is that it allows you to identify issues from the perspective of your study participants and to understand their viewpoints about life experiences and behaviours. This is what makes qualitative research an open-ended and more flexible research methodology.

There are many ways of collecting qualitative data, but the most common ones are: (a) in depth, open-ended interviews; (b) direct observations; and (c) written document (Patton, 1990, p10). In interviews, the researcher can gather plenty of information by asking direct questions about people's experiences, opinions, feelings or knowledge. Nevertheless, direct observation is widely used in qualitative data collection. In direct observation, the researcher can get a detailed description of people's activities, behaviours and actions. Written documents refer to published reports, journals, data from researchers working in the same field, personal diaries and the responses to questionnaires and surveys.

According to Robson (1993: 370), "(N)arrative accounts and other collections of words are variously described as 'rich', 'full', and contrasted with the thin abstractions of number. Their collection is often straightforward". Moreover, selected research areas may be studied in depth about relatively small number of people and selected cases which can make the relationship between the researcher and research participants more personable and direct.

Advantages and Disadvantages of Qualitative Research

Qualitative research methodology is a situated activity that locates the researcher in the real world and a natural setting. Qualitative research consists of a set of interpretive, material practices and research tools that makes the world more clearly

visible. These practices transform and turn the world into a series of representations, including field notes, interviews, conversations, documents and photographs, recordings and memos to the self. As a result, qualitative research involves an open-ended, interpretive and naturalistic approach to the world. It is a main feature that qualitative researchers study things in their natural settings attempting to make sense of, or interpret phenomena in terms of the meanings people bring to them and to understand the research areas from the perspectives of research participants (Denzin and Lincoln, 2011).

Patton (2015) stated that qualitative inquiries study how individuals and groups of people construct meanings. In doing so, qualitative methodology devotes and allocates more attention on how qualitative analysts determine what is meaningful and true from their perspectives. This includes a focus on delineating the problems they are facing, including suggestions on possible solutions. In educational practice, this is fundamental in order to identify the real issues teachers are facing in implementing the new curriculum for instance, including the suggested methods and techniques on ways to resolve them in order to improve educational practices (Al Ramahi, 1998, 2001, 2002).

Tracy (2013) added that qualitative data provides insights into cultural activities that may be missed in structured surveys or experiments. Qualitative research can uncover salient issues that can later be studied using more structured research methods. This is the main advantage of qualitative research methodology, and which makes it a unique framework amongst others.

According to Krathwohl (1993: 311), qualitative research methods allow in-depth description of phenomena and events in an attempt to understand and explain them clearly. This description may be used to reveal new principles and explanations that can be generalised. Moreover, qualitative methods are inductive as they let the problem emerge from the collected data or remain open to interpretations of the problem different from those that held initially. Therefore, qualitative methods were characterised as inductive research methodology, allowing for new possibilities, new issues, themes, categories, areas and questions to emerge during the research processes. The flexibility of qualitative approaches was argued to hold also for data analysis. This was considered one main advantage of qualitative research here – "the categories of action developed for analysis are not rigidly fixed, nor is analysis restricted to a stage when the data has already been collected" (Allan and Skinner, 1991: 181).

On the other hand, there is a growing awareness that undertaking qualitative research is an embodied experience and that researchers may be emotionally affected by the work they do. Despite the interest in the emotional nature of qualitative research, there is little empirical evidence about researchers' experiences and the quality of their methodological skills and experiences in undertaking qualitative research.

In qualitative research, the researcher is considered the instrument of data collection and data analysis. Therefore, the quality of qualitative research depends, to a great extent, on the methodological skills, research abilities, experiences, awareness of ethical standards and the integrity of the researcher, as opposed to the mere technicalities of data collection and data analysis.

'Qualitative inquiry methods promote empathy and give the researcher an empirical basis for describing the perspectives of others while also legitimately reporting his or her own feelings, perceptions, experiences, and insights as part of the data' (Patton, 1990: 58).

Patton (2002) added that data for qualitative analysis comes from fieldwork (like interviews, observation and focus group. During fieldwork, the researcher spends a long period of time in the setting to obtain detailed and in-depth data to study a program, organisation, community or situations of importance. In doing so, researchers spend a significant portion of their time observing a study, interviewing people and analysing documents. "The researcher makes firsthand observations of activities and interactions, sometimes engaging personally in those activities as a participant observer" (p. 4). Therefore, the quality of the data collected in qualitative research depends to a great extent on the methodological and research skills, sensitivity, objectivity and integrity of the researcher (Patton, 2002). This means that the quality of qualitative research could be low and cannot be generalised. In case the researcher is not well trained and fully equipped with the right research skills, this may affect the objectivity of the results, and lead to subjectivity and emotionally colored research results.

Critique of Qualitative Research

Privileging empathy and understanding the process in context, and in such approaches, have been regarded as not without limitations by those holding harder models of science. One recurring criticism is that they are 'impressionistic and non-verifiable' (Allan and Skinner, 1991: 180). The impression-seeking and empathic researcher can influence objectivity. The researcher, as the instrument of both data collection and data interpretation can get too involved with the people and the situation under study. Thus, the collection of data can be influenced by the researcher's biases. Methods that promote empathy and give researchers the basis for describing the perspectives of others can also lead to a situation where, in Allan and Skinner's terms 'the researcher's perspective colours the data generated' (1991: 182). Even worse, 'from the perspective of the logical-positivist scientific paradigm, subjectivity is the very antithesis of scientific inquiry' (Patton, 1990: 54). Moreover,

'Serious ethical problems arise when observations include acts that are either legally or morally reportable to authorities. To report them at the least interrupts and more probably terminates the study. Not doing so can have serious consequences both for persons being abused and for the tacitly consenting observer and must be rationalised' (Krathwohl, 1993: 335).

Even in circumstances less dramatic than these, observers do have to improvise, sometimes under emotional stress, and this can lower the validity of the qualitative research. 'In qualitative inquiry the researcher is the instrument. Validity in qualitative methods, therefore, hinges to a great extent on the skill, competence, and rigor of the person doing fieldwork' (Patton, 1990: 14), though they are often insufficiently trained in relevant research skills, such as probing, listening and establishing trust with interviewees. Its popularity in recent decades, particularly among research scientists, has rested on its all too easy, apparent accessibility.

Other limitations review mentioned by Rahman (2017) who stated that results of qualitative research was considered of low credibility by policy-makers who frequently use quantitative research when investigation is called upon. For example, in terms of educational practice in the United States, state policymakers sought to quantify teacher's and student's performance, and in social sciences, quantitative methods are frequently given more status. Moreover, in terms of research method, smaller sample size raises the issue of generalisability to the whole population of the research.

Conclusion

This paper aimed to critically discuss the strengths and weaknesses of qualitative research methods as well as highlighting its uniqueness as an inductive research methodology. Perhaps most importantly, good qualitative research helps people to understand the world, their society and its institutions better. Moreover, qualitative methodology can provide knowledge that targets societal issues, questions or problems, and therefore serves people of various cultures.

In summary, qualitative research is detailed and holistic; focusing on real life experiences and contextualised lived stories which can help to explain and interpret quantitative data. Having said this, we may list some of these features of qualitative methodology as it involves an interpretive, naturalistic approach to investigate real life stories and experiences. Qualitative research identifies with 'lived experiences' of research participants, as the researcher is considered an instrument of data collection and data analysis. Henceforth, the quality of qualitative data depends, to a great extent, on the research methodology skills, objectivity and integrity of the researcher as opposed to the mere technicalities of data collection and data analysis. Therefore, researchers are required to be well trained and acquired the needed research skills which may lead to more objective and valid research results as well as raising the quality of the qualitative research methodology.

Acknowledgement

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Research and Pedagogy: Aspiring English Teachers' Perspectives on the Role of Educational Research. A Philippine University Context

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Abstract

Inspired by the notion of promoting research-engaged teachers, this research follows the footsteps of Simon Borg (2009) in his works in relation to encouraging teachers to engage in and with research; with teacher-trainees in mind, rather than experienced in-service teachers. This research sees the advantage of the Educational Research module in the curriculum of teacher education in the Philippines, and examines whether this can be a possible medium in promoting research-engaged teachers by analyzing the perspectives on educational research of 63 aspiring English teachers from a state university in the Philippines. A variety of roles in doing research emerged from the answers of the teacher trainees including: learning problem-solving, improving educational system and methods, enhancing researching skills, and a preparatory for postgraduate degree. Although some teacher trainees were able to recognize the relevance of research in teaching, including data from their interviewed Research Professors stating the link of research and pedagogy as one aim of the module, the majority of these teacher trainees are still not able to directly reflect on the link between researching and its benefits to teaching. Thus, the findings on the gap between the module's syllabus objective - "to identify the important role that research plays in education," and the limited awareness of student trainees towards it have led this research to echo Ellis' (2009) proposals: to give emphasis on the role of teacher educator as awareness-raisers, and the addition of "provisional pedagogical implications" section in the thesis projects of the teacher trainees.

Keywords: Educational research, pedagogy, teacher training, research-engaged teachers, English language teaching, pre-service teachers

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Introduction

Research as a basis for teaching, evidence-based teaching, teachers as researchers, and research-engaged teachers; these are just a few of the titles of research articles, papers and journals written for the purpose of promoting research in teaching. One fundamental argument behind this drive "is that when teachers engage with (through reading) and in (by doing) research and make pedagogical decisions informed by sound research evidence, this will have a beneficial effect on both teaching and learning" (Hargreaves 2001, cited in Borg 2009, p.358). However, even though the debates and proposals in making teaching more effective through educational research has evidently been an issue decades ago, from Stenhouse (1983) and Hargreaves (1996) to the contemporary ones such as Borg (2009) and Ellis (2009), with such influx of researches (Cochran-Smith & Lytle, 1999; Everton, Galton, & Pell, 2000; Macaro, 2003; Watkins, 2006; Borg, 2006) that concentrated on the drive to engage classroom teachers more fully both in and with educational research in order to promote the idea of teaching as an "evidence-based profession" (EBP), still, the case remains that teachers engaging with and in research does not seem to be a widespread practice for teachers. This is further supported by a study conducted by Borg in 2009, wherein it was found that the top reasons for teachers not doing and reading research are: their lack of time; they have no access to books and journals; they need research training; or they do not find research results to be practical in their teaching. Moreover, institutional culture was also highlighted from the same study to be one of the key factors that affect in-service teachers' attitude towards engaging in and with research. These teachers' views of research, as argued by Borg (2009), are relevant empirical data that should be gathered because "initiatives to promote EBP are more likely to have an impact if they are based on an understanding of teacher's conceptions of research and of the role research plays in their work (p. 732)."

As the focus of Borg's study, he then pointed out the lack of literature on research engagement in the field of English language teaching (ELT) as compared to the volume of empirical work in this area under education in general. That the nature of teachers' research engagement and their conceptions of research seem to have not been studied in any systematic way in ELT. He argued that if "we are to develop an evidence-base which can inform policy and initiatives aimed at promoting research engagement by teachers in ELT, empirical research into these issues is required (p. 733)."

1.1.   A case in the Philippines

Unfortunately, in terms of teacher research engagement, the same scenario is also true in the case of the Philippines. A study in 2007 by Salazar-Clemeña and Almonte-Acosta has been conducted to see the perspectives of forty faculty members from 14 universities and colleges in the country to evaluate whether they consider any of the following aspects of research culture in their institutions as being strong: the impact of research, administrative practices, inter-institutional collaboration, institutional research strategy, financial reward system, infrastructure, the presence of ethical policies, and the availability of research funding. The faculty however, did not consider any of the aspects of research culture in their institutions as being strong, and deemed them as present only to a moderate extent (Salazar-Clemeña and Almonte-Acosta 2007, p. 6).

1.2. Purpose of the Study

With all the information discussed above, this study sets out to further concentrate on research engagement in the field of English Language Teaching. More specifically, this paper digs into a fundamental aspect of teacher training; and that is, teacher education.

Inspired by the notion of promoting research-engaged teachers, this study sees the relevance of pre-service teacher training or teacher education as a breaking ground in promoting the research-engaged teachers movement. Primarily, this paper aims to do this by examining the existence of Educational Research as one subject in the teacher education curriculum in the Philippines through the pre-service teachers' research experience.

Similarly, the study is centred at analysing the perspectives of the pre-service teachers on the role/s of educational research. This will provide empirical data as to what do student teachers think to be the purpose of doing research in order to provide an informed understanding on how to make researching more impactful to these aspiring teachers, so that the relevance of research in pedagogy is embedded and sustained in their curiosity and interest.

Methodology

2.1. Research Questions

1. What are the pre-service teachers' perspectives on the role of educational research?
    1.1. To what extent are these perspectives leading to them recognizing the relevance of research in pedagogy?
2. What are the practical research professors' perspectives on the educational research subject?
    2.1. Do these perspectives reflect similarities with the students' perspectives of research?
3. Can this module/subject be a medium towards promoting research-engaged English Language teachers?

2.2. The Survey and Interview

Firstly, the syllabus for the Educational Research subject was examined to find its objectives and then later on compare this to the respondents' answers. Then, a survey composed of seven open-ended qualitative questions was conducted among 63 pre-service teachers. Open-ended questions are opted for as to not influence the answers of the respondents if choices are provided. Additionally, the questions aim to gather empirical, naturally-occurring data without the influence of presupposed answers. After answers have been gathered, an analysis of the data was done by identifying frequencies and categories. Additionally, an email interview for the two teacher educators, who both taught them the subject Educational Research, were gathered.

2.3.   Design

The following questions were asked from the respondents, from which questions 1 and 6 aims to gather initial thoughts from respondents on the role that their educational research subject plays in their training. Questions 2, 3, and 4 were asked to identify what areas in ELT research the students are interested in; while question 5 and 7 aim to gather what more personalized conceptions and values of research have been embedded among the student teachers after they have experienced research.

1. In general, what do you think is the importance of educational research?
2. What was your research topic/area? What was it about?
3. Why did you choose this topic?
4. What have you discovered in your research and why do you think it is important?
5. How would you describe your educational research experience?
6. Why do you think we have research as a part of the bachelor's degree in teaching?
7. Any other comments/additional thoughts regarding your experience on educational research?

2.4.   Administration

This study, is done for the completion of a master's degree taken in the UK, and thus barriers in distance with the respondents are taken into consideration. The survey is sent through email and is printed and mass produced to be disseminated in a class from a state university in the Philippines. The papers are then compiled, encoded, and sent through an email. Additionally, the same thing is done with the interview questions for the professors. Lastly, a request for a copy of the Educational Research was sent and approved by the said university. Each of all transactions were sent with a letter of consent for the university, students, and administrators involved. All identities are kept private and anonymous.

Findings

3.1.   Document Analysis
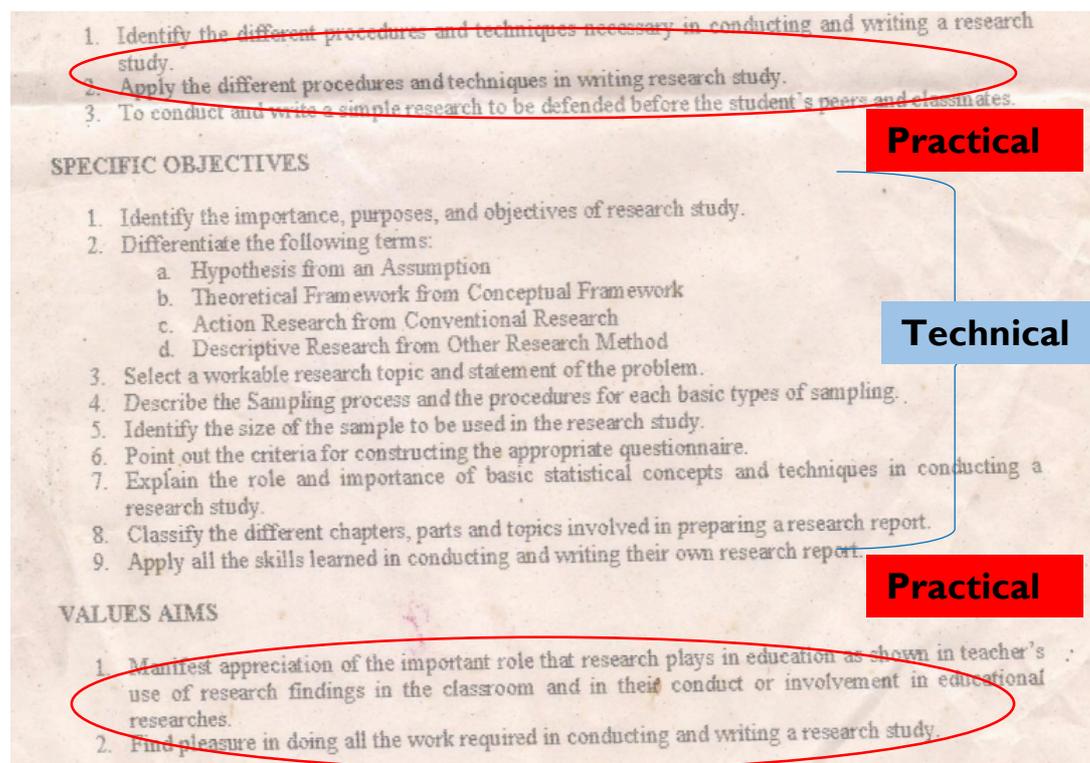
Figure 1. Educational Research Syllabus' Objectives

As reflected at the above sample of research syllabus, both technical knowledge and the practical knowledge of researching are considered to be the core of this subject. However, can easily distinguish that more technical-based knowledge are evident in the syllabus which might affect how pre-service teachers, and even teacher educators, see and approach the subject. This is clarified further later on as we discuss the pre-service and teacher educators' responses on their survey.

3.2.   Survey Answers

3.2.1. Questions 1 and 6

1. In general, what do you think is the importance of educational research?
6.   Why do you think we have research as a part of the bachelor's degree in teaching?

Q1: Importance of Educational Research

It helps in different pedagogical aspects ……..28
It helps in problem-solving…………………...14
It enhances academic and researching skills…11
It prepares us for postgraduate studies………..3

Q6: Reasons for doing research as part of the degree

To Help Improve Education/Teaching or
Raise Awareness on Issues in
Education…………….27
For Enhancing Researching and Thinking Skills……12
To Prepare for Postgraduate Degree………………….8
To Acquire Problem-Solving Skills…………………..4

Figure 2. Similar Emerging Themes for Question 1 and Question 6

The importance of educational research and the reason for doing research as part of the respondents degree as English language teachers are both primarily for improvement of pedagogical aspects as seen through the data above. This means despite having the majority of answers spread through technical and academic reasons for doing research, the top answer among the respondents is still pedagogically linked.

3.2.2. Questions 2, 3, and 4

2. What was your research topic/area?
3. What was it about?
4. Why did you choose this topic?

Topics	Frequency
Language Learning Competency	II
Learning Environment	2
Teacher Training	3

Figure 3. List of Educational Research Topics/Areas of Pre-Service Teachers

Reasons	Frequency
To Identify Problems in Language Learning	30
To Explore Learning Experiences of Students	9
To Enhance Their Teaching Skills	14
To Apply Different Pedagogical Techniques/Strategies	I
Topics Were Rejected	5
To Learn About the University's Teacher Training	I
To Learn What Employers Look for Fresh Graduate Employees	3

Figure 4. Reported reasons for choosing their research topic

Perceptions	Frequency
To Identify Language Learning Difficulties and Competencies	40
To Help Improve Their (Pre-Service Teachers) Teaching Skills	17
To Help Develop Teaching Strategies	4
No Answer to "Why is it important?"	2

Figure 5. Reported perceived importance of research outcomes

Questions 2, 3, and 4 received a top answer for the topic that the students are interested in doing for their research as well as for the reason in doing so is for them to "identify language learning difficulties and competencies, followed by their interest in improving their teaching skills. This shows both a direct classroom research interest, as well as language learning/teaching inclination in choosing their research topics.

3.2.3. Question 5

5. How would you describe your educational research experience?

Experience	Frequency
Research Was Hard	22
Research Was Hard but Fulfilling	10
Research Was Hard but Fun	8
Research Was Hard, but A Good Learning Experience	15
Research Helped in Teaching	8

Figure 6. Reported pre-service teachers' Educational Research experience

Some qualitative answers for question number 5:

Research was hard:

S1: Educational research experience was not easy. It was time consuming, effort giving and very costly

S6: Our educational research is very laborious, expensive, and psychologically challenging. Laborious because it take all your time and effort to produce a good research. Expensive, naturally, we need to spend money, and psychologically challenging because it also affects your relationship with your group members.
Research Was Hard but Fulfilling

S3: It was a roller coaster journey. We've been through a lot of different problems and it was hard for us to come up with their topic because our proposal for the topic and title took a lot of time. But then we finished the whole research, it was a fulfilling experience.

S8: I would describe our educational research experience as terrible but full of excitement. Terrible because it takes a lot of time, effort and perspiration. It's hard to create a problem and solve it at the same time. Full of excitement it allows friendships to be intact and create memories together as we go along.
Research Helped in Teaching

S18: It is stressful yet full of fun. With my experience I was able to know that there were different problems arising in our educational system. Even though it is stressful for it really asks for hard work and patience, I can say that it made our group stronger individuals and it is a lot of fun to work with them.

S46: My educational research experience is tasky, yet fulfilling. Being able to attain answers form questions are really overwhelming though the results are not purely able to be proud of it is awakening to know that there is a lack of development in the field of writing.

Although from what we gathered in the quantitative answers to number 5 represents that among the emerging criteria, Research helped in teaching receives one of the two lowest answers by the pre-service teachers in describing their research experience, which I have described earlier to be the question to generate a more personalised answer, it is also worth noting that from the qualitative descriptions of the respondents, some aspiring teachers shows explicit realization, if not appreciation, of the true value of what they did. It is but a good sign that their research experience help them to directly identify the purpose of researching.

3.2.4. Question 7

Any other comments/additional thoughts regarding your experience on educational research?

Comments/Thoughts	Frequency
None	I
Research is Hard But is A Good Learning Experience	26
Research is Helpful	3
Research is a Good Experience	3
Research Helps Education and Pedagogy	3
Researching is Undergoing a Variety of Challenges	23
Research Requires Patience	4

Figure 7. Additional comments/thoughts on their research experience

The additional comment section became a leeway for student teachers to express their transparency towards how they feel about research. Generally, the respondents felt that doing research might be exhausting and challenging, but it has also brought them good learning experiences, which fortunately, is positive towards the subject.

3.3.　　Teacher Educators: Educational Research Professor Written Interviews

3.3.1.　Professor 1

- Why do we have educational research in the teacher training course?
- A. To build/develop interest among students the love to research
- B. To enhance awareness on the concerns, issues or problems in teaching English subjects that will ultimately help the students in their methods of teaching.
- What do you think should students take from this course programme to their teaching career?

The experience of Patience and perseverance while doing the research project will be the value　that they will need when teaching English subjects, The value of meeting deadlines are the same value for "Punctuality" that they should have when they are already in the field.

- In what terms do you consider the educational research programme has been successful?

The realization of the relevance of research findings/results in improving the methodologies in teaching English subjects. Also, the ability/enhancement of writing skills in English as well as the mechanics of writing the components of research paper.

3.3.2.　Professor 2

- Why do we have educational research in the teacher training course?

-may lead to the development of schools, principles, or theories in teaching.

- To improve school practices and at the same time to improve those individuals　(teacher and students) who strive to improve those practices

-Serves as a guide to develop new understanding about teaching, learning and educational　administration.

-It allows us to assess and review the quality of schools and education.

-It gives us results on the patterns of behaviour in teachers, students, and members of a school system.

- What do you think should students take from this course programme to their teaching career?

They should take the procedure on how to analyze data, interpret and gives solution to a　problem (if there is).

- They should take the correct way on how to organize the manuscript.
- Future English Teachers should consider also the knowledge on statistical treatment.
- Future English Teachers should take from their educational experience the proper observation and selection of respondents to formulate a good result.

- In what terms do you consider the educational research programme has been successful?

- in supporting the individuals beliefs/curiosity with valid evidences.
- It has been successful from my personal experiences.
- Providing instruction that maximizes students' learning.

-Providing solutions to educational problems.

3.3.3. The Role of Teacher Educators' as Awareness-Raisers

The professors' answers when compared to the students as well as when analysed with the syllabus examined in this paper, it is easily illustrated that both the technical knowledge and practical knowledge that the Educational Research subject aims to develop are also both present in the professors' answers. This only solidifies one concept that this paper would also like to echo; that is, Rod Ellis' reminder of teacher educators' role as awareness-raisers (Ellis, 2009). That they play a very important role in embedding what kind of knowledge is retained and sustained in the professional curiosity of their teacher trainees.

Conclusions

In order to provide a comprehensive conclusion, it is important to go back to the main questions of this study and carefully analyse the answers. This research aims to answer the following questions:

1. What are the pre-service teachers' perspectives on the role of educational research?
    1.1. To what extent are these perspectives leading to recognizing the relevance of research in pedagogy?

2. What are the practical research professors' perspectives on the educational research subject?
    2.1. Do these perspectives reflect similarities with the students' perspectives of research?

3. Can this module be a medium towards promoting research-engaged English Language teachers?

Let me begin by stating that the multi-layered answers by the pre-service teachers on their research experience only proves and echoes the common struggles that one encounters in doing research. We find it tedious, time-consuming, and costly, together with other negative conceptions associated with the rigorous task of researching. This thus means that pre-service teachers, similar to in-service teachers who are being encourage to engage in and with research, should be provided with utmost support, especially that they are also in training to become teacher researchers as well. That in order to embed in them the essential role of research in pedagogy, teacher educators should be able to provide them with appropriate and direct guidance on the link of researching to their future career. However, we should also not take for granted the positive remarks that the data illustrated in this research. Generally, a positive conception of educational research has been expressed by the respondents, and there are qualitative data that showed pre-service teachers explicitly reflecting the link of researching to pedagogy. By and large, it is justifiable to answer the last research question with a resounding "yes."

The module or subject in educational research, can be a medium in promoting research-engaged teachers in the field of ELT. This can also be further developed and improved by taking into consideration the role of teacher educators. The programme would also like to acknowledge and echo as a recommendation, what Ellis (2009) discussed as inclusion of a "Provisional Pedagogical Implications" in teacher

researches to indicate teaching and or learning implications found, without imposing generalizability through provisional specifications that teachers as readers are to evaluate. Lastly, the programme also aims to avoid institutionalized culture that hinders in-service teachers, since the encouragement to be research-engaged is done during teacher training, where their environment is still centred to developing their teaching skills and professional curiosity is still sustained.

Acknowledgements

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Text Mining-based Scientometric Analysis in Educational Research

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Abstract

This paper presents a complete scientometric analysis of Hungarian Pedagogy, the most significant and oldest Hungarian educational research journal, founded in 1892 and still being issued today. In our research project, all of the articles which had been published in this journal (N=6574) was digitised in order to build a well-structured database, which makes it possible to analyse them by means of various metadata. Besides analysing their metadata, our aim was to investigate the full text corpus with text mining, an essential tool of Educational Data Mining. General scientometric indicators and tendencies, such as the amount and length of the articles, the most significant authors' impacts and backgrounds, as well as the number of citations by authors were also discussed. Moreover, we investigated the ratio of male and female authors, the national and institutional background of certain researchers with a full range of metadata analyses. Recent studies have verified that scientific cooperation is growing world-wide; therefore, our first research question focuses on this matter by revealing the co-authorship network of the journal. The hubs of this graph represent the most central people in the collaborative authorship of the analysed journal in the field of Hungarian educational research. Finally, after a co-authorship graph had been created, enormous citation graphs were also produced based on the analysed journal in order to reveal the scientific network within the field of educational research in Hungary. Using this graph, a multi-criteria citation analysis was conducted enabling the indication of additional relevant results.

Keywords: text mining, scientometrics, educational research journals, co-authorship network, citation analysis, citation network

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Introduction

Scientometric databases (also known as citation databases) were introduced several years ago (Garfield, 2006). In the beginning, only the so-called 'hard' sciences took advantage of the benefits thereof, but today social sciences and humanities also build upon the opportunities offered by citation databases to a certain extent (Hammarfelt, 2016). Despite these possibilities, many scientific publications exist whose influence and their authors' scientific impact cannot be measured due to the fact that an abundance of journals are not represented in international citation databases. These academic journals mainly derive from the area of humanities and social sciences (Mongeon & Paul-Hus, 2016), accordingly, educational research is particularly concerned. These journals – either issued in English or in a non-English language – have two common features: they are all emerging periodicals, and have an important role for a national or a local scientific community.

The following two questions truly highlight the seriousness of the problem: How many scientific publications are born globally?; How many of them are contained in Web of Science (hereinafter referred to as WoS) or Scopus databases? Naturally, we cannot give an exact answer for the first question, but the order of magnitude is certainly much larger than the numbers in the second answer. To get closer to the problem, international academic journal indexing databases (such as Ulrich, DOAJ, ERIH Plus, etc.) could be good bases for comparison.

The national current research information systems could be other viable benchmarks for comparison. Sivertsen (2014) suggested really poor coverage of some fields of science regarding the two leading scientometric providers according to the data of the Current Research Information System in Norway (Cristin). Their results show that Scopus covers 32%, while WoS covers only 23% of all peer reviewed scholarly articles published by Norway's higher education institutions in journals and series of the field of humanities. The comparable figures for the social sciences are 54% in Scopus and 42% in WoS. The corresponding figures in the examined citation databases for the education and educational research category are 35% and 22%. Unfortunately, in many countries the coverage situation is similar to or worse than in the Norwegian example.

All this proves that there is a huge gap in science evaluation, therefore we should find alternative solutions. Although our results are related to one well-selected journal only, both the problem and the applied method are truly universal, as we can see from the examples which will be detailed later on. Actually, we suggest that the major outcome of our research is not the presented results themselves but rather the developed and applied method which could be adapted successfully by anyone in similar instances. Taking all these into consideration, the main question is: How can those journals be measured which are out of the scope of the major international scientometric providers? Somehow, we have to reproduce the technique of the huge content providers in a smaller dimension. This paper reports on such experiment in the area of educational research, with scientometrics, citation and text mining analysis.

Theoretical background

The abundance of digitized contents which became available on the Internet due to the transition from an analogue to a digital environment has brought about a remarkable revolution in recent decades in the scientific communication (Moss & Endicott-Popovsky, 2015). In recent years, many authors have dealt with this transformation (Castelli, Manghi, & Thanos, 2013; Pearce, Weller, Scanlon, & Kinsley, 2010). In addition to many other tendencies, one characteristic of this metamorphosis is that scientific communication has increasingly shifted from the world of books (monographs, edited and synthesized volumes) to journal papers and various conference publications. This change has taken place even in social sciences or arts and humanities (Bornmann & Mutz, 2015; Larsen & von Ins, 2010), similarly to the previously experienced in 'hard' sciences.

It is obvious that we are close to making everything available online, either in a digitised or born-digital form (Nagy, 2014). Along with commercial databases, institutional repositories have a crucial role in this process (MIT, 2016). Repositories also support the Open Access movement, serving its green route (Björk, Laakso, Welling, & Paetau, 2014). The emergence of institutional and disciplinary repositories and the transformation of the publishing model of scientific journals were absolutely fundamental in the change taking place in scientific communication in the last decades (Chan, 2004; Lynch & Lippincott, 2005). Evidently, these effects have also concerned educational researchers. As it was mentioned earlier, recent studies suggest that scientific collaboration is growing world-wide (Adams, 2012), and the significance of scientific evaluation has been considerably increasing in all fields of science. New viewpoints and methods have emerged (Hicks, Wouters, Waltman, De Rijcke & Rafols, 2015). Nevertheless, such adaptation is required in all disciplines, in educational research, too.

The study which deals with measuring, analysing and evaluating science is called scientometrics. Its subjects can cover a broad spectrum; ranging from an individual to a group of scholars, institutions, journals, and so on. In fact, it is an outstandingly innovative discipline with a lot of new approaches (e.g. altmetrics). It is important to note that in scientometrics various fields of science are handled in different ways: 'hard' sciences, social sciences, arts and humanities have very different points of view (Nederhof, 2006; Archambault, Vignola-Gagné, Côté, Larivière, & Gingrasb, 2006).

After all, more and more disciplines or interdisciplines try to exploit full-text corpora, and it is necessary to take advantage of the same within the discipline of scientometrics as well. This procedure is fundamentally based on the solutions offered by artificial intelligence, using the tools of data and text mining. Moreover, these methods and other IT-provided solutions are soon going to be built into the toolkit of every discipline. Text mining provides a unique opportunity for investigating latent information in texts (Zhang, Porter, & Chiavetta, 2017), especially in scientific papers (Liu, Yu, Janssens, Glänzel, Moreau, & De Moor, 2010). Text mining is the process of deriving information from the text, therefore it would be obviously useful in an educational context, as well, where lots of texts are produced day by day. For instance, it could be applicable for educational log file analysis, finding citations in educational research journals, content analysis, and so on.

As it was previously pointed out, lots of disciplines use data and text mining; moreover, each has created its own applied version. Educational Data Mining (EDM) is one of the best examples of the manifestation of this phenomenon. EDM is an emerging discipline used for exploring large-scale data and textual information coming from some educational settings (Baker & Yacef, 2009). This interdisciplinary method has been increasingly applied in educational research, and several publications have been already published by the experts of EDM with the use of some kind of text mining tools (e.g. Koedinger, D'Mello, McLaughlin, Pardos, & Rosé, 2015; Wang, Bowers, & Fikis, 2017). The International Educational Data Mining Society was founded in 2011 and the first conference of the EDM experts dates back to 2008, from then on the conference has been organized every year.

Aims and research questions

Our research project is a pilot study aimed at experimenting and introducing new methods to scientometrics for those journals which are not indexed by internationally acknowledged citation databases. The subject of our research is a nationally acclaimed educational research journal entitled "Hungarian Pedagogy". This scientific journal is over a hundred years old (it was founded in 1892), and it has still been a leading journal in the area of Hungarian educational research. First of all, we had to digitize all the volumes of the journal; then we had to build a bibliographic database from the metadata for the subsequent research.

Beyond that, our main aim was to carry out a highly detailed scientometric analysis with creating the co-authorship graph and generating the inner and full citation network of the analysed journal. These co-authorship graph and citation networks reveal the scientific network within the field of educational research in Hungary for the first time, as similar graphs have not been produced beforehand. A more general goal was to develop new tools that could serve the interest of academics: to investigate their scientific performance mainly in the area of educational research and their scientific communication in the field of education. The following research questions were raised in this paper:

(1) How have the main scientometric indicators (number of publications; average length of studies; average number and freshness of references per article) changed over time and how have the patterns of co-authorship transformed?
(2) Who are the most influential authors of the journal, and what is their institutional background like?
(3) Has the ratio of male and female authors changed in the last 25 years?

Methods

First, in an attempt to create an operable and universal method, we had to select an experimental subject from the area of educational research. Our choice was "Hungarian Pedagogy" (in Hungarian: Magyar Pedagógia), the most important and oldest Hungarian educational research journal, representing a wide range of acknowledged authors. After all of its volumes (114) had been digitized, a 50,000-page text corpus was created from the journal articles (ca. 6,500 scientific studies). In addition, all metadata was put into a well-structured database, which having been built by cataloguing librarians.

The full-text corpus was analysed with text mining, a method which can show latent information and connections in the text structure. Along with the text mining analyses, a scientometric analysis was also conducted. The research is a pilot study aimed at the scientometric and text-mining analyses of national journals from the area of social sciences and humanities. These two disciplines were chosen due to the fact that presently they are much less represented in the well-known international citation databases (WoS, Scopus).

To carry out the citation analyses, it was necessary to retrieve and structure the references from the articles. It could be only managed with an automatized approach, due to the abundant number of elements. To implement this step, we had to convert the texts from PDF to XML format. A crucial element in the project was the automatic detection and extraction of citations, which became possible with the applied standard reference style (it is very similar to the well-known APA style). The pattern recognition was conducted by using text mining, with exploiting the help of regular expressions: we have taken into consideration the special additional style information, such as bold and cursive characters, which added more data for us.

All of the metadata and the extracted citations have been stored in structured CSV files. To handle these raw data, we used LibreOffice for manipulation and Microsoft Office for visualization. Furthermore, to analyse and visualise the co-authorship and citation graphs in an accurate way, we applied Gephi, an open-source software package for network analysis and visualization. In the course of our work, we had to tackle lots of problems and challenges; for instance, the non-consistent compliance of the official citation style, misspellings and errors or missing data elements. In spite of all these difficulties, according to our estimation at least 95% of all references could be extracted. After this step, citations were verified and manual data cleaning was conducted. Altogether, exactly 14,039 citations were identified for subsequent examinations.

Results and Discussion

General scientometric profile

Firstly, in 2015 the full text of all the volumes was digitized and made freely available for the scientific community in an institutional repository. The digitized texts contribute to the content of the repository, which consists of thousands of articles. These articles are accessible for the experts of the particular area making research on the history of education easier (with the assessment of old issues), increasing their visibility and enabling the dissemination of current issues. In addition, it also opens the opportunity for computerized analysis of the texts. In spite of its high academic quality, Hungarian Pedagogy is not represented in international citation databases; therefore, our work served as a niche for the national scientific evaluation in educational research.

Secondly, a full range of metadata analyses were performed by assessing top authors, group of authors, co-authors, female authors, the average length of articles and many other aspects (Nagy & Molnár, 2017). In addition, a co-authorship and a reference graph (from 1991 to 2014) were built up, and a multi-criteria citation analysis was

conducted. Results indicate the most-cited authors, interdisciplinarity of the articles, international and national references and their freshness. We give a general overview of the scientometric profile of the analysed journal. Based on our results, the main tendencies are the following: the number of publications has been decreasing but the average length of the articles has been continuously increasing. The ratio of female authors has enhanced, similarly to the proportion of articles with multiple authorship. Finally, according to our investigation results, the average number of references per article has also ascended.

The findings of the present paper do support the claims according to which the productivity of the Hungarian educational researchers has been decreasing in the past decades. If we compare our results to other topic-specific national journals and international databases, we can see a general reduction in the number of publications. Parallelly, the number of the Hungarian educational researchers' international publications has only slightly increased in the last decades. At the same time, according to further outcomes, a new phenomenon occurred concerning the female authors' predominance, as the ratio of male and female authors has turned around since the millennium (see Figure 1), answering our third research question. This investigation was also carried out with taking into account the entire publishing period of the journal. It is scarcely surprising that these results show greater changes since the end of the 19th century.
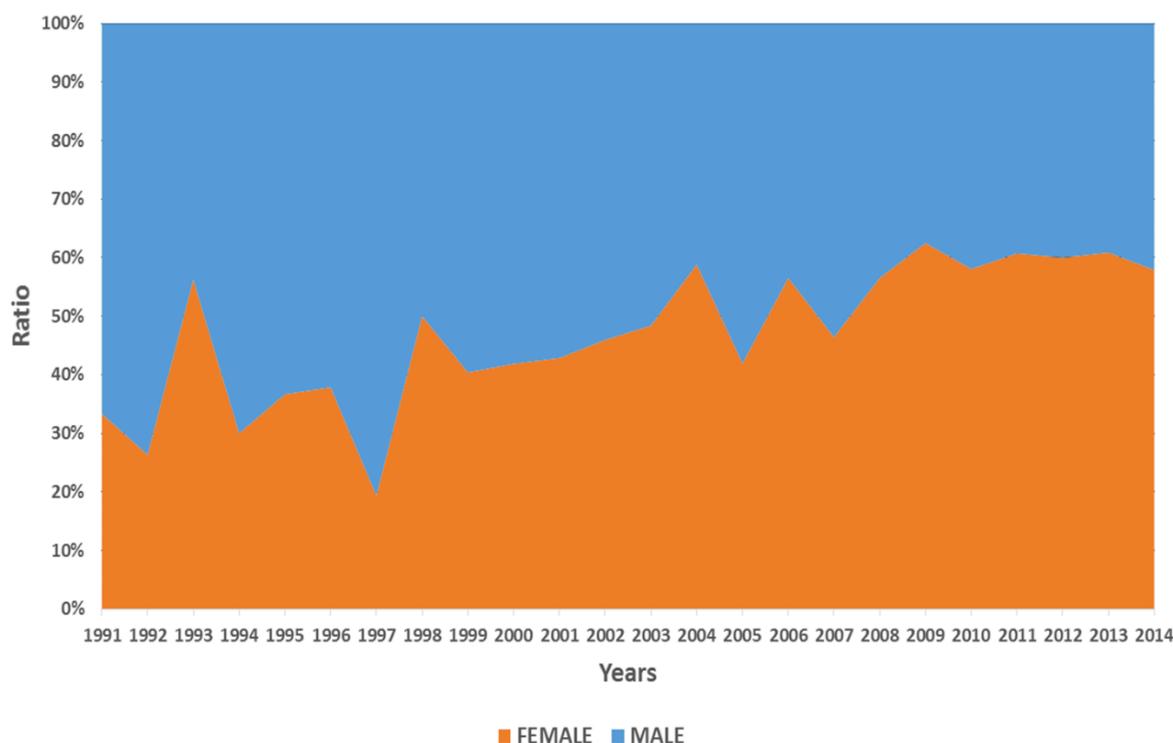

Figure 1: Rise in the number of female authors in the last 25 years in the analysed educational research journal

According to our results based on the average length of the publications, the amount of references, their freshness and the intensifying collaboration between the authors via co-authorship patterns, the scientific quality of the examined journal has

significantly increased in the last twenty-five years. The average number of references per publications has changed from around 20 to around 60 over the last quarter of a century. Besides, in the second half of the examined period, authors have undisputedly cited more recent articles than in the nineties. Since 2002, the average freshness of citations per year is between 11 and 18 years, while this value was about 10 years more in the previous decade. Based on these results, it can be concluded that the quantity of publications decreased but their quality significantly increased during the investigated period.

In the next step, besides assigning the general indicators, we had to categorize and typify citations for further specific examinations. This task was not a trivial operation due to the large number of elements and the various literature sources which were used by the authors. To identify the titles of Hungarian journals, we used the Hungarian Periodicals Table of Contents Database (in Hungarian: MATARKA), while with regard to the international journals, we used the Journal Citation Reports. Afterwards, we supplemented it by filtering typical terms that are specific to certain journal titles (e.g. quarterly, bulletin, etc.). The classification of the journals was done by assigning them to the following main categories: periodical or non-periodical and Hungarian or international. So, we created groups with various settings, such as Hungarian and international journals. Then, the formerly formed groups could be subdivided into subgroups, such as journals with impact factor or the subgroup of educational research journals. With this, the purpose was to examine the proportions of each category in order to draw different conclusions from them and establish predominant trends in the distribution of the referred sources. The most important results can be found in Table 1.

Table 1: The 30 most popular sources of literature in Hungarian Pedagogy between 1991 and 2014

#	Title	Number of citations	Language	Genre
1.	Magyar Pedagógia [Hungarian Pedagogy]	434	Hungarian	journal
2.	Iskolakultúra [School Culture]	398	Hungarian	journal
3.	Új Pedagógiai Szemle [New Pedagogical Review]	271	Hungarian	journal
4.	Journal of Educational Psychology	114	English	journal
5.	Educatio	106	Hungarian	journal
6.	Pedagógiai Szemle [Pedagogical Review]	97	Hungarian	journal
7.	Az iskolai tudás [School Knowledge]	94	Hungarian	book
8.	Köznevelés [Public Education]	72	Hungarian	journal
9.	Learning and Instruction	56	English	journal
10.	Journal of Personality and Social Psychology	53	English	journal
11.	Az iskolai műveltség [Literacy at School]	52	Hungarian	book
12.	Magyar Pszichológiai Szemle [Hungarian Psychological Review]	52	Hungarian	journal
13.	Az olvasási képesség fejlődése és fejlesztése [The development of reading ability]	49	Hungarian	book
14.	Psychological Review	46	English	journal
15.	Pszichológia [Psychology]	44	Hungarian	journal

16.	Child Development	41	English	journal
17.	Contemporary Educational Psychology	41	English	journal
18.	Handbook of Self-Regulation	41	English	book
19.	Jelentés a magyar közoktatásról [Report on Hungarian Public Education]	38	Hungarian	book
20.	Review of Educational Research	37	English	journal
21.	A biológia tanítása [Biology Teaching]	36	Hungarian	journal
22.	American Psychologist	35	English	journal
23.	Educational Psychologist	35	English	journal
24.	Science Education	33	English	journal
25.	Modern Nyelvoktatás [Modern Language Education]	33	Hungarian	journal
26.	Tanulmányok a neveléstudomány köréből [Studies in the Field of Pedagogy]	32	Hungarian	book
27.	XXI. század és nevelés [Education and the 21st century]	32	Hungarian	book
28.	Neveléstudomány az ezredfordulón [Educational Sciences at the Turn of the Millenium]	32	Hungarian	book
29.	Modern Language Journal	31	English	journal
30.	Developmental Psychology	30	English	journal

A more detailed examination was required in those cases when authors have cited journal articles, consequently, a sub-sample had to be composed from the full sample. To this end, the proportion of the usage of international and Hungarian literature sources was also reported. In this design, a 43%-57% distribution could be detected in the Hungarian-international dimension. According to this data, we can claim that international references are predominant. Taking into account the temporal distribution of the data, we can state that the references of international journals have an increasing emphasis in the used resources, as from 2007 onwards the annual distribution of international journals is constantly between 60% and 70%. The growing proportion of international journal references also predicts that authors are increasingly citing more publications with impact factor in their studies. The upward trend shown in Figure 2 clearly confirms this premise.
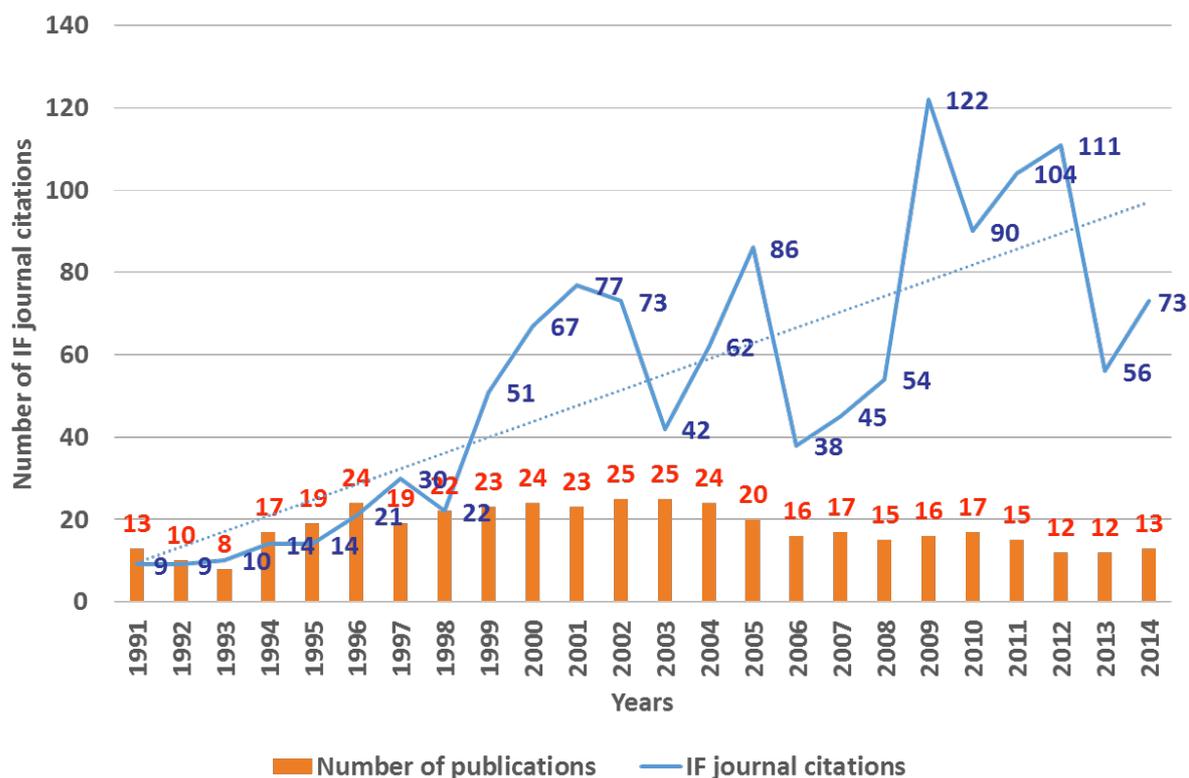
Figure 2: References to journals with impact factor in the light of the annual
publication number

Co-authorship and citation network analysis

As far as the collaboration between academics is concerned, the results justify the
developing scientific cooperation among educational researchers due to the evolving
co-authorship of Hungarian Pedagogy. On average, more and more authors have
written an article as time went by during the last quarter of a century. In the beginning
of the examined period, the average author per article values were closer to one author
per article, i.e. the predominant proportion of the articles was written by one author,
but in the second period these values were closer to 1.5. In one year it reached a value
of 1.77, which is outstanding compared to all of the other examined years.

Figure 3 illustrates a typical co-authorship pattern from the area of Hungarian
educational research, represented by a part of the created co-authorship graph. The
circles symbolize authors, with their size marking their importance in the
collaboration network, while their colour indicating their institutional background,
partly responding to our second research question. The whole co-authorship graph
consists of 108 larger or smaller distinct components. This number implies a strong
fragmentation for a graph of such size.
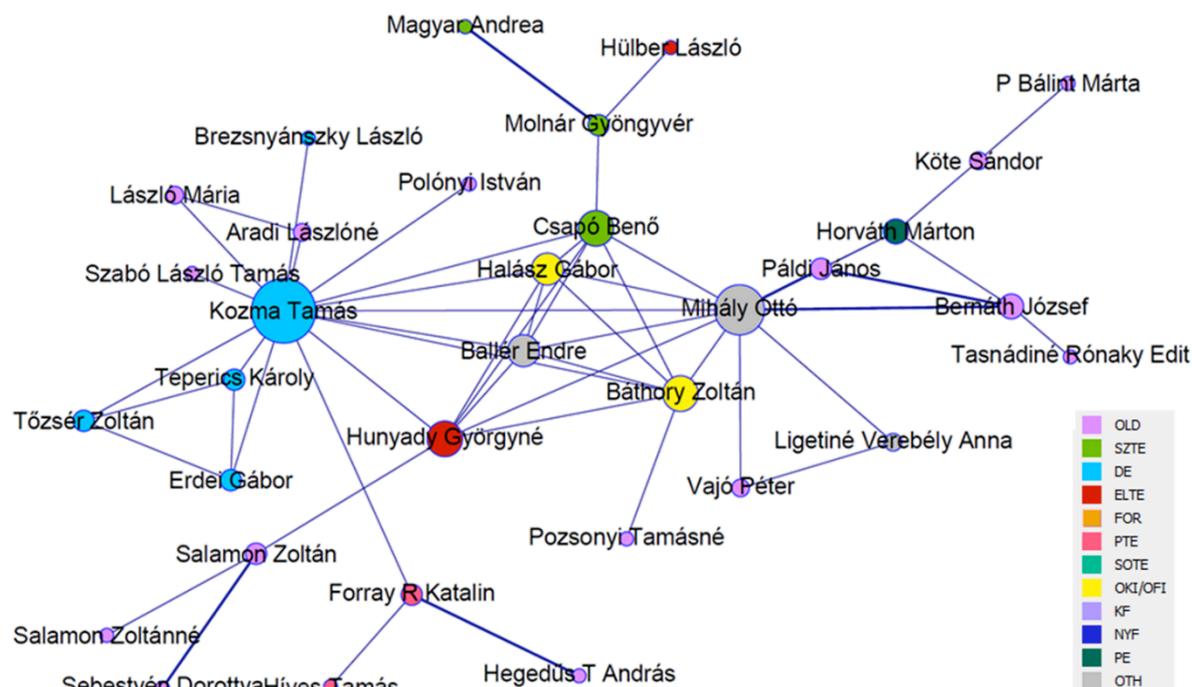
Figure 3: The largest component from the co-authorship graph

After creating the collaboration network, citation networks were also implemented. The plural form is actually not unintentional because we have created two types of citation graphs. The first one is an inner network only with Hungarian Pedagogy citations. This graph consists of 222 nodes, 467 edges and has 15 separated components. Beside the inner citation network, the full citation network was also completed and resulted in the following, most important general metrics: the number of nodes is 10,382, while the number of edges is 19,182. The average degree of the network is 3.695 and the network diameter is 9. The number of connected components is 6; however, a large component typifies the citation graph with 10,245 nodes. Last but not least, the visualization of the full citation network shows a really nice graphical illustration from a distant view. Because there are a large number of elements, it can only be interpretable in detail in a special software environment.

In addition to the previous outcomes, the scrutinized journal's most cited authors and their institutional affiliation were identified (see Figure 4), responding again to our second research question. In most cases, the obtained results in connection with the author's impact are consistent with the indicators of the international reference databases. The internationally recognized scholars in the area of Hungarian educational research are the most cited researchers in the articles of Hungarian Pedagogy as well. Moreover, the results in connection with the institutional affiliation show some surprising facts; for instance, the educational researchers of only two major Hungarian universities, the University of Szeged (22.07%) and Eötvös Loránd University (16.22%) are mainly represented as the most-cited authors.
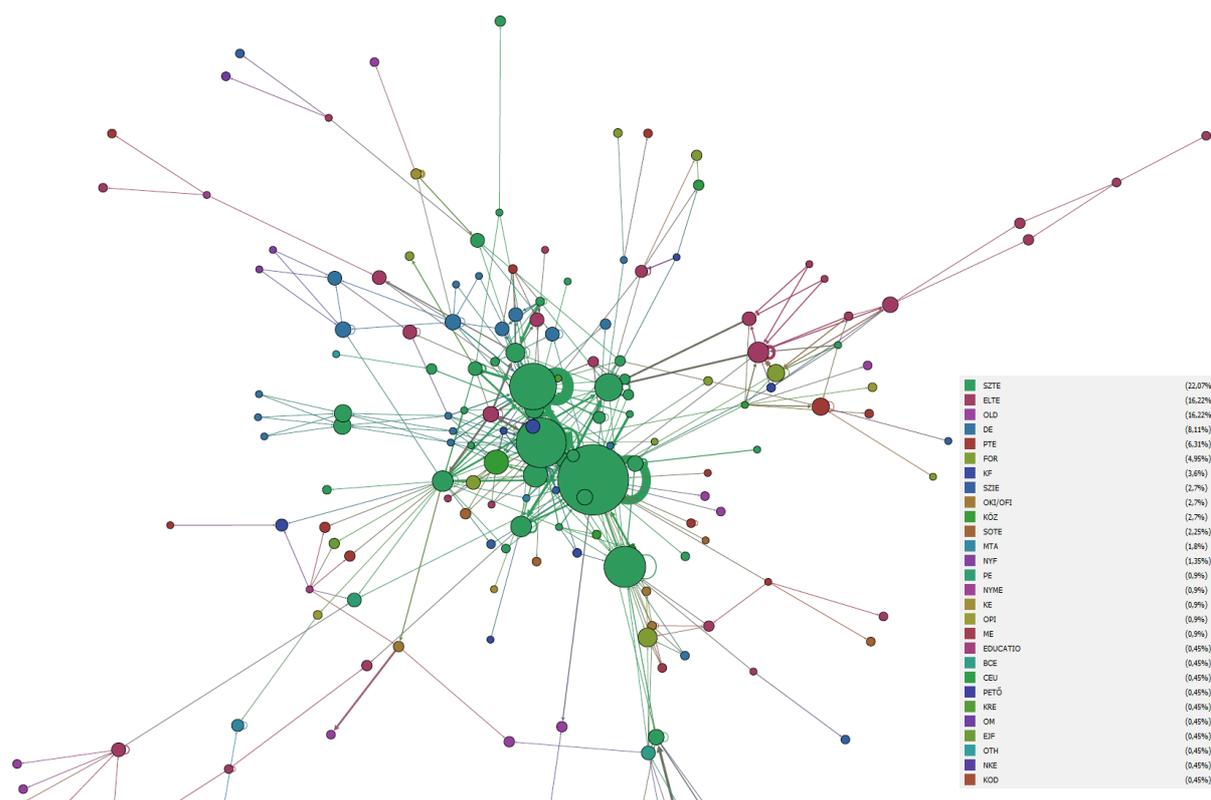
Figure 4: The internal citation graph with the correspondent institutional affiliation

Conclusions

This pilot study was conducted for making up a shortage of in relation to a special claim in the area of science evaluation in such cases when the international scientometric databases cannot be used. It would like to provide a practical and unique response to a common question, as the measurement of the scientific quality of many scientific media proves to be particularly difficult. This problem can originate from a multitude of reasons; for instance, they might be newly founded journals only with a few years history or they may be issued in a native language with specific but relevant topics for a local scientific community. Nevertheless, these journals have a really important role at national level consequently they deserve special attention with regard to their scientometric analysis.

Our study reveals a scientometric profile of an acknowledged Hungarian educational research journal, the Hungarian Pedagogy. The obtained results completely corroborated our presumptions in the investigated period (1991-2014). The number of publications has been decreasing but the average length of the articles has been continuously increasing. The average number of references per article has also ascended and the authors have cited more up-to-date publications in the second half of the examined period. A very similar quality change has started in 2007, i.e. nearly two-thirds of the journal citations involved international articles since then. Finally, in the last twenty-five years the ratio of female authors has enhanced, similarly to the proportion of articles with multiple authorship.

It is more important, however, that a detailed scientometric profile has been completed of an essential educational research journal at national level. As our

applied method is widely flexible and adaptable, it may serve as a schema for further comparative analyses concentrating on similar research questions. The limitations of the technique might derive from the required IT expertise which may not always be readily available. The non-consistent compliance of the official citation style, misspellings and errors or missing data elements in the reference lists may cause further difficulties even in the process of the automatic extraction of citations. Altogether, the conducted research demonstrates that scientometrics is relevant and provides beneficial possibilities in educational research. This means that there is life beyond citation databases: alternative solutions enable us to evaluate those journals which are not indexed by these databases.

Besides the relevance of scientometrics, another important outcome is that text mining has a great potential in the area of educational research, so it is advised for scholars to take advantage of this opportunity. In connection with scientific publications, lots of hidden information can be extracted from the descriptive metadata by using bibliographic databases. For example, a full co-authorship network of a journal can be created only from the usage of metadata. Building collaboration and citation networks also have great potential, and there are some really useful open source software packages for this purpose.

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Turning Beliefs Into Practices: Pre-Service Teachers' Epistemologies of Models and Their Model Formation

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Abstract
The purposes of this study were to evaluate pre-service teachers' epistemologies of scientific models and their model formation in a model-based inquiry environment and to look for a relationship between their epistemologies and model formation. Theoretical underpinnings of this paper were the following: Pre-service teachers' epistemologies of models are structured as their beliefs, can be reshaped by instructional experiences, and may have relationship with their model construction. Case study design using quantitative and qualitative research methods was carried out for this study. Participants were senior pre-service physics teachers. The participants were requested to generate initial models, develop inquiry questions, propose hypotheses, do investigations and conduct experiments to test their models in model-based inquiry. The results showed that the participants' epistemologies of nature and function of models were between transitional and sophisticated levels. That is, they tended to think that models were representations and tentative. The pre-service physics teachers also gradually constructed more quality models while experiencing model-based inquiry. Their models started to represent scientific ideas and include logical limits, directed them to inquiry, and changed based on the empirical results during the study. Results of Spearman's rank correlation coefficient test revealed significant positive high relationship between the participants' models they constructed and their epistemologies of models. In other words, the preservice physics teachers reflected their epistemologies to their models. Model-based inquiry might facilitate this relationship. The conclusion drawn from the results is that pre-service physics teachers can put their beliefs into their practices in model-based inquiry environment.

Keywords: Model-based inquiry, model epistemology, model formation, pre-service teachers

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Introduction

Gobert and Buckley (2000) defines model formation as the construction of a model of some phenomenon by integrating pieces of information about the structure, function/behavior, and causal mechanism of the phenomenon, mapping from analogous systems or through induction. Involving learners in modeling practices can help them build subject matter expertise, epistemological understanding, and expertise in the practices of building and evaluating scientific knowledge (Ogan-Bekiroglu, 2007; Schwarz et al., 2009). To introduce modelling successfully in science teaching requires that teachers have an appropriate understanding of nature and function of models and their role in the accreditation and dissemination of scientific knowledge. Hence, the purposes of this study were to evaluate pre-service teachers' epistemologies of scientific models and their model formation in a model-based inquiry environment and to look for a relationship between their epistemologies and model formation.

Theoretical Framework

Theoretical underpinnings of this paper are the following: Pre-service teachers' epistemologies of models are structured as their beliefs, can be reshaped by instructional experiences, and may have relationship with their model construction (Hofer, 2000; Nespor, 1987; Richardson, 1996).

Methodology

Case study design (Stake, 1995) using quantitative and qualitative research methods was carried out for this study to compare participants' epistemologies of nature and function of models and their model formation. Participants were 11 senior pre-service physics teachers in the physics teacher education program at a state university, six of whom were females. The instruction in the course was based on model-based inquiry (MBI). Model-based inquiry is an instructional strategy whereby learners are engaged in inquiry in an effort to explore phenomena and construct and reconstruct models in light of the results of scientific investigations (Campbell, Oh & Neilson, 2012). The pre-service physics teachers were requested to generate initial models, develop inquiry questions, propose hypotheses, do investigations and conduct experiments to test their models. They constructed three dimensional models, revised their models and compared their final models with scientific models.

The pre-service epistemologies of nature and function of models were assessed with the help of the epistemology questionnaire used by Gobert and Discenna (1997). The questionnaire has nine open-ended questions. Their responses were evaluated as "sophisticated", "transitional", and "naïve" after the codes were derived from their answers. The participants' final models were evaluated by observing and asking questions to them. Their models were examined from three perspectives: the nature of models, the function of models, and the role of models in inquiry based on the rubric developed by Windschitl, Thompson and Braaten (2008). Their models were categorized as "congruent with experts' models", "intermediate models", and "congruent with novices' models".

In order to do non-parametric statistical analyses, scores 1, 2, and 3 were given to the participants' epistemologies and their models according to different levels mentioned above. Spearman's rank correlation coefficient test was performed to look for a relationship between participants' epistemologies of nature and function of models and their constructed models.

Results and Discussion

Majority of the participants (81.8%) thought that models were for perspicuity. More than half of the students (63.6%) wrote that a model comprised aspects of a subject. In addition, 54.5% of the students explored that a model could contain theory, hypothesis and formulas. Less than half of the participants (36.4%) could realize that models could change because of tentativeness of science and 54.5% of them understood that models could change because of scientific research and technology. The whole participants' overall mean value was 2.34 showing that 45.5% of the participants had transitional epistemologies while 45.5% of them had sophisticated epistemologies. That is, they tended to think that models were representations and tentative. This result is not consistent with the results that emerged from the research by Crawford and Cullin (2004) because none of their participants were in the highest level.

The participants created two models in two activities through the model-based inquiry instruction. Their final models for the second activity (overall mean is 2.13) were more close to experts' models than their final models for the first activity (overall mean is 1.86). They gradually constructed more quality models while experiencing model-based inquiry. Their models started to represent scientific ideas and include logical limits, directed them to inquiry, and changed based on the empirical results during the study. These findings are not much in line with the results of Windschitl and Thompson (2006) because most of the pre-service teachers in this study used models to ground their own empirical investigations. Additionally, unlike the participants of Schwarz and Gwekwerere (2007)'s study, great majority of the participants of this research recognized the role of models in inquiry.

Results of Spearman's rank correlation coefficient test revealed significant positive high relationship between the students' models they constructed and their epistemologies of models (r = .75, p < 0.05). That is to say, the preservice physics reflected their epistemologies to their models. Model-based inquiry might facilitate this relationship because learners are engaged in inquiry in an effort to explore phenomena and construct and reconstruct models in light of the results of scientific investigations during MBI (Campbell, Oh & Neilson, 2012).

Conclusion and Suggestion

Preservice physics teachers can put their beliefs into their practices in MBI environment. Therefore, teacher education courses would enable pre-service teachers to experience learning and teaching science by using MBI.

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Students and Teachers Training Program Effects in an Underprivileged School in Rural Areas in Lebanon

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Abstract
Despite recent improvements in pedagogy, schools located in underprivileged area still lack the basic teaching requirements; thus, improvement should be acquired. Classical teaching should be only mentioned in history. The classrooms should be based on student-centeredness where the teacher facilitates the learning process without imposing any knowledge on the students. This paper is based on the findings of a teaching training project the authors conducted in a semi-subsidized school in an underprivileged area in the Beqaa where most of its population is of a low economic status and they are in dire need for financial and economic improvement. As for the sample of this study, 6 teachers were met on weekly basis and observed while teaching 90 grade 1 students. The purpose is to train the students and teachers in underprivileged school in rural areas in Lebanon to spread awareness of the importance of reading in Cycle 1 and in order to enhance the reading methodologies of the teachers for better students' learning in English Language. The findings show that the teachers gained new and different theories about learning approaches. The teachers' awareness and comprehension about effective teaching and learning skills in relation with the constructivist learning approaches were promoted. The teachers were able to integrate different teaching approaches in the English daily lesson plan encouraging critical thinking skill development, applied different constructivist learning approaches in the English classroom. It was concluded that the training workshop series achieved its objectives and the teachers were introduced to new reading methodologies.

Keywords: Teaching methodologies, Training, Constructivist learning approach

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Introduction

In a previous study conducted in 2016 (Al Chibani & Hajal, 2017), a professional teaching training program was introduced to a semi subsidized school located in the Bekaa plain. The professional development program was supported by a grant awarded to the researcher from the United States of America Embassy in Beirut. The project was a teacher training program that aimed to enhance their teaching skills and introduce them to new methodologies adapted from the American Context the recipients have observed and worked on during the Fulbright for Junior Faculty Development Program they attended and participated in during summer 2015 in the United States of America. This research examined teachers' perceptions of the impact of their professional development experience on teaching practice (Ibid). The research concluded with high effective resulted where the training workshop series achieved its objectives and the teachers were introduced to new teaching methodologies which they started to use in their classrooms and this reflects in return on the students' achievements and motivation which is the end line objective of any learning process (Ibid). Moreover, the program influenced all of the participants' teaching skills in terms of introducing them to different theorist which help while developing their lesson plans while taking into consideration students with special needs. This was reflected through their teaching throughout the training program. Besides the results, the research ended up with several recommendations based on both the mixed methodology adapted and it was addressed to the trainers in order to obtain more effective results and implement in future training sessions. Two of the most important recommendations were to train the teachers another time in the beginning of the next academic year (2017), and to engage the students more in the training program. Moreover, the research wrapped up the research by a state of the research and future directions in order to benefit more from the results for future implications (Ibid).

Since the research conducted in 2016 can be considered a pre-pilot study for future studies in order to see the effect of the recommended professional development programs on the teachers and how much the constructivist learning approaches are integrated in the classrooms lesson plans and not only in the general objectives of the subject matter, this research is based on the previous results and recommendations and aims to promote more effective teaching of reading and learning in pedagogy through encouragement of thought, debate and discussion around recent pedagogical practice. Specifically it introduces the teachers to different theories about reading approaches, promote the teachers awareness and comprehension about effective teaching and learning skills in relation with the constructivist learning approaches specifically reading comprehension, integrate different reading approaches in the English daily lesson plan which encourage critical thinking skill development, apply different constructivist learning approaches in the English classroom, introduce students to the several methods for acquiring effective reading skills, and utilize technology to engage with classrooms as part of the constructivist learning approach. The purpose behind this research is to train the students and teachers in underprivileged school in rural areas in Lebanon in order to spread awareness of the importance of reading in grade 1 of Cycle 1 and in order to enhance the reading methodologies of the teachers for better students' learning in English Language.

Project Description

Introduction and description of the project

The professional development program was supported by a grant awarded to the researcher from the United States of America Embassy in Beirut. The project is a training program that aims to enhance the schoolteachers' teaching skills and introduce them to new methodologies adapted from the American Context in order to apply them in their classrooms during their reading comprehension classes. The school the program was conducted in is a semi-subsidized one where its population is of a low economic status and is in dire need for financial and economic improvement.

The project was divided into two parts: The first part was for the Cycle 1 English teachers employed in a school in the Bekaa plain of Lebanon to enhance their teaching skills while teaching reading comprehension and introduce them to different English teaching methodologies. The second part was be for 90 Grade 1 students of Cycle 1 to enhance their comprehension of the importance of reading and introduce them to different new methods for acquiring reading comprehension skills. In Cycle 1, 6 teachers teach English.

Objectives of the project

The Objectives behind the training program is to promote more effective teaching of reading and learning in pedagogy through encouragement of thought, debate and discussion around recent pedagogical practice. Specifically, the project aimed to:

- introduce the teachers to different theories about reading approaches,
- promote the teachers awareness and comprehension about effective teaching and learning skills in relation with the constructivist learning approaches specifically reading comprehension,
- integrate different reading approaches in the English daily lesson plan which encourage critical thinking skill development,
- apply different constructivist learning approaches in the English classroom,
- introduce students to the several methods for acquiring effective reading skills,
- introduce the American culture (use American stories and books) into the preschool curriculum in underprivileged schools and integrate it in the curriculum,
- utilize technology to engage with classrooms as part of the constructivist learning approach,
- and provide teachers with facilitates to be able to change/tweak in the curriculum in order to fit with disabled students and students with special needs.

Capacity Building

Every Saturday from the period allocated, January 7 till March 30, 2017, a capacity building workshop was conducted. The workshops were divided into three main parts.

a- Part one: Introduce the project, explore teachers' needs, and observe classes:
The trainer introduced the participants to the project and indicated the importance of participant in such professional growth programs. The trainer then discussed with the teachers their needs in order to enhance their teaching skills. Finally, by the end of the

first part of the project, the trainer was invited to attend several classes in order to build on the teachers' needs for more efficient training.

b- Part two: Introduce the teachers to different theories about learning approaches, promote the teachers awareness and comprehension about effective teaching and learning skills in relation with the constructivist learning approaches:

The trainer conducted capacity building workshop sessions in order to introduce the new teaching methodologies based on constructivist learning approaches and implemented these methodologies with the participants in their classrooms over a period of month.

c- Part three: Integrate different learning approaches in the English daily lesson plan which encourage critical thinking skill development and apply different constructivist learning approaches in the English classroom.

The trainer helped the teachers integrate the new learning approaches discussed in part two into their lesson plans and helped them implement them in their classrooms.

Literature Review

Any change in education requires change in the content of the course and teacher training in order for the objectives of the new content to be delivered properly to the students. Professional development training help the teachers enhance their knowledge and skills to facilitate and deliver the content in a more effective way (Tunio & Abdul Aziz, 2012). "Education is a systematics and scientific process of providing knowledge, skills, and experience to develop a human force as per requirement of society" (Ibid, 2012, p. 951). This cannot be accomplished without taking into consideration several methods and resources such as students, teachers, parents, administration and other individuals. The stakeholders that is the purpose of this study are the students and the teachers. Al Chibani (2016) stated that teachers perceive positive significance and attitudes towards training workshops especially those of long term. Such training programs allows the teachers to implement what they have been trained to do and evaluate the programs objectives directly on students which are the aim of the learning process (Al Chibani, 2016). Harwell (2005) agrees with Al Chibani (2016) when he states in his study that the teachers' behaviors change when exposed to long training programs in terms of improvement and enhancement of teacher skills. Harwell adds that change cannot be expected if teachers' attitude where no possible to such training programs. According to Ibid, when the teachers' motivation is positive, this reflects on the students' achievement too. Joyce and Showes (2002) agree too that when the teachers have the chance to implement what they have been trained to do, positive impact on students will be remarked. Al Chibani and Hajal (2017) indicate that training programs are beneficial and help the teachers gain more comprehension of the new learning and teaching approaches. Ibid adds that training programs leave positive impact on teachers when allowed to implement the trained material directly. Also the purpose of the teacher training program are to help the teachers enhance the content knowledge, modern methodology and use of advanced technology so that they fulfill and satisfy the objectives behind education (Tunio & Abdul Aziz, 2012). In their study, Al Chibani

and Hajal (2017) clarify that training programs help teachers gain more knowledge about the content which helps them prepare more effective lesson plans with variety of traditional teaching methodologies. Moreover, teacher training help give the education better since if trained properly, motivated and well trained they perform better in and outside the classroom. The improvement of the teachers lies in the hands of teacher education. The teacher success in the classroom lies on the effectiveness of the teacher training in the respect of acquired skills, knowledge, abilities and capabilities (Glaser, 1989). According to Aggarwal (1993) in order for a teacher training to achieve its objective, a positive attitude and learned skills are important. Rasal (1992) assures that it is important to have teachers training in order to enhance the quality of education. Moreover, effective professional development are the key for a more advances education skills that the pedagogies require these days. According to Darling-Hammond, Hyler, and Gardner, (2017), training should change the teacher practices and improvement in student learning outcome. Teacher training should enhance the teachers' knowledge and practice of active learning and thus it should help the teacher shift from the traditional to the nontraditional methodologies. While working collaboratively during the training, the teachers help their students become more positive and seek to change the culture and instructions (Darling-Hammond, Hyler, & Gardner, 2017).

Methodology

Both quantitative and qualitative methodologies were used in this project. Observation methods and focus group were adapted during the project in order to collect data. Cross analysis data was implemented through a method called triangulation in order to collect data from multiple sources of evidences for reliability purposes: Observation of classes, focus group with teachers, and focus group with students. Yin (2003) suggests to check for internal adapted consistency through triangulation (Yin, 2003). Even though there are several triangulation, this research adapted the "data triangulation" which allowed and pushed the researcher to get data from different sources (Patton as cited in Hajal, 2017).

Participants

The participants of this research are 6 English teachers from Cycle 1 enrolled in a semi-subsidized school in the Bekaa plain in Lebanon. Also, 90 grade 1 students were observed and applied the new methodologies while applying reading rules.

Data Collection

As mentioned in the previous section, triangulation process was used to collect data from multiple sources of evidences for reliability purposes. The first source was observation of classes, the second source was focus group interviews with teachers, and the third source was focus group interview with students.

The training program was conducted with 6 diverse Preschool Teachers in a semi-subsidized school in the Bekaa area in Lebanon who teach 90 grade 1 students of cycle 1. 7 students are disabled students: 5 students with hearing impairments and 2 students suffer epilepsy and are on medications. The continuous training program was conducted over a period of 16 weeks. The trainer met the teachers and students as a

group, listened to them, and discussed with them the different strategies they can implement in their classrooms with the limited facilities the school could afford due to the lack of financial benefits. Finally, a last meeting was held with the teachers and the students in order to hear their feedback concerning the program in a form of a focus group and to check whether the students have benefited and improved their reading skills. The aim behind the meeting was to evaluate the teaching training program holistically and to try to take each feedback into consideration in order to improve future programs.

A focus group was conducted with the teachers for recommending future implementations.

Observation

The researchers observed several grade 1 English classes in order to make sure the teacher started applying what was discussed and trained on during the training sessions. The researcher had a checklist with 17 criteria. Each criteria replicated in one way or another the skills the teachers were trained to use.

Focus group

After each training session, the researcher sat with the teachers in a form of focus group in order to elicit from them their feedback of previous techniques and skills used in their classrooms while teaching reading comprehension. In addition, one focus group interview was conducted with the grade 1 of cycle 1 students in order to detect whether their new knowledge is enhanced and was built on the previous one.

Data Analysis

Data analysis was done based on the data retrieved from both the diaries written throughout the program and the data retrieved from the checklist filled by the researchers after each observation.

The first method used was collecting all of the individual qualitative feedbacks of the teachers and students, summarizing them, and analyzing the results. The second method was analyzing and finding patterns between the observation checklists and the focus group interviews.

The second method was analyzing the 18 questionnaires filled by the trainer while observing 2 classes for each teacher were analyzed.

The following finding summary is based on a mixed methodology were a merge from the two methods used to collect the data of the baseline school visits to the participating cohort 1 public schools.

Findings

To start with the results obtained from the focus group interviews conducted with each of the teachers trained and the grade 1 students of cycle 1 showed significant impact on several learning aspects.

On the basis of the research study for detection of the effectiveness of teacher training programs, the following findings were drawn: - The majority of teacher training programs were successful in professional skills development for the trained teachers. - Learned methodologies were mostly not applied in the classroom and the same traditional practice was continued in the schools by the trained teachers. - Approximately the majority agreed that the objectives of the project were accomplished and that the students showed better results throughout the learning process when introduced to new constructivist teaching approaches. - The teachers agreed that introducing new teaching methodologies boosts the students' motivation and allows them to have higher order thinking.

"Using ICT in education is beneficial especially when there are facilities in the school that help us while teaching."

"Introducing new methodologies which rely on the student's prior knowledge and help them gain new ones allows the students to be independent."

"It is very important for the students to be independent and understand that the teachers are facilitators. This is what the project is all about."

As for the results obtained from the focus group interview conducted with the 90 students, positive feedback and motivation was obviously shown, the students agreed that they felt more exited and motivated to learn new concepts when the teachers started using variety of methodologies such as ICT and cooperative work. Said by a student, "I loved the way our teacher used the commuter to show us a video before we started reading the story." "I liked the circle time and especially how we helped each other in the reading out loud time," said by another student.

The checklists filled by the researchers while observing the classes were also analyzed and several patterns were detected between the observation checklists and the focus group interviews. These patterns indicate the reliability of the project and its long term impact. Both checklists and interviews indicated that the new methodologies trained were effective on the students' motivation and learning process. They showed that the teachers understood that the learning process should be student centered and not only focus on the teacher. The teachers' role is to guide the learning process and help the students acquire new skills and concepts. By breaking the reading process into a mini lesson and a reading workshop, the students gained more knowledge and learned to be independent and learned how to listen to each other's opinions and voices. It also helped them analyze and criticize the stories whether from the content or the illustrations. From both the checklists and the interview, it became clear that the teachers gained new and different theories about learning approaches. The teachers' awareness and comprehension about effective teaching and learning skills in relation with the constructivist learning approaches were promoted. The teachers were able to integrate different teaching approaches in the English daily lesson plan which encourage critical thinking skill development, applied different constructivist learning approaches in the English classroom.

Conclusion

As a conclusion, the training workshop series achieved its objectives and the teachers were introduced to new reading methodologies especially the reading workshop and mini lessons which they started to use in their classrooms and this reflects in return on the students' achievements and motivation which is the end line objective of any learning process. Moreover, the program influenced all of the participants' teaching skills in terms of introducing them to different theorist which help while developing their lesson plans while taking into consideration students with special needs. This was reflected through their teaching throughout the training program. This initial study adds to the literature in terms of encouraging teaching training in the public and semi subsidized sector which in return it affects positively the students' motivation, engagement in the classrooms and academic performance. Finally, the program has introduced the teachers to different theories about learning approaches, promoted the teachers awareness and comprehension about effective teaching and learning skills in relation with the constructivist learning approaches, integrated different learning approaches in the English daily lesson plan which encourage critical thinking skill development, applied different constructivist learning approaches in the English classroom, introduce the American culture (use American stories and books) into the preschool curriculum in underprivileged schools and integrate it in the curriculum, utilized technology to engage with classrooms as part of the constructivist learning approach, provided teachers with facilitates to be able to change/tweak in the curriculum in order to fit with disabled students and students with special needs, studied the impact of the training program on the teachers' skills perception, and studied the impact of the training program on the teachers' skills performance.

Thus, as a synthesis, several recommendation are addressed to the policy makers of education in order to promote the teaching and learning process to a higher level of thinking skills and in order to catch up with the 21st century dilemma.

Recommendation

A few recommendations based on the results are addressed to the policy makers in order to take into consideration while working on the curriculum reform.

To begin with, it is recommended that the teachers get continuing professional capacity building trainings in order to be introduced to the new teaching methodologies especially the constructivism.

Second, it is recommended that ICT frameworks to be integrated while preparing from training sessions to introduce and train the teachers about computer skills and to integrate ICT in education and understand its importance.

Third, enhance the principals' knowledge about different Leadership styles to promote new teaching methodology and encourage their teachers to apply them.

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Active Learning in Ethiopian School Context: Widely Phrased, Poorly Practiced

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Abstract

Active learning and student-centred teaching methods are growing trends all over the world. New teaching styles are brought in to replace traditional methods like lecturing and rote-learning. In Ethiopia, educational sector has been bringing in more active and student-centred learning since the introduction of the new education policy of 1994. However, the process has been very difficult for the teachers. The roots of rote learning, copying and lecturing are based in Islam and Orthodox Christian schools (Ferede & Haile, 2015; Semela, 2014), and these traditional lecture methods, in which teachers talk and students listen, still dominate most classrooms (Serbessa, 2006). The aim of this study was to clarify the reasons, why teachers in Ethiopian context feel it challenging to use student-centred teaching methods, and to explore how the practical arrangements, such as material or cultural surroundings, constrain or enable usage of student-centred methods. The theoretical framework of the study is a theory of practice architectures and the theories about active learning. The data have been collected by group discussions, interviews, videotapes and field notes. The findings of this study show that existing practical arrangements at the schools do not support the use of a student-centred teaching method. For example, a detailed curriculum, annual tests, a high student-teacher ratio and a lack of teaching and learning materials support teacher-led teaching and make it difficult to implement student-centred teaching methods. In order to launch active learning methods successfully in Ethiopian school context, major changes are needed in these arrangements and in teacher training as well.

Keywords: Active learning, student-centred learning, teaching methods, Ethiopia

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Introduction

This case study has been conducted in one Ethiopian village school and is a part of a wider, four-year long action research project that concentrated on developing new teaching methods based on student-centred learning. In this report I will focus on teachers' perceptions about using these methods and practical arrangements that either support or hinder using participatory and active teaching methods. The participants of the study are 23 primary and secondary school teachers.

The challenge of using the methods based on student-centred learning (SCL) is not new, because the educational sector in Ethiopia has been bringing in more active and student-centred learning since the introduction of the new education policy of 1994. Education Sector Development Program IV (MoE, 2010a) focuses on improving student achievements by enhancing the teaching–learning process and by transforming schools into motivating and child friendly environments. However, the process has been difficult for the teachers. The roots of rote learning, copying and lecturing are based in Islam and Orthodox Christian schools (Ferede & Haile, 2015; Semela, 2014), and these traditional lecture methods, in which teachers talk and students listen, still dominate most classrooms (Serbessa, 2006).

Reports (Abebe & Woldehanna, 2013; Gemeda, Fiorucci, & Catarci, 2014) show that other reasons for challenges in implementation of student-centred teaching in Ethiopian schools are the lack of institutional support and the fact that the curriculum was based on Western cultures and did not take traditional cultures and values much into consideration. Because the new curriculum was imposed from the top down, it did not consider comments from teachers, who are responsible for implementing the curriculum (Abebe & Woldehanna, 2013).

Lectures about student-centred pedagogy are given in teacher training colleges (TTCs), but these theories have not been effectively transferred to real context. Student-centred pedagogy is familiar for teachers at the theory level but transforming the knowledge into practice has been problematic. According to Serbessa (2009), "Little attempt is made by the policy document and other subsequent education strategy documents to give elaborations and to indicate how it can be translated into the teaching-learning process at the classroom level."

Research methods

In this study, I wanted to hear Ethiopian rural school teachers' perceptions about student-centred pedagogy and find the reasons why using these methods have been difficult. Data for this research consists of material collected through various kinds of methods. These methods were group discussions with all 23 teachers, focus group discussions with smaller groups, interviews with individual teachers, my field notes of observed lessons and videotapes. Two kinds of analyses were undertaken: first, a thematic analysis that identified key themes; and second, an analysis using a theoretical framework that focused on the discursive, material and social conditions (Kemmis & Grootenboer, 2008; Kemmis & Heikkinen, 2012) that enabled and constrained using the student-centred teaching methods at the Village School.

All discussions, interviews and my field notes were first analysed thematically (Eskola & Suoranta, 2008; Lankshear & Knobel, 2011). The analysis of discussions and interviews began by transcribing the English spoken and recorded data. At this stage I did not reduce the data. Those interviews that were held in Amharic, were translated and transcribed by the Ethiopian assistant. Because I am able to understand Amharic, I listened and checked those tapes again to make sure I understood them the same way as the person who had translated it. This process of listening to the tapes, reading and re-reading the transcripts helped me to become familiar with the whole data and to raise up a wider range themes.

After the thematic content analysis, I analysed the whole data again through the theory of practice architectures (for example, Kemmis & Grootenboer, 2008; Kemmis & Heikkinen, 2012). I continued by analysing sayings, doings and relatings. That meant, for example, examining what kind of language teachers use when they are talking about school or student-centred pedagogy, how the surrounding materials are arranged at the school or what are the relatings between the different stakeholders.

This theory aims to explain how social and educational practices are constituted in relation to the particular cultural-discursive, material-economic and social-political arrangements that support them. It has been used, for example, in Australia to research leading and mentoring practices (Bristol & Wilkinson, 2014), and in Finland to examine peer-group mentoring for teacher development (Heikkinen, Jokinen & Tynjälä, 2012) According to this theory, practices are organized as bundles of "sayings," "doings," and "relatings" that "hang together" (Kemmis, Heikkinen, Fransson, Aspfors & EdwardsGroves, 2014; Shatzki, 2002). According to this theory all practices are composed in three dimensions. These dimensions are (1) the semantic dimension (in which it is possible to say things and be understood); (2) the dimension of physical space-time (in which it is possible to carry out relevant activities); and (3) the social-political dimension (in which it is possible to relate appropriately to others in the practice).

These three elements of practice architectures prefigure and shape the distinctive sayings, doings and relatings characteristic of a particular practice. For instance, the practices at the school and changes in them are enabled by practice architectures. These architectures do not predetermine the practice, but they enable or constrain it (Kemmis, Heikkinen et al., 2014). When sayings, doings and relatings support the practice, change is possible. These three dimensions are often impossible to separate from each other. We think of "school," for example, in terms of shared language and shared ways of thinking about things. We also think of "school" in terms of shared spaces (classrooms, desks) and the various activities (teaching, doing sports) that compose its daily rhythms. We think of school in terms of a range of interconnected relationships between teachers, students and parents. "School" appears as some kind of whole, composed of a distinctive and overlapping semantic space, place in physical spacetime, and social space. (Kemmis, Heikkinen et al., 2014)

Research context

The physical context of this research is Ethiopia, which is in sub-Saharan Africa. Ethiopia is the second most populous country in Africa, with a population of more than 90 million (Central Statistical Agency of Ethiopia, 2015). Of this, 46. 4 million

(51%) are under the age of 18. In Ethiopia, one of the major challenges for teachers at the both primary and secondary levels is a lack of pedagogical knowledge, particularly in applying student-centred methods of teaching (Abebe & Woldehanna, 2013). The policy emphasizes innovative teaching and learning, but traditional lecture methods still dominate in most classrooms (Serbessa, 2006).

The way teachers are educated in teacher training colleges affects the way they teach their own students at schools. The same kind of obstacles are faced in Tanzania (Ottevanger, de Feiter, O-saki & van den Akker, 2005, as quoted by Soko, 2014), where the approach to teaching in secondary schools is characterised by memorisation of a large amount of verbal information, so as to pass examinations. Practical activities and demonstrations are hardly done at all, and the attitudes towards learning are focused on memorisation. The students carry this attitude forward into their own teaching practices. However, the move towards more practically focused, outcomes-based, school-focused teacher training can be seen in many teacher training systems worldwide (Moon & Wolfenden, 2012).

The setting of this research is a rural village in the southern part of Ethiopia. The regional state is called Southern Nations, Nationalities, and Peoples' Region (SNNPR). The Village School is one of the two schools in the village and there are 1569 students in grades 1-10 and 23 teachers at the school. Students go to school in two shifts, a morning shift and an evening shift, because of the large number of students and the small space available in the classrooms.

Student-centred learning

Definitions of "active learning" emphasize students' participating and collaboration. Learning by "doing" is a theme that many educators have stressed since John Dewey's argument that children must be engaged in an active quest for learning new ideas. Although there is a 'considerable disagreement and confusion about what student centred learning actually is' (Farrington, 1991, p. 16), many research emphasize for example activeness of the students and equal relationship between the teacher and the students. According to research (e.g. Cannon & Newble, 2003; Lea, Stephenson & Troy, 2000), student-centred learning includes

- the reliance on active rather than passive learning;
- an emphasis on deep learning and understanding;
- increased responsibility and accountability on the part of the student;
- an increased sense of autonomy in the learner;
- an interdependence between teacher and learner;
- mutual respect within the learner teacher relationship, and
- a reflexive approach to the teaching and learning process on the part of both teacher and learner.

For example, cooperative learning and problem-based learning are approaches that promote active learning. Emphasise is on the activity of students, and this pedagogy is often seen as opposite to teacher-centred learning. In Ethiopia, the term "student-centred" is not defined clearly in MoE publications, words like "child-friendly teaching," "learner-centred," "active learning" and "problem solving" are frequently mentioned (FDR Ethiopia, 2005). More detailed advice is given in the subject

curricula. For example, teachers of grade 1 and 2 students are encouraged to use a variety of teaching methods in their math lessons, including discussion, pupil activity and enquiry, along with games, puzzles, rhymes, songs and competitions (MoE, 2008).

The policy statement of the MoE (2008, 2010) emphasize a learner-centred approach, active learning, and problem-solving approaches at every class level. Teachers and schools are not only encouraged but demanded to plan and accomplish their Continuous Professional Development programme, which is supposed to concentrate on practicing student-centred and student activating methods. ESDP IV (MoE 2010a) emphasizes translating schools into genuine learning environments, which concentrate on increased student participation. Publications and workshops about active learning and student-centred pedagogy are offered to schools.

Although the employment of innovative teaching and learning is emphasized in the policy and teachers are encouraged to use student-centred teaching methods, traditional lecture methods, in which teachers talk and students listen, still dominate most classrooms (Serbessa, 2006). Frost & Little (2014) observed 776 math classes in Ethiopian primary schools, and their study showed that 74.5% used teacher-oriented teaching, 10.7% had student-centred learning and 14.6% involved off-task activity. Group tasks were observed only 2.7% of the time. Their study showed that students are more likely to be engaged in student-centred activities if they are taught by a female teacher with a Diploma. Observation also showed that in the Village School, teaching is mainly based on lecturing. In the lower grades the teachers used songs and small games, but in the upper grades teaching was based only on lecturing and copying.

Research (Dagnew & Asrat, 2016) regarding concerned teachers' perceptions toward quality of education in Northern Ethiopia showed that 30.1% of the respondents agreed that quality teaching is the extent to which teachers give good lectures and 63.1% of the teachers thought that quality learning is the extent to which students score high marks on the final examination. A majority (63.1%) responded that quality learning is the extent to which students recite what has been said in the class. The study also showed that some teachers tried to use active learning, but others still dominated the lecture teaching learning activities. These rates show that the delivery of student-centred learning is not yet to the desired levels in Ethiopia. (Dagnew & Asrat, 2016.)

Results

This research shows that current arrangements support more teacher-led teaching than student-centred learning methods. For example, the detailed curriculum and annual tests force teachers to use lecturing, because they have to cover the content which is very wide. If teachers use more time for group activities or dialogue during the lessons, they do not have time to teach the content that is enquired by the curriculum. The detailed curriculum with wide content, annual tests and large groups make student-centred teaching difficult.

> *Using participatory teaching methods with more than 60 students*
> *with no assistant teacher feels impossible. I have to follow our*
> *curriculum carefully and have no time for extra activities.*
> *Otherwise my students will not pass the annual tests. (male-teacher,*
> *secondary school)*

In Serbessa's (2006) study, when asked why teachers are using the lecture method strategy, 86.6% of teachers responded that the lecture method of teaching is more suited to the current curriculum and students' backgrounds. In the same research, most teachers (85%) complained that the teaching materials are full of large amounts of information to be memorised by students, and teachers feel responsible to cover the curriculum in the available time. The teachers (87.5%) replied that the only way they can "get through" their subject in the available time is to deliver it in a formal, didactic style, with as little "distraction" from students as possible. (Serbessa, 2006.)

The government's order to prepare detailed annual, weekly and daily lesson plans and close follow-up in classes of 60 - 80 students is considered extremely stressful. Teachers describe the situation in rural areas as demanding overall for the teaching process because of, for example, long distances and working hours, low conditions of class rooms, high temperatures and lack of materials. Therefore, teachers feel that they do not have the capacity for other teaching activities at the school, like CPD activities, follow-up of the students and preparing the lessons based on student-centred methods.

> *I walk six kilometres to work. It is very dusty and hot. I don't have a*
> *change to refresh myself before starting the job. We teach from*
> *morning to afternoon without rest. We don't have even a tea break.*
> *Especially in the dry seasons classrooms are very dusty and dirty.*
> *(male teacher, secondary school)*

Serbessa's (2006) study also found out that the classroom seating arrangement in Ethiopian schools do not allow teachers to employ active learning. Front to back seating arrangements encourage one-way communication and discourage students to discuss among themselves.

Lack of materials hinders the use of student-centred methods, especially at the governmental schools and rural areas. Lack of material like computers, proper libraries or text-books make the use of the SCL method difficult. In Ethiopia, 41.0% of primary schools and 92.8% of secondary schools have adequately organized libraries (EFA, 2015). Private schools, which collect student fees, have better possibilities of purchasing materials. At the Village School, teachers are in need of even basic materials like copy paper and pencils. An Internet connection is not available in the village.

> *We don't have enough text books. Four or five students are sharing*
> *a book and taking it home turn by turn. (female teacher, primary*
> *school)*

> *There is no modern technology, even we don't have enough chairs.*
> *Those things are harming the teaching process. We have shortage*

*of teaching aid and reference books. We have only outdated books
here. The number of text books and students is very different. We
don't have books for all of them. Teachers are struggling and doing
their best to use the limited source. (male teacher, primary school)*

In the study by Serbessa (2009), the majority of teachers (79.2%) replied that they were constrained by the lack of adequate resources from using an active learning approach. The available teaching aids were only used by teachers to assist their lectures. Student-centred learning methods emphasize the activity of students. They are supposed to take a responsible role in their learning instead of receiving information from the teacher. However, obedience and politeness are the overriding goals in bringing up children in Ethiopia, and children are taught to fulfil without question any request made by any older person. They are disciplined to ensure that they obey and respect the decisions taken by their elders and accept their place in a hierarchic social order. (Kjorholt, 2013; Serbessa, 2009.) According to Serbessa (2009), the traditional education and the Ethiopian tradition of child upbringing do not provide a good learning climate for employing an active learning strategy. Making students, especially girls, more active is difficult. Also the low level of students' fluency in spoken English makes it even more challenging.

Conclusions and recommendations

The theory of practice architectures, which was used in analysing the data of this research, showed that the teaching methods based on SCL and the prevailing arrangements at the schools do not "fit together." Either changes in these practical arrangements are needed, or the teaching methods have to be developed to be more suitable with the culture and not transferred straight from other cultures. Education does not happen in a vacuum, because the surrounding people, culture, history, material environment and political decisions affect the way how education is seen and conducted. For these reasons teaching methods developed in other contexts do not necessarily function in other surroundings. If changes in prevailing practices are wanted, it is necessary to provide new ideas, resources and new kinds of relational support to make those practices possible. In the context of this research, this means establishing new languages appropriate to the new ways of teaching, constructing spaces and times and physical resources appropriate to the activities based on student-centred learning. It also means connecting the people involved – students, teachers, parents and governmental representatives – in new networks of relationships. (Kemmis, Wilkinson, et al., 2014). All these have to be made in a genuine context with all stakeholders, including the teachers.

Changing the school culture is a slow and challenging process, because it demands changes not only in practical arrangements, but also in teachers' thinking. According to Kimonen and Nevalainen (2005) the opposition to reform may be a result of a conflict between the teacher's own beliefs and the new ideas. Changes in teachers' ways of teaching require changes in the beliefs, values, expectations, habits, roles, and power structures of the teachers. Therefore, reforms in curricula or equipment only do not necessarily have an impact on teaching (Kimonen & Nevalainen, 2005). In Ethiopia, the prevailing school culture and thinking of teachers are still based on very traditional values, where the teacher is believed to be the only source of information and the main value of education is to give students the basic knowledge and to

prepare them to manage well in the annual tests. The conflict between teachers' values and beliefs about education and the new ideas may be one reason why teaching methods have not changed during the last few years, despite of the MoE's attempt. One of the Village School teachers felt that negative attitude was one barrier for using teaching based on active learning methods. He said that students were used to receiving the information from the teacher and not in participating actively in the learning process. However, teachers described later that their students were highly motivated when teachers used SCL methods like group working or everyday-related tasks.

According to this study, in order to launch new teaching methods successfully in an Ethiopian school context, major changes need to be made. Curriculum reform is needed in any case on to a national level (Moon & Wolfenden, 2012) and it cannot be transferred from other kinds of cultures. For instance, the Village School teachers said that using methods like debate or dialog are difficult in the Ethiopian context because children are expected to obey the teacher and not to question an older person's speech. The teacher has to know beforehand where the discussion is going.   In addition, the culture of lecturing and rote learning derives from the time of church education and has strong roots in history. Changing this culture by bringing new methods does not happen in a short time.   According to Serbessa (2009), "The attitudes and expectations of society in general and of the family of the learner in particular affect how learning is viewed and how teaching is organized. These attitudes and expectations vary from society to society and attempting to copy a learning and teaching strategy from one society into another without trying to adapt it to the local conditions may not be successful."

I also suggest that the curriculum would be modified in order to support SCL methods. The current curriculum is very detailed and teachers are pressured to "cover the content." This makes using SCL methods difficult. Detailed annual tests force teachers to cover everything in the curriculum to prepare students for the tests instead of taking the time for deep learning and understanding. The implementation of active learning requires a certain amount of time to think and explore. Such strategies take more time than a straight lecture. (Serbessa, 2009.)

Teachers interviewed for the USAID report (2007) described that the way the curriculum is organized and the types of questions included in exams make it more difficult for them to devote time in class to organizing group work and other, more participatory activities, or to asking students to answer higher cognitive-level questions. Because of a detailed curriculum and examination system, there is pressure for teachers to cover as much material as possible and, when there is time, to ask students questions, to see if they can recall what they have been taught.

The number of students in most classrooms is too high in order to use group working, dialog or drama effectively as teaching methods. In Ethiopia, the student-teacher ratio is considered to be a critical indicator of quality education in all class levels (MoE, 2010b). Although the government targets for student– teacher ratios (primary schools 50, secondary schools 40) have been met in a majority of the schools in urban areas (MoE, 2010b), many children in Ethiopia are taught in very large classes (Abebe & Woldehanna, 2013). In order to implement teaching methods that activate students

more, either the student teacher ratio needs to be made smaller, assistant teachers have to be added or, as one solution, teaching space could be reconsidered.

I would suggest that attention continue to be given to sufficient and suitable teaching and learning materials. Currently there is lack of textbooks, teacher guidance books and basic materials like chalks, pencils and paper. If several students are using the same book together, their progress is insecure. Access to extra materials like library books or Internet would support students in finding information by themselves, but currently these are not available in the majority of rural schools. At present, 22.2% of secondary schools have Internet access, and about 76.1% of secondary schools have access to electricity (EFA, 2015). In addition, teachers said that the existing material are planned predominantly for an urban setting and are too detailed. The guidance books and the textbooks are now planned to prepare students for the annual tests, which increases the teachers' load to cover the content, and do not support them for using teaching based on students' activities, which often requires more time than lecturing. New material based on SCL pedagogy need to be made to replace the current material.

To be able to implement SCL methods, teachers need be encouraged to develop contextually suitable ways to teach based on student-centred learning pedagogy. Until now, teachers have not been part of the development processes, but have received orders given by the MoE from top-to-down. Their participation in policy, curriculum and textbook preparation and involvement in decision making processes would be useful because teachers best know the context and situation of the schools. Instead of a top-down approach, which leaves the teachers feeling that they do not have a real personal investment in the programme, teachers should be made participants in the development programmes. Instead of "one-shot" workshop, teachers could be encouraged to implement development projects in their own contexts (Gemeda & Tynjälä, 2015b). According to Kemmis, Wilkinson, et al. (2014), changing professional practice requires commitment of the practitioners of the profession, and the school system wanting to change its teachers must create very specific kinds of conditions under which teachers can change. In the situation like Ethiopian teachers are facing now, they should be considered as agents of the change, not just implementers of the government's new idea or policy.

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Cognitive and Informative Level of Knowledge About Puberty Among Primary School Pupils in the Czech Republic and in China

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Abstract
Knowledge is gained in the process of learning and represents the level of awareness. The cognitive and informative level of knowledge about puberty includes the amount and quality of relevant information. During puberty, reproduction abilities are achieved. Puberty represents an essential hormone process accompanied by physical changes and rapidly transforming psyche, during which individuals become aware of their own personalities. Puberty is a significant element of sex education in the European as well as global dimension. Children need to be prepared for puberty in time and in an appropriate manner; this should include all related associations and contexts. Timely readiness for puberty means that children have the required knowledge before its onset – during pre-puberty when they are in primary school. The objective of the present research study is to identify the level of knowledge about puberty among primary school pupils in the Czech Republic and in China. The research method to determine the knowledge about puberty among primary school pupils was the achievement test. The level of knowledge about puberty was tested by means of 9 items with open-ended answers. The content of the test items focused on the following: concept of puberty; definition of puberty; puberty age range; knowledge about physical changes in boys and girls; knowledge about other changes that puberty induces; significance of puberty in human life. The data were described by means of statistical procedures and descriptive statistics.

Keywords: Puberty, pupils, knowledge, testing, results

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Introduction

We believe that the urgency and social significance of the present educational research study is high. Puberty (Vágnerová, 2000) is a significant element of sex education (Comprehensive sexuality education, IPPF; Standards for Sexuality Education in Europe, 2010), which represents an important aspect in comprehensive education of children. On a general level, sex education is frequently questioned by some parents and the general public as being useless and ineffective in school. Although comprehensive sex education including the issue of puberty should be centred around the family, there is no guarantee that children will receive (provided that sex education does not become taboo) subjectively and socially appropriate information, attitudes and behaviour in the broadest sense of sexual behaviour. Children encounter sexual issues also in other domains of life, for example through the media, especially television, radio, internet, advertisements, books and magazines. These sources of information provide children with a large amount of picture and text information, but also hero imitation motives. Obviously, parents and all persons involved in the process of education and upbringing play an important role.

Sex education has three levels (Rašková, 2008, etc.) The cognitive level represents gaining knowledge (i.e. cognitive line in the form of basic information, knowledge, skills and habits). The emotional and relationship level represents model imitation (i.e. social line in the form of relationships, experiences, models, social learning through imitation). The skills, behaviour and habits level represents relationships (i.e. emotional relationships in the form of high-quality emotional background and interpersonal relationships). These three tiers overlap, cannot exist in isolation and none of them can be omitted. Emotional relationships of a child serve as a basis for patterns of behaviour; these models then become a pillar for gaining sexual knowledge. The development of all of these tiers is affected by a number of aspects; the family, school, external environment – world around the child.

Sex education including the issue of puberty affects a large part of the human life and is intended for the present and future life. Children should be aware of the responsibility for their behaviour, should be able to recognize danger, and should be able to adopt ways of safe behaviour in various situations. In addition to the basic knowledge relating to puberty including for example information about various parts of the human body, reproductive organs, anatomical, physiological and psychosocial aspects of human sexuality, children must develop ethical attitudes to sexuality and be able to avoid risky sexual behaviour. Most information is of a general nature (e.g. puberty, physical appearance, human development, reproductive organs, assertive behaviour, etc.) and is an important part of the general knowledge. From an educational perspective, the knowledge in the area of sex education facilitates coherent personality development. Knowledge (Janík, 2005) is gained in the process of learning and represents the level of children's awareness. Children not only have the right to information about puberty, this information also becomes a source of prevention against various risks.

All children need to be prepared for puberty in time and in an appropriate manner; this should include all associations and contexts related to this stage. Children should learn the required knowledge about puberty before its onset – during pre-puberty when they are in primary school. The present study focuses on younger school-aged children, i.e. primary school pupils. This is the age group of children between 6 and 7 to 11 to 12 years of age.

The cognitive and informative level of learning about puberty represents the tier of gaining knowledge and includes the amount and quality of relevant information (i.e. knowledge) that a child should learn or has learned. The issue of the level of knowledge about puberty among primary school pupils is contextually related to the present educational research. The objective of the comprehensive research was to identify the cognitive and informative level of knowledge about puberty among primary school pupils, and information about mutual communication about puberty among primary school pupils, their teachers and families. The research study involved primary school pupils from the Czech Republic, China and Spain. At the moment, research cooperation is being established with Sweden.

The authors of the present study have previously published their results concerning communication about puberty among Czech and Chinese primary school pupils, their teachers and families (Rašková, Provázková Stolinská, 2015, 2017; Rašková, Provázková Stolinská, Vavrdová 2015). The results were based on a questionnaire survey and revealed the children's perspective of communication about puberty with their peers, parents and teachers. In the area of verbal communication, friends and classmates together with the mother and teachers were more dominant sources of information about puberty than visual resources; if pupils communicated with each other about puberty, such communication took place sometimes or rarely; pupils considered puberty a normal and natural phenomenon; if pupils were able to assess their information about puberty, they considered it sufficient and were interested in learning more. The survey concerning communication about puberty was performed by means of a non-standardized questionnaire (Hendl, 2006; Chráska 2007). The questionnaire items were classified according to their content into questions about the source of information about puberty (i.e. from whom or from where pupils get information), and its frequency or method of communication (i.e. how often, what intensity, what obstacles, etc.) The questionnaire items included scaled, closed and semi-closed questions. The questionnaire items (numbered 10 – 21) followed the test items (numbered 1 – 9) which tested the level of knowledge about puberty.

This text informs about the results of an analysis of pupils' knowledge about puberty in the Czech Republic and China. This text focuses purely on the selected topic, which is a part of a wider research context. The research was carried out as part of Student grant competition at Palacký University in Olomouc (IGA_PdF_2018_011; Comparison of the cognitive and informative level of knowledge about puberty among primary school pupils in selected countries; principal investigator doc. PaedDr. Miluše Rašková, Ph.D.). The authors of the study tested the cognitive level, which is the pillar of general education of each person. The test involved 146 pupils in the Czech Republic; the sample was balanced in terms of gender. In China, the questionnaire survey included 135 students of the same age group and gender balance. The respondents represented the largest age group of 10 to 12 years.

Description of the research sample

| Category | Frequency table: COUNTRY (Research Czech x China) | | | |
	Count	Cumulative Count	Percent	Cumulative Percent
Czech	146	146	51,95730	51,9573
China	135	281	48,04270	100,0000
Missing	0	281	0,00000	100,0000

Figure 1: Respondents

Category	Frequency table: SEX (Research Czech x China)			
	Count	Cumulative Count	Percent	Cumulative Percent
boy	140	140	49,82206	49,8221
girl	137	277	48,75445	98,5765
Missing	4	281	1,42349	100,0000

Figure 2: Respondents by gender

Summary Frequency Table (Research Czech x China) Marked cells have counts > 10 (Marginal summaries are not marked)			
COUNTRY	SEX boy	SEX girl	Row Totals
Czech	71	71	142
China	69	66	135
All Grps	140	137	277

Figure 3: Respondents by gender and country

| Category	Frequency table: AGE (Research Czech x China)			
	Count	Cumulative Count	Percent	Cumulative Percent
9	5	5	1,77936	1,7794
10	72	77	25,62278	27,4021
11	126	203	44,83986	72,2420
12	64	267	22,77580	95,0178
13	8	275	2,84698	97,8648
14	2	277	0,71174	98,5765
Missing	4	281	1,42349	100,0000

Figure 4: Respondents' age

The research method to determine the knowledge about puberty among primary school pupils was an achievement knowledge test (Hendl, 2006; Chráska 2007). The level of knowledge about puberty was tested by means of 9 items with open-ended answers. The content of the test items focused on the definition of puberty (Test item 1); puberty age range in both genders (Test items 2 to 5); knowledge about physical changes in boys and girls (Test items 6 and 7); knowledge about other changes that puberty induces in both genders (Test item 8); significance of puberty in human life (Test item 9). The research sample was described by means of descriptive statistics; statistically significant differences in pupils' responses by countries were identified by means of the non-parametric U test (Mann-Whitney U Test).

Conclusions

The responses of all participants indicated the level of knowledge about puberty. The following tables and graphs show the results and indicate the level of pupils' knowledge about puberty (i.e. knowledge required to identify puberty; age range in both genders; physical and other changes in both genders; its significance in life). The responses were coded by means of numbers as follows: 2 = correct answer, 1= partially correct answer, 0 = incorrect answer. Test items with a missing answer were coded with the number 5.

Category	Frequency table: Q1 (Research Czech x China)			
	Count	Cumulative Count	Percent	Cumulative Percent
0	38	38	13,52313	13,5231
1	182	220	64,76868	78,2918
2	38	258	13,52313	91,8149
Missing	23	281	8,18505	100,0000

Figure 5: Test item 1 (What is puberty)
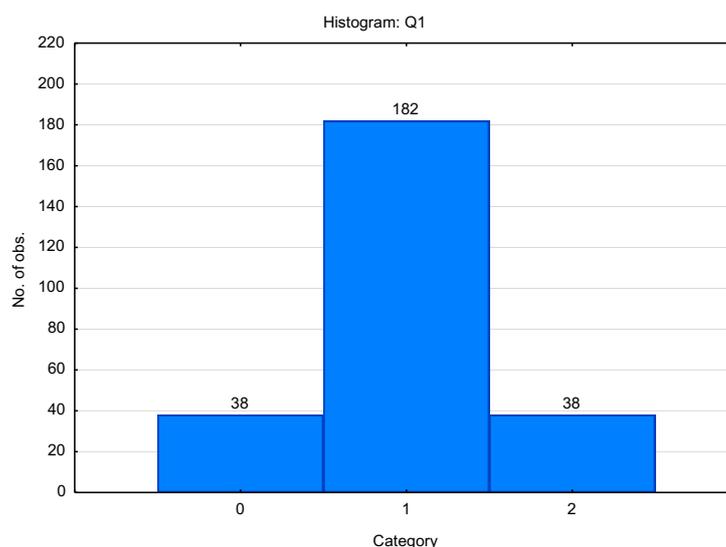
Graph 1: Responses to Test item 1 (What is puberty)

Puberty is a stage that follows pre-puberty, in which the reproductive capacity culminates. According to Czech professionals, the period of puberty is marked by the age of 13 to 15 years. Reproduction abilities are achieved later; in girls after the onset of regular ovulation cycle and regular menstruation, in boys after the development of secondary sex characteristics is completed. Puberty can thus be identified as a principal hormonal process of physical changes. A child changes to an adult person who is from a biological perspective ready for reproduction. This process can be identified as maturing. However, the process of maturing should not be assessed only from a biological perspective but also from the perspective of psychological changes that take place along biological changes. Biological and psychological changes are also accompanied by social changes, i.e. gaining a new social status. All changes that take place in the period of maturing are referred to as pubescent changes. Most of the responses were in the category of partially correct answer. This shows that the respondents do not understand puberty in a comprehensive way. They do not associate the achievement of reproduction ability, full sexual maturity and completion of physical growth with psychological and social changes.

| Category	Frequency table: Q2 (Research Czech x China)			
	Count	Cumulative Count	Percent	Cumulative Percent
0	48	48	17,08185	17,0819
1	94	142	33,45196	50,5338
2	139	281	49,46619	100,0000
Missing	0	281	0,00000	100,0000

Figure 6A: Test item 2 (Onset of puberty among boys – age)
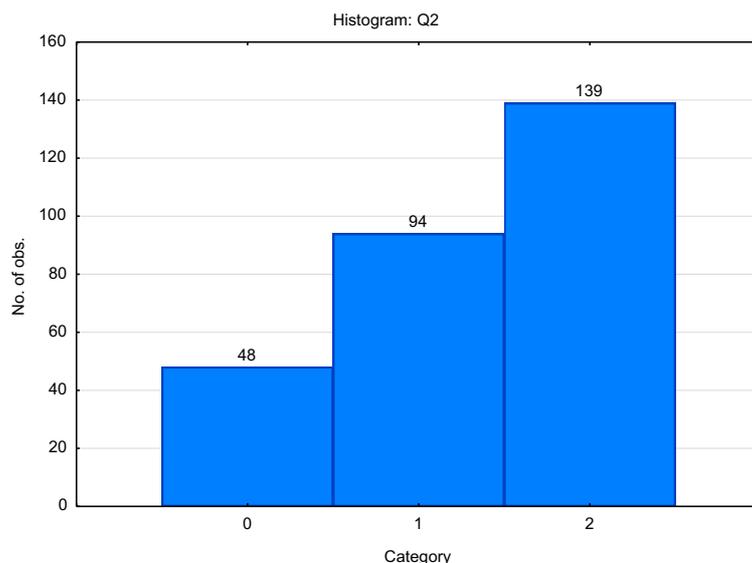
Graph 2A: Responses to Test item 2 (Onset of puberty among boys – age)

Frequency table: Q3 (Research Czech x China)				
Category	Count	Cumulative Count	Percent	Cumulative Percent
0	39	39	13,87900	13,8790
1	39	78	13,87900	27,7580
2	203	281	72,24199	100,0000
Missing	0	281	0,00000	100,0000

Figure 6B: Test item 3 (Onset of puberty among girls – age)
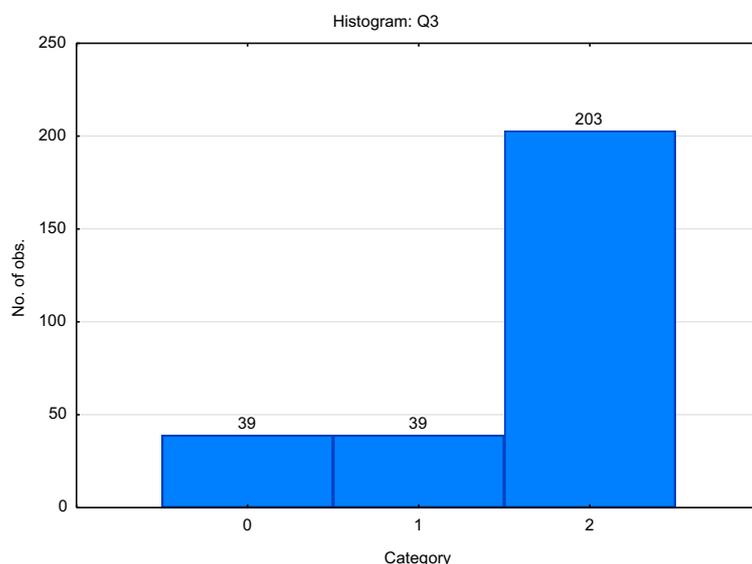
Graph 2B: Responses to Test item 3 (Onset of puberty among girls – age)

The issue of puberty is associated with a period referred to as pubescence and maturing in a broader sense. As mentioned above, according to Czech professionals, the period of puberty is marked by the age of 13 to 15 years. This period comes after pre-puberty, which is defined as a transition from childhood to adulthood and precedes puberty. Although a number of professionals have different opinions about the period of pre-puberty and puberty, the age range of pre-puberty is usually eight to eleven years of age, while the age range of puberty is

eleven to fifteen years of age. According to professionals, the main features of pre-puberty (also referred to as pre-pubescence) include the first signs of sexual maturing, occurrence of secondary sex characteristics, and a considerable increase in height. The period of pre-puberty, which is a period of preparation for puberty, is marked by vast differences between children in terms of physical and mental development. In terms of gender differences, pre-puberty in girls takes place between 11 and 13 years of age, while in boys, physical development is delayed by 1 or 2 years. Most of the responses were in the category of correct answer, which suggests that the respondents are knowledgeable about the onset of puberty in boys and girls.

Category	Frequency table: Q4 (Research Czech x China)			
	Count	Cumulative Count	Percent	Cumulative Percent
0	98	98	34,87544	34,8754
1	116	214	41,28114	76,1566
2	67	281	23,84342	100,0000
Missing	0	281	0,00000	100,0000

Figure 7A: Test item 4 (End of puberty among boys – age)
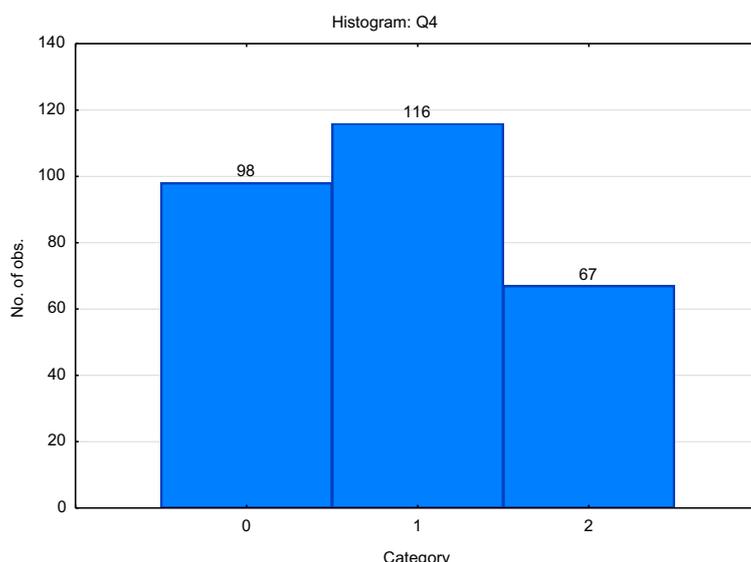
Graph 3A: Responses to Test item 4 (End of puberty among boys – age)

Category	Frequency table: Q5 (Research Czech x China)			
	Count	Cumulative Count	Percent	Cumulative Percent
0	166	166	59,07473	59,0747
1	34	200	12,09964	71,1744
2	81	281	28,82562	100,0000
Missing	0	281	0,00000	100,0000

Figure 7B: Test item 5 (End of puberty among girls – age)
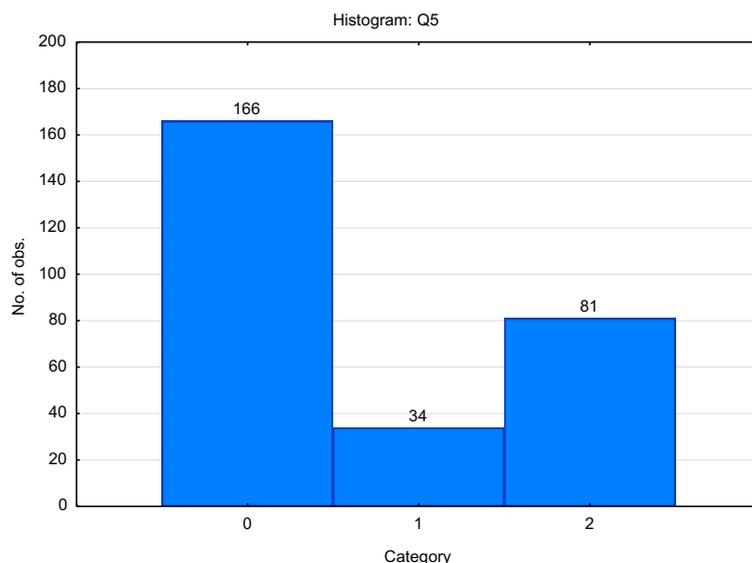
Graph 3B: Responses to Test item 5 (End of puberty among girls – age)

Unlike the area concerning the onset of puberty in both genders, where the responses confirmed pupils' knowledge in this area (see text above), their awareness about the end of puberty in both genders is worse. This area was dominated by partially correct answers and incorrect answers.

| Category | Frequency table: Q6 (Research Czech x China) | | | |
	Count	Cumulative Count	Percent	Cumulative Percent
0	35	35	12,45552	12,4555
1	160	195	56,93950	69,3950
2	40	235	14,23488	83,6299
Missing	46	281	16,37011	100,0000

Figure 8A: Test item 6 (Physical changes in puberty in boys)
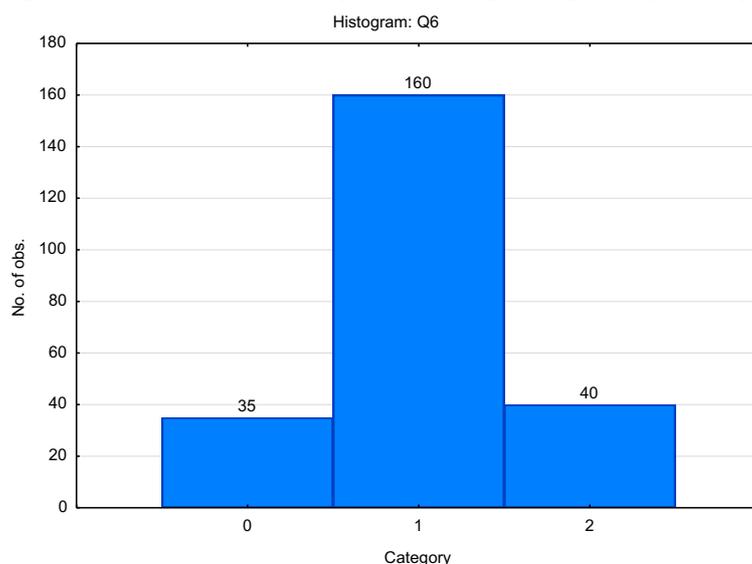
Graph 4A: Responses to Test item 6 (Physical changes in puberty in boys)

| Category | Frequency table: Q7 (Research Czech x China) | | | |
	Count	Cumulative Count	Percent	Cumulative Percent
0	40	40	14,23488	14,2349
1	157	197	55,87189	70,1068
2	32	229	11,38790	81,4947
Missing	52	281	18,50534	100,0000

Figure 8B: Test item 7 (Physical changes in puberty in girls)

Graph 4B: Responses to Test item 7 (Physical changes in puberty in girls)

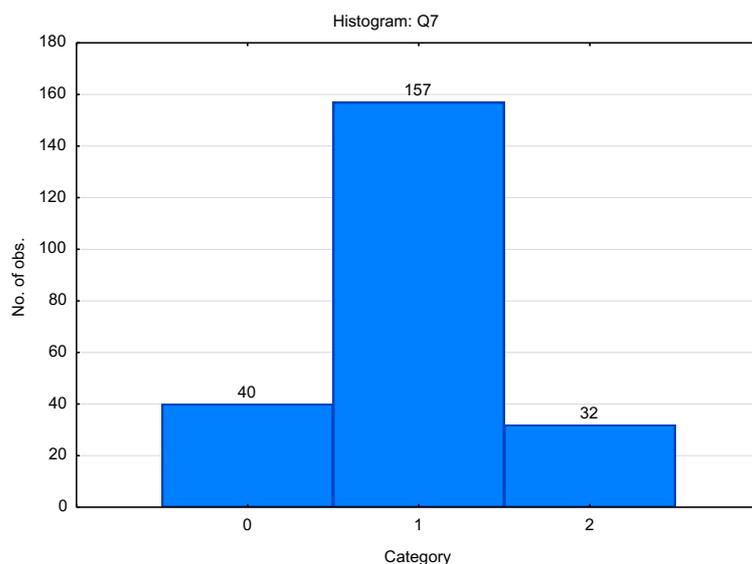During puberty, the signals concerning the required hormonal changes are sent from the brain to the reproductive organs, which stimulate the growth, development of functions and other changes in the brain and other organs. In line with the hormonal process of physical changes in both genders, during which the reproductive organs mature and start to produce sex hormones (sperms or ova), changes in the physical structure take place. During the period of puberty, growth is decelerated or even stopped in both genders, changes in the physical structure take place, secondary sex characteristics appear including pubic hair in the armpit, skin changes and the development of acne. Changes in boys further include thickening of the body and muscle growth, pubic hair on the scrotum, hair on the face and voice change. Changes in girls include hair in the pubic area, gaining female shape of the body and growth of breasts. Most of the responses were in the category of partially correct answer, which suggests basic awareness in the area of physical changes during the period of puberty in both genders. The responses included only various incomplete combinations of changes.

| Category | Frequency table: Q8 (Research Czech x China) | | | |
	Count	Cumulative Count	Percent	Cumulative Percent
0	69	69	24,55516	24,5552
1	152	221	54,09253	78,6477
2	6	227	2,13523	80,7829
Missing	54	281	19,21708	100,0000

Figure 9: Test item 8 (Other changes in puberty in boys and girls)
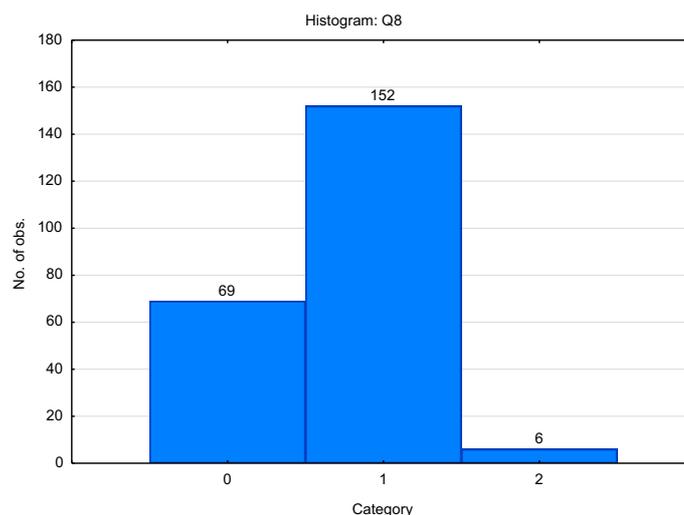
Graph 5: Responses to Test item 8 (Other changes in puberty in boys and girls)

The period of puberty is marked not only by physical changes but also significant psychological changes including becoming aware of one's personality. Puberty is a period of searching for and building one's identity. The manifestations of psychological changes in puberty include refusal of a subordinate role, which changes the social role of an individual and causes attacks against authorities including parents and teachers. The attitude to the school and the teacher changes as well, the teacher is no longer considered a formal authority, only when there is something to be impressed by. Generally, adolescent children want to participate in decision making about matters that relate to them, they start to assess their parents and other adults in a critical way. A significant aspect in the life of an adolescent is spending leisure time. They want to spend time with their peers. Their emotional relationships start to evolve including love and affection. For some individuals puberty may become an impulse for artistic expression, reading complex literary works, doing attractive sports, interest in mysteriousness, romance, nature, and other activities. Pubescents tend to show greater emotional instability. Their self-evaluation changes, they tend to be touchy and vulnerable. According to psychologists, emotional instability is primarily a consequence of hormonal changes. Secondarily, instability may be supported by psychological changes and changes in interpersonal relationships. In puberty, the way of thinking changes. In puberty, individuals start to think hypothetically (at the level of formal logical operations). This change affects their overall attitude to the world but also to themselves. The answers also suggest the respondents' awareness of other changes in puberty apart from biological changes. Most of the responses were in the category of partially correct answer. The respondents indicated only various incomplete combinations of other changes. The most frequent responses included the need to spend leisure time with peers, aspects associated with emotional instability, love and affection, and the need to participate in decision making on matters that relate to them.

Category	Frequency table: Q9 (Research Czech x China)			
	Count	Cumulative Count	Percent	Cumulative Percent
0	81	81	28,82562	28,8256
1	138	219	49,11032	77,9359
2	13	232	4,62633	82,5623
Missing	49	281	17,43772	100,0000

Figure 10: Test item 9 (Significance of puberty in life)
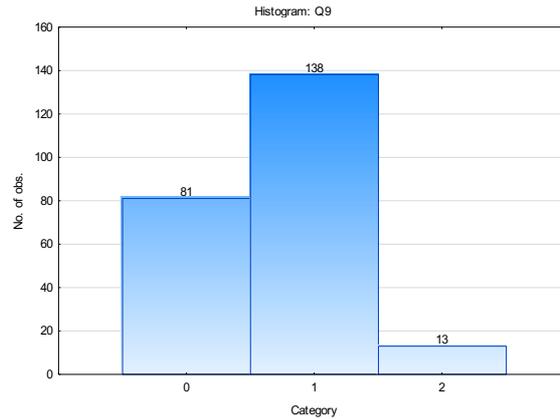
Graph 6: Responses to Test item 9 (Significance of puberty in life)

As was mentioned in connection with the results concerning the definition of puberty by our respondents (see above), the period of adolescence is a broadly defined stage of life. On the one hand, this stage of life is marked by the so-called first signs of sexual maturing including physical growth, on the other hand by achieving the reproduction ability, full sexual maturity and completion of physical growth. However, the process of maturing must not be assessed only from the biological perspective but also from the perspective of psychological changes that take place along biological changes. Biological and psychological changes are also accompanied by social changes, i.e. gaining s new social status. The respondents understand the significance of puberty, which is confirmed by most of the responses in the category of partially correct answer. However, the respondents do not think about the significance of puberty in a comprehensive perspective but rather in various combinations of the biological, psychological and social areas.

For clarity purposes, the following graphs show pupils' aggregate responses to the test items by countries.
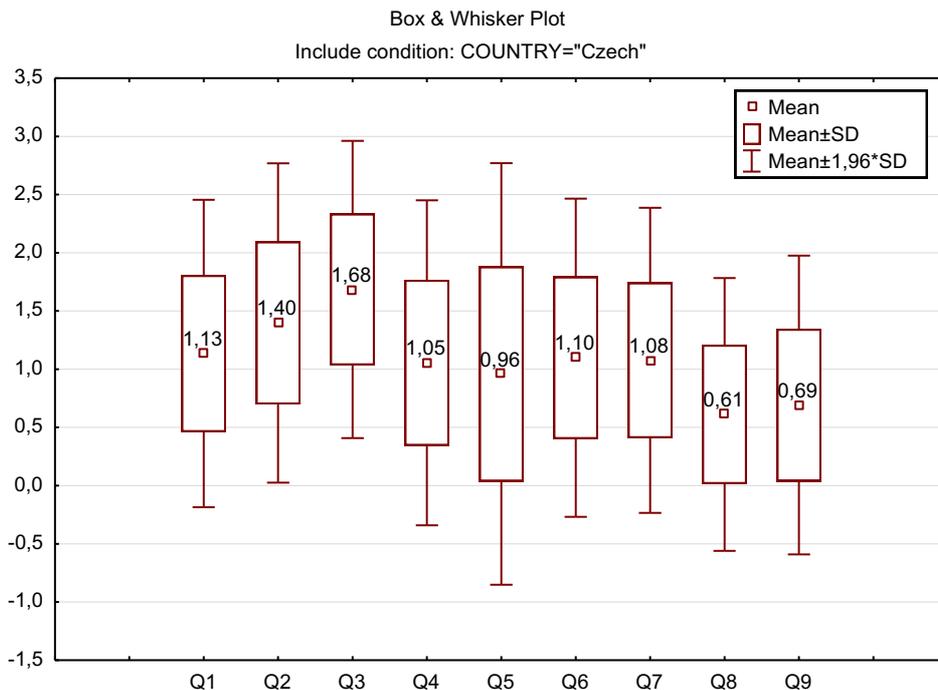
Graph 7: Aggregate pupils' responses to test questions – Czech Republic
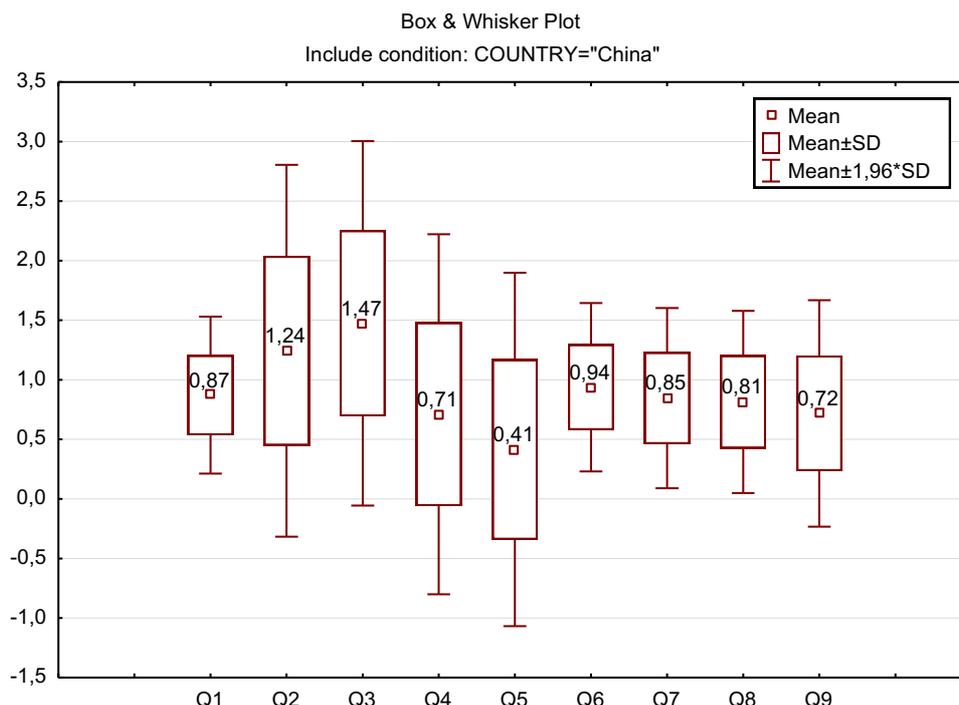
Graph 8: Aggregate pupils' responses to test questions – China

The test of differences in the pupils' responses (Mann-Whitney U Test) between individual countries revealed statistically significant differences.

variable	Mann-Whitney U Test (w/ continuity correction) (Research Czech x China) By variable COUNTRY Marked tests are significant at p <,05000								
	Rank Sum Czech	Rank Sum China	U	Z	p-value	Z adjusted	p-value	Valid N Czech	Valid N China
Q1	18187,00	15224,00	6446,000	3,120	0,002	3,893	0,000	126	132
Q2	21519,00	18102,00	8922,000	1,370	0,171	1,498	0,134	146	135
Q3	21944,00	17677,00	8497,000	1,995	0,046	2,538	0,011	146	135
Q4	23069,50	16551,50	7371,500	3,648	0,000	3,903	0,000	146	135
Q5	23683,50	15937,50	6757,500	4,551	0,000	5,192	0,000	146	135
Q6	15351,00	12379,00	5938,000	1,833	0,067	2,229	0,026	122	113
Q7	14804,50	11530,50	5314,500	2,463	0,014	3,010	0,003	118	111
Q8	10377,50	15500,50	5021,500	-2,769	0,006	-3,379	0,001	103	124
Q9	11774,00	15254,00	6314,000	-0,672	0,502	-0,777	0,437	104	128

Figure 11: Testing of the differences in pupils' responses by countries

As shown in the table above, statistically significant differences in the score of the responses between pupils from China and the Czech Republic were observed in Test items 1, 3, 4, 5, 6, 7 and 8. In all of these items (except Q8) Czech pupils achieved a statistically significantly higher score than pupils from China.

To provide a comprehensive view of the proportion of numbered responses among Czech and Chinese pupils, the graphs below show a comparison of all test items.

Categorized Histogram
Variable: Q1
COUNTRY: Czech Q1 = 126*1*normal(x; 1,1349; 0,6735)
COUNTRY: China Q1 = 132*1*normal(x; 0,8712; 0,3362)
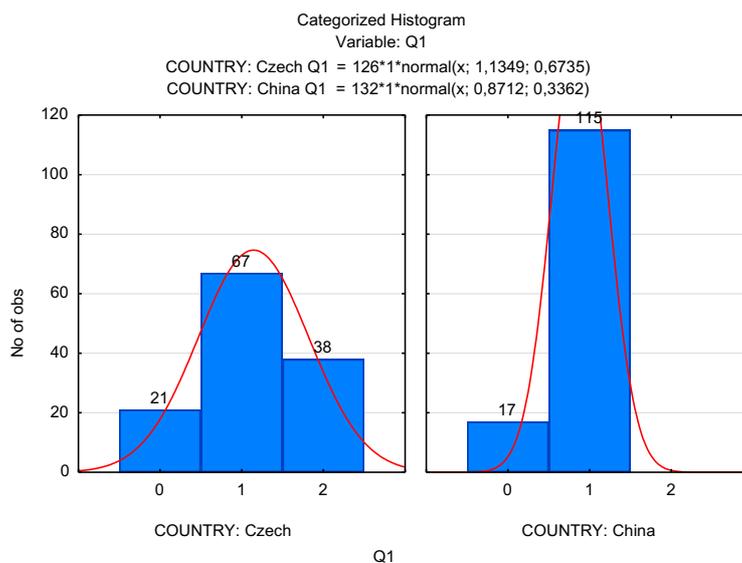
Graph 9: Proportion of numbered responses (Test item 1)

Categorized Histogram
Variable: Q2
COUNTRY: Czech Q2 = 146*1*normal(x; 1,3973; 0,6996)
COUNTRY: China Q2 = 135*1*normal(x; 1,2444; 0,7961)
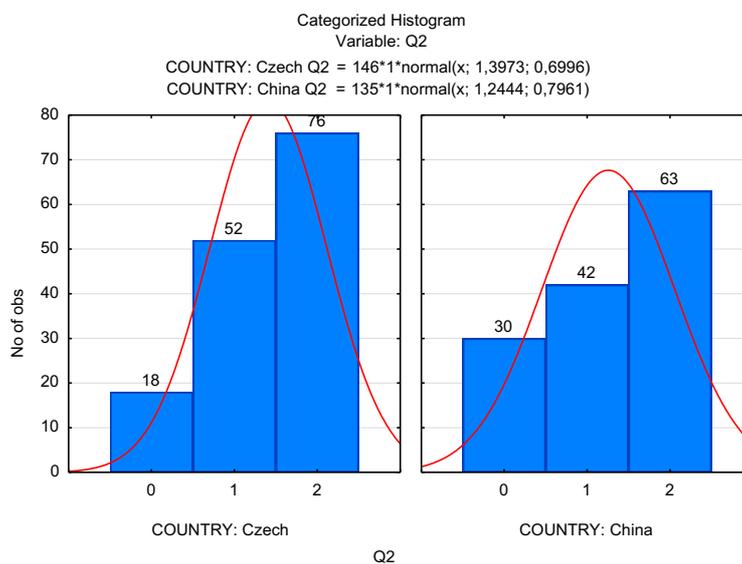
Graph 10: Proportion of numbered responses (Test item 2)
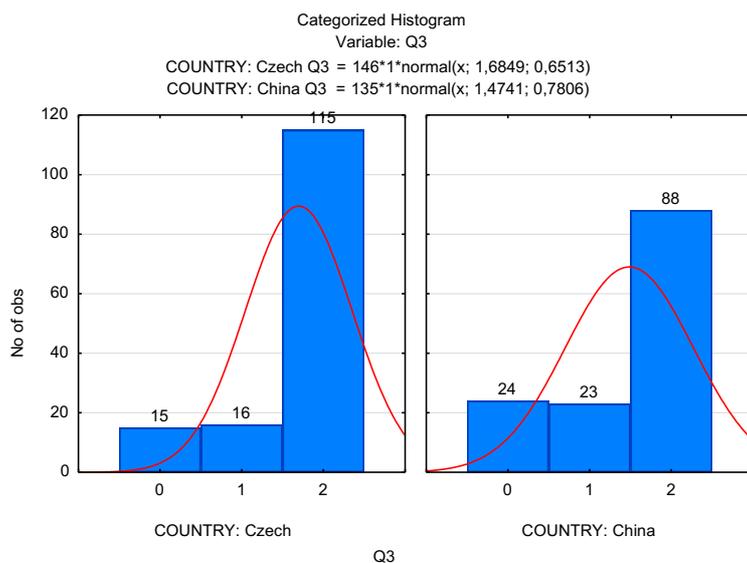
Graph 11: Proportion of numbered responses (Test item 3)
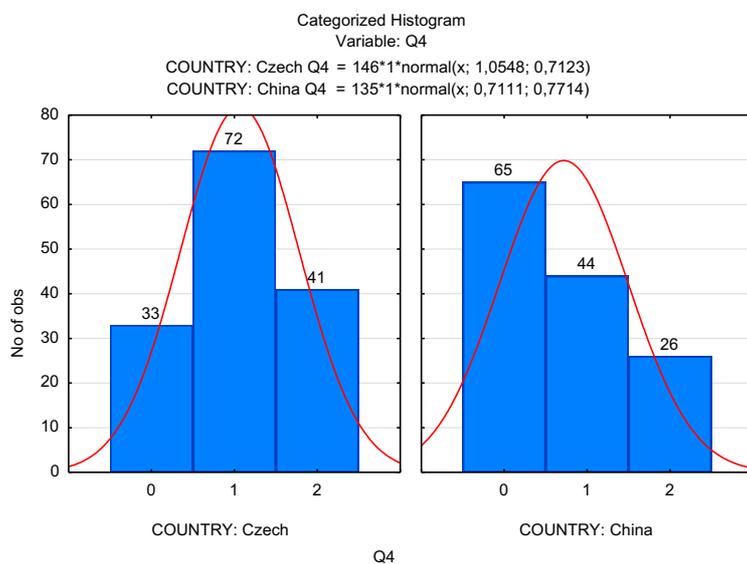
Graph 12: Proportion of numbered responses (Test item 4)
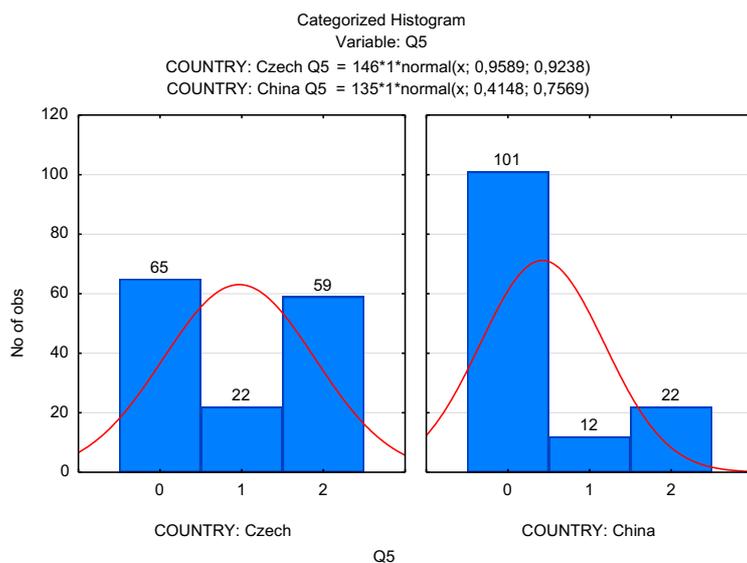
Graph 13: Proportion of numbered responses (Test item 5)
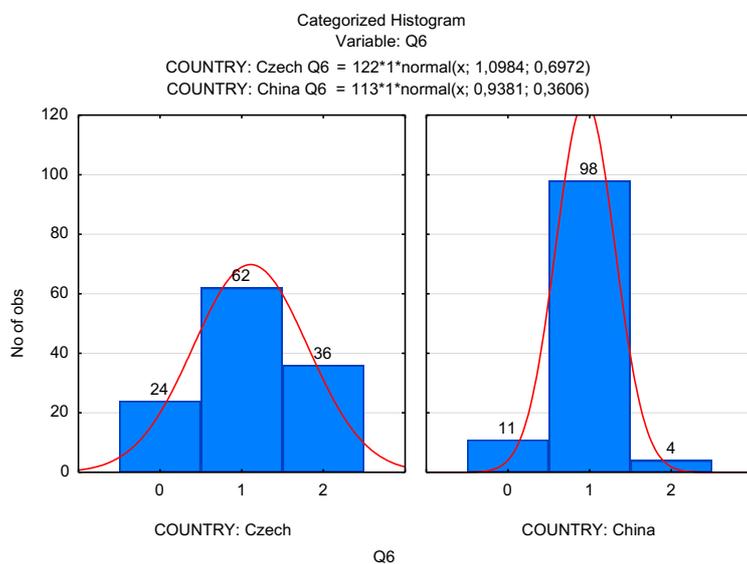
Graph 14: Proportion of numbered responses (Test item 6)
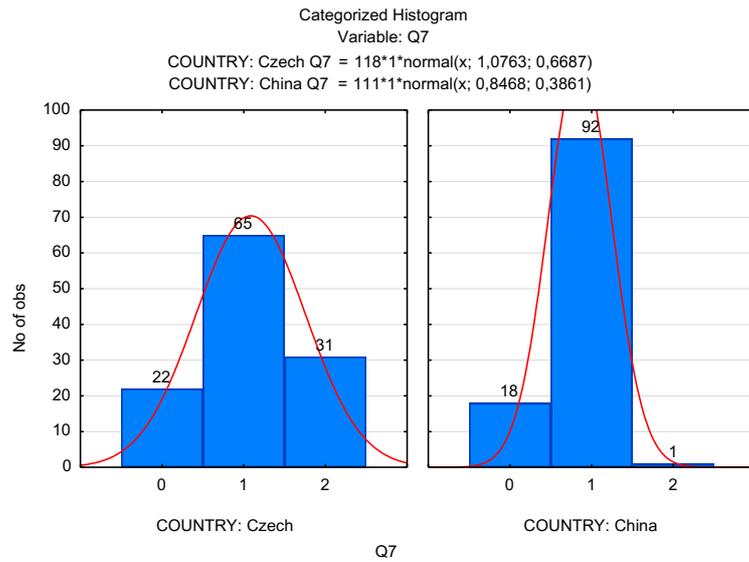
Graph 15: Proportion of numbered responses (Test item 7)
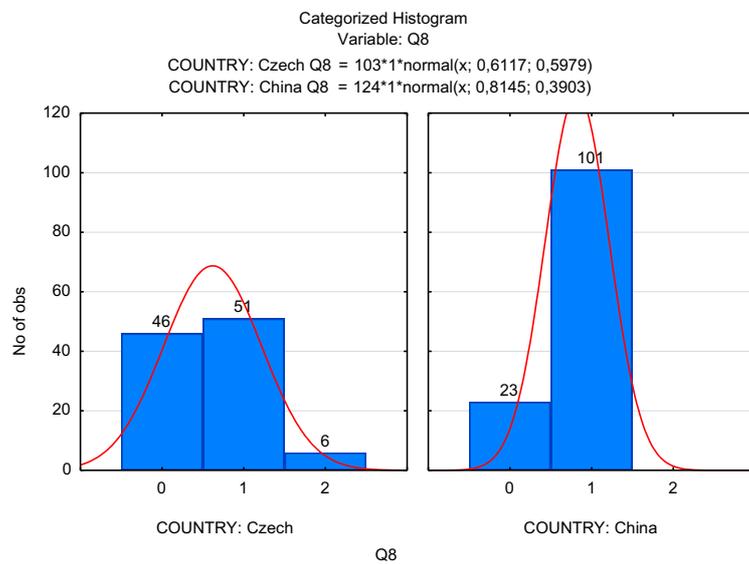
Graph 16: Proportion of numbered responses (Test item 8)
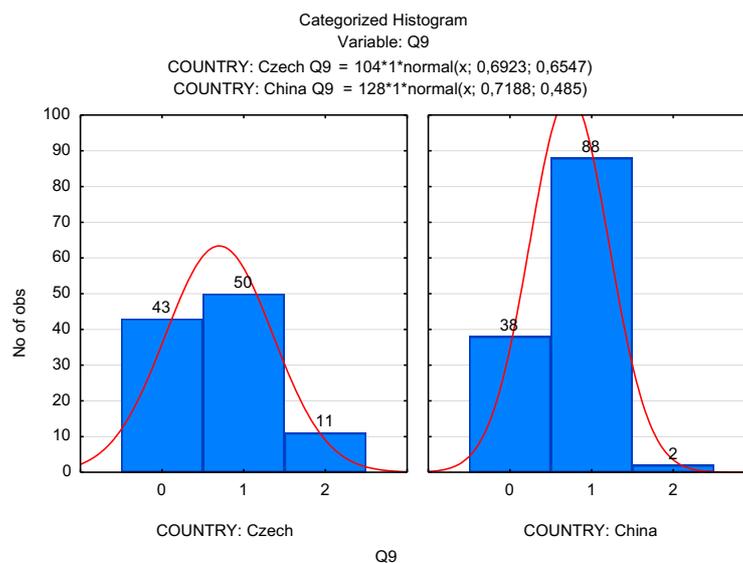
Graph 17: Proportion of numbered responses (Test item 9)

Based on the data obtained from the respondents, it can be concluded that pupils are informed about puberty before its onset. Their knowledge of puberty suggests only partial awareness, which is manifested as incomplete understanding of relevant associations and contexts. From the perspective of pupils, the biological aspect and its importance for future reproductive life of each person is not placed in context with other changes. Most frequently, pupils associate puberty with psychosocial changes. It is desirable to strengthen pupils' knowledge in terms of a comprehensive approach to all changes in the biological, psychological and social areas, taking into account the specificity of both genders.

Parents, friends or classmates cannot play the primary role in the formation of knowledge, attitudes and behaviour, because they do not guarantee the relevance of information that they provide. The generation of contemporary Czech and Chinese parents has not undergone any conceptual and systemic sex education in their families or in school, which would lay down the basis of the issue of puberty and communication about puberty. For this reason, the current generation of adults lacks adequate life experience and often lacks the necessary knowledge. We have mentioned that the issue of puberty and communication about puberty should be centred around the family, but it is impossible to guarantee that in the family the child will be exposed to subjectively and socially appropriate information, attitudes and behaviour in a sufficiently wide context.

Teachers in schools can significantly contribute to the acquisition of knowledge about puberty. Both Czech and Chinese educational systems have the issue of puberty embedded in their curricula. In the Czech system of education, puberty is defined in the general curricular document in terms of concept and content. Teachers should be professionally and didactically prepared for education about puberty. Recently, Chinese education has been subject to a considerable change as a result of the introduction of a new subject – sex education. Sex education, including the issue of puberty, has become a compulsory subject in some Chinese schools, primarily in Beijing and Shanghai; compulsory courses on this topic have even been introduced in some Chinese universities. Sex education including the issue of puberty must be delivered in schools in a qualified way, taking into account various educational and psychological particularities of pupils and respecting humane approaches and ethical principles. Communication about puberty in a school environment is a professional

responsibility of the teacher (Štěrbová, Rašková, 2014). The role of the school is, through the teacher, to provide the knowledge about puberty, but also to lay the foundations of attitudes and guidelines for decision making.

Acknowledgements

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Teachers' Attitudes Toward Including Children With Special Educational Needs in Private Schools in Egypt

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Abstract

The purpose of this study is to explore the attitudes of general education teachers toward educating special needs students in inclusive classrooms in Egyptian private schools. It seeks to investigate the factors that might affect their views and attitudes towards inclusive education. In addition, it suggests some recommendations for having a successful inclusive system in Egypt. The study was conducted in three private schools in Cairo. The participants were ten general education teachers who were chosen based on their involvement in inclusive practices or teaching special needs students in their classrooms. The methodology utilized was the qualitative approach through conducting one to one semi structured interviews with the teachers. The findings of this study showed that most of the teachers demonstrated positive attitudes toward including special needs students in their classrooms. While two teachers out of ten held negative attitudes toward inclusion. Furthermore, teachers were found to hold more positive attitudes when there are a small number of students with special needs in each class and when their cases are not severe. In addition, the results indicated that school administration support, professional development and knowledge, severity of the disabilities, and teacher parent collaboration were common themes developed among the teachers to indicate the factors that affected their attitudes toward inclusion. The results of this study could raise awareness among policymakers of the importance of implementing inclusive education that suits all students in Egypt.

Keywords: Inclusive education, teachers' attitudes, special needs children, private schools, Egypt

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Introduction

Education should serve all students regardless of their differences in gender, race and disability. By placing them in the same classrooms, all students will learn from each other's diversities and they will be exposed to new experiences (United Nations Development of Economic and Social Affairs., 2016). Within a group of students, one can find that a few of them suffer from mental or physical disabilities known as "special needs". The Egyptian Ministry of Education defines students with special educational needs (SEN) as those who need special education for their development and progress which, in turn, goes beyond the common schools' resources (Hassanein, 2015). However, from an international perspective, children with special needs are those who experience greater learning difficulties than other children from the same age group. Additionally, special needs children are those who have a certain disability that prevents them from learning and from using the available educational facilities in the same way as their peers can (Education Act, 1996 as cited in Fredrickson & Cline, 2009).

Numerous legislations have called for the right to educate special needs students alongside their peers in public schools. The first initiative started in the United States in 1975 with the Education for All Handicapped Children Act. This law stated the right for all handicapped students to receive "free appropriate education" in public schools (EHA, 1975). Then, in 1990, the Individuals with Disabilities Education Act (IDEA) stated that schools should provide free education to all students in the "least restrictive environment" (IDEA, 1990). Moreover, in 2004, the previous law was reviewed to add that only children with severe disabilities will be educated in special education classes or separate schools. However, in this case, regular schooling will not be able to fulfill the satisfying outcomes (IDEA, 2004 as cited in Cagney, 2009). Accordingly, education for special needs students has been transformed from segregation to what has become known as inclusive education.

The last two decades have witnessed the appearance and evolution of the term "inclusion" which calls for the integration of children with special needs in mainstream schools. There is no clear universal definition of the concept of inclusion in Arab countries, including Egypt. However, Blecker and Boakes (2010) defined inclusive education as "educating students with disabilities in general education programs with their non-disabled peers" (p. 435). According to Laluvein (2008), the term "inclusion" not only refers to relocating special needs students coming from special education contexts into regular classes but also it "implies a whole school approach to social relations and production of meaning reached through processes of negotiation between parents, teachers and children" (p. 35).

Many research studies have suggested that inclusive classrooms benefit both the students with special needs and their peers as the experience of sharing enhances students' learning process (Ross-Hill, 2009). However, the inclusion of special needs students in general classrooms is a very complex and controversial topic that has been much debated by teachers, parents and even school administrators. Each has different views and perceptions about inclusion and what is best for the students. Concerning the teachers' attitudes, a great number of research studies have emphasized that teachers' attitudes are one of the significant indicators in measuring to which extent inclusive education is successful (Al-Zyoudi, 2006; El-Ashry, 2009; Parnell, n.d.).

Despite the availability of previous literature which examines teachers' attitudes towards inclusion practices worldwide, still there are minimal studies on the attitudes of Egyptian teachers toward inclusive education in private schools. Thus, the aim of this study is to shed light on this area as teachers are considered the backbone of inclusive education. The study sought to answer the following research questions;

1. What are teachers' attitudes toward teaching special needs students in inclusive classrooms in private schools?
2. What are the perceived factors that inflected their attitudes towards inclusive education?

Current State of Inclusion in Egypt

The topic of including children with special needs in general classrooms is relatively new to the Egyptian educational context (El-Ashry, 2009). Issues facing the educational system in Egypt have created a vision that inclusive education is hardly a topic to be recognized and achieved (Emam & Mohamed, 2011). These issues are represented in the absence of qualified teachers, and the lack of facilities and differentiated curricula that can be adjusted to suit all types of students, all of which allow the presence of special needs students in different special education units (Emam & Mohamed, 2011). Hassanein (2015) reported that if teachers are not accepting of the idea of dealing with special needs students in their classrooms, it would be impossible to have successful inclusive schools in Egypt. Awad (2016) added that Egyptian teachers who lack training and experience in special education would burden rather than facilitate the inclusion process.

Despite of these issues, the Egyptian Ministry of Education (MOE) has shown great interest in inclusive education by developing inclusive initiatives for special needs students (Parnell, n.d.). According to Hassanein (2015), the process of integrating special needs students in mainstream schools started in Egypt during the late 1990s. These initiatives were applied in three ways; "partial inclusion", "full inclusion", and in non-governmental institution projects and private schools. In partial inclusion, students with special needs are integrated in special education classes in general schools. However, Gaad (2011) claimed that advocates of inclusion have some reservations over the terminology of "partial inclusion". They believe that the terms 'partial" and "inclusion" shouldn't be combined together as, linguistically, inclusion supports the idea of fully including all individuals in the same setting. By adding 'partial' term, the core meaning of inclusion is negated, thus "continuing practice of exclusion" (p.11). In the case of full inclusion, children are included in general classes where teachers are following inclusive programs to address all students. However, there are a limited number of students who can be fully included in general classrooms as this depends entirely on the severity of their disabilities (Hassanein, 2015). Finally, some private schools and non-governmental institutions follow inclusive practices under the supervision of the MOE. Despite all these efforts to enroll children with disabilities in general education schools, Hassanein (2015) mentioned that most students with special educational needs are still not fully included in general classrooms, and mainly receive education in special classrooms.

The MOE in Egypt implemented several pilot projects during the academic year of 2004 -2005 in order to include children with intellectual disabilities in some general

education classrooms. The term "intellectual disabilities" is commonly used in Egyptian policy and it is synonymous with learning disabilities and mentally retarded (Hassanein, 2015; MOE, 2014). The number of general education schools that offer inclusive education is increasing compared to the relatively small percentage of children with special needs that were included in the Egyptian schools (Ministry of Education, 2012 as cited in Abdelhameed, 2015). This is due to the fact that the best setting in which to teach special needs students is at special education schools (UNDESA, 2016).

More efforts by the Egyptian MOE to promote inclusive education included developing the national strategic plan for pre-university education in 2014-2030 (MOE, 2014). One of the aims of this plan is both to include children with mild disabilities in well-equipped public education schools, and to develop more special education schools to that can accommodate students with more severe disabilities (MOE, 2014). Children with mild disabilities, as proposed by Parnell (n.d.), are those who have hearing and visual disabilities, or minor intellectual and physical disabilities. Until today, these plans are not supported with an actual vision or policy to aid in implementing inclusive education in Egypt (Abdelhameed, 2015; Hassanein, 2015).

Private and public schools

In March 2002, the Egyptian Minister of Education declared that the ministry is taking the lead to implement inclusive systems in more than 270 schools across the county in collaboration with "the World Bank, UNESCO, Save the Children Agency (UK), the City Center and Caritas Egypt" (Ghoneim, 2014, p. 194). Also, he pointed that Egypt would be one of the leading countries in the area of inclusion if all schools fully include special needs students.

Following the ministerial declaration in 2002, the MOE announced a Ministerial Act in 2009 stating the right for students with mild disabilities to enroll in public and private schools (MoE, 2014). This decree announced the objectives of getting 5,040 schools ready to include 152,000 special needs students by the year of 2012 (MoE, 2008; MoE, 2014). However, in 2013, the ministry estimated that about 36,808 children with special needs receive educational serves in special education schools , while only 2,776 SEN students were registered in 452 general education schools across the country (Alkhateeb, Hadidi, & Al Khateeb, 2016; Hassanein, 2015). Therefore, according to Hassanein (2015), the overall special needs students enrolled in general schools across Egypt remain semi integrated in regular classes and primarily educated in special education settings.

Recently in Egypt, a new law had passed to ensure the rights of people with disabilities in February 2018. The Law on the Rights of Persons with Disabilities is the first act that requires all educational organizations to embrace policies, which ensure similar opportunities for students with disabilities (Shalabi, 2018). The law provides many amendments to protect the rights of all students with special needs in receiving the same quality of education inside classroom. In addition, the government sets a "criminal liability" on policy makers who break this law with a charge varying from 500 to 2000 Egyptian pounds (Shalabi, 2018).

Despite the fact that studies exploring the status of inclusion in private schools in Egypt have not been presented yet, some implications were found in a study conducted by Awad (2016) on evaluating the actual presence of inclusive system in some private schools. Findings of the study showed that not all students with SEN are included; in addition they receive low quality of inclusive practices.

Policies regarding teachers' statues in inclusive environments

The movement towards inclusion depends on implementing some principals and sharing a common vision among all parties relevant to the inclusive process. Teachers are one of the essential parties who work as keys to create a successful inclusive education. Therefore, it is important to help teachers to understand their role in the inclusive education and that including students with different needs is considered an opportunity more than a problem.

The United Nations Convention on the Rights of Persons with Disabilities in collaboration with UNCRC calls for providing educational equity among all children (UNCRC, 1989). They provide goals to educate and train teachers to support students with special needs. The framework ensured that there is a need to provide continues training for teachers to raise the value of teaching worldwide.

In developing teachers' education towards more inclusive education, Promoting Inclusive Teacher Education Advocacy Guides was developed to support the importance of pre-service teacher education for inclusion (UNESCO, 2013). It was hoped to improve the status of teacher education to help in developing more inclusive systems. Pre-service education is essential for teachers to accept diversities, provide the highest quality education for all students and face numerous social difficulties that may exist inside classrooms (UNESCO, 2013). It suggested that when teachers acquire inclusive education primarily in their teacher education, they are more likely not to view teaching inclusive classroom as a burden.

In Egypt, the National strategic Plan for the Pre-university Education aimed to offer training programs for 408 teachers at schools undergoing inclusive practices in order to include all grade levels by the academic year of 2013-2014 (MOE, 2014). The plan aimed to provide the targeted teachers with professional development programs, new educational strategies and instructional methods to enhance their educational statues to meet the inclusive requirements.

Teachers' Attitudes about Inclusive Education

According to Hammond and Ingalls (2003), it is crucial to examine teachers' attitudes towards educating students with disabilities in general classroom settings as their views could negatively affect the idea of inclusive education (Newton, Carbridg, & Hunter-Johnson, 2014). Previous studies have suggested some common factors that could be influencing teachers' attitudes towards inclusive education. These factors include; the teacher's personal experience and previous knowledge in dealing with special needs, the severity of the student's disabilities, teacher's gender, the school environment and level of support available, and the grade level taught (Adams, Harris, & Jones, 2016; Al-Zyoudi, 2006; Avramidis & Norwich, 2002; Hassanein, 2015).

Teacher's gender

The findings of Al-Zyoudi's (2006) study suggested that there is a slight difference between the attitudes of male and female teachers. Females were more positive than males towards educating children with special needs in inclusive classrooms. However, another study conducted in Egypt showed the opposite, as male teachers held more positive attitudes towards inclusion than female teachers (Hassanein, 2015). It indicates that teachers' attitude toward educating children with special needs may be influenced by their gender but it is not necessarily that female teachers would have more positive attitudes than their male counterparts but clearly males and females differ in their responses.

Teachers' experience and knowledge about inclusion

It has been acknowledged that teachers who know how to interact with students with special needs are usually those who have previously received training programs or had previous experience in this area (Awad, 2016). For example, a study that researched special and general teachers stated that both types of teachers had negative attitudes towards inclusion because they lacked experience and knowledge of teaching students with SEN (Abdelhameed, 2015).

The severity of students' disabilities

It has been suggested that the different types of students' disability could be one of the most important factors that could influence the attitude of Egyptian teachers toward inclusion (Al-Zyoudi, 2006). The findings showed that teachers are nearly positive about the idea of including children with physical disabilities in regular education, rather than those with other types of disabilities. They also concluded that not all special needs children could be included in regular classrooms.

Grade level taught

According to Murfy's (2014) findings, teachers at primary schools are more likely to teach special needs students compared to teachers at secondary schools. A study by Idol (2006) provided evidence that grade level could be a factor that affected teachers' attitude towards educating special needs students. Echoing Murfy's (2014) findings, primary teachers in Idol's (2006) study were more likely to favor inclusive education than some of the secondary teachers studied who were not supportive of having inclusion classrooms.

School environment and administration support

Teachers claimed that the idea of including special needs students in regular classrooms could be more achievable if the school buildings were well equipped to receive students with disabilities (Al-Zyoudi, 2006). In addition, teachers held positive attitudes towards educating special need students if those teachers were able to receive the required support from the school administration.

Teacher - parent collaboration

Most of the time teachers and parents demonstrate a wide range of thoughts and attitudes that sometimes results in miscommunication. As suggested by Staples and Diliberto (2010), the tension between teachers and parents might affect the educational progress of special needs students. The research has shown that cooperative parents might have a direct impact on teachers' attitudes towards children with special needs (Ahmmed, Sharma, & Deppeler, 2012).

Theory of Planned Behavior

This study is guided by the theory of "Planned Behavior" which was firstly proposed by Icek Ajzen in 1985 and developed from the theory of reasoned action (Ajzen, 1991). The theory of planned behavior suggests that an individual's behavior is both predicted and influenced by intentions driven from three basic components; attitudes towards the behavior, subjective norms and perceived behavioral control (Ajzen, 2005) (see Figure1). In other words, it shows that person's willingness to perform certain actions is related to his/her positive attitudes, taking into consideration the presence of normative beliefs and perceived variables related to his/her prior favorable experiences and beliefs towards this behavior (Ajzen & Fishbein, 1977).

As per the theory, teachers intended to accept the idea of inclusion when they demonstrate positive attitudes towards it and when they believe that they have the needed resources and support to do so.
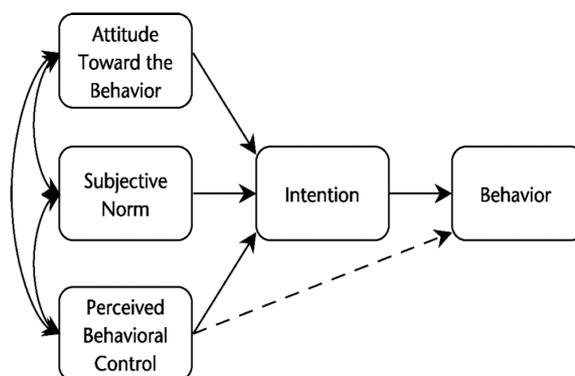
Figure 1: The Theory of Planned Behavior. Source: (Ajzen, 2005, p. 118)

Methodology

The use of qualitative methodology was most appropriate to investigate the main questions of this study. According to Creswell (2012), qualitative research is designed to explore participants' views, feelings and experiences about a certain problem or phenomena. It is also designed to obtain data from a small group of participants which is relevant to the number of participants in this study. The study was conducted at three different private schools. All three schools where located in Cairo and offer the American curricula to its students. Also, the schools have a special needs policy that indicates the number of students with SEN enrolled in each school.

The participants for this study were teachers from different disciplines, genders, and teaching stages and had different years of teaching experiences. The criteria of including specific participants in the study was based on their involvement in inclusive practices or teaching special needs students in their classrooms as the study focused on the topic of inclusion. The anticipated number of informants was from 10 to 15 depending on their willingness to participate and their availability. The researcher contacted five private schools and only three school administrators replied stating their willingness to allow the teachers to participate in the study. Across the three schools, the researcher found that female teachers who teach inclusive classrooms are more than male teachers. Therefore, it was difficult to examine teachers' gender as a factor affecting teachers' attitudes toward inclusion.

The overall number of participants was ten teachers; nine female teachers and one male teacher (see Table 1).To maintain confidentiality, the researcher coded the participated teachers as T1, T2, T3…etc. (see Table 2) and schools A, B, C.

Table 1
Number of the Interviewed Teachers in each School

Number of teachers	School
5	A
3	B
2	C

Table 2
Teachers' coded by School

T1, T2, T3, T4, T5	School A
T6, T7, T8	School B
T9, T10	School C

The process of gathering data was through conducting one to one semi structured interviews using open-ended questions. The reason behind choosing interviews is that it would enable the participants to express their opinions and views about the topic (Creswell, 2012). For the purpose of the study, semi structured interview questions gave flexibility for the researcher and the teachers to go into deeper discussions about various topic dimensions, something that couldn't be done through surveys or questionnaires. Using interviews also allowed the researcher to manage the interview process by asking further questions for clarification and to receive the needed types of information (Patton, 2002).

Before collecting the data, the researcher obtained the approval of the International Review Board (IRB) (see Appendix A) and the Center Agency for Public Mobilization and Statistics (CAPMAS) to conduct the study After receiving the permission of the school administrators, all of the teachers were asked to sign an informed consent form prior to conducting the research (see Appendix B). The researcher explained orally the rights of the teachers to withdrawal anytime and that their responses will be confidential.

After receiving approval from the participants, all interviews were held in English language upon the teachers' request. Teachers approved having the interview recorded. The Thematic Analysis Model was used to analyze the collected data

(Braun & Clarke, 2006). The interviewed teachers were given codes based on their total number, while schools were given letters. Five major themes and one minor theme were developed. The generated themes were used to answer the three research questions of the study.

Findings

Teachers' attitudes towards inclusion

During the interviews, the attitude of teachers toward inclusion was a common theme discussed by the participants. Their attitudes toward the idea of inclusion varied between acceptance and refusal. Sometimes their views were mixed and this revealed the reasons behind their behavior. Firstly, three teachers, T6, T7, and T8, exhibited positive attitudes regarding inclusion and were convinced of the importance of implementing inclusive education. They emphasized the positive contributions of inclusive education regarding social interactions and the academic progress of special needs children. One of the teachers (T6) stated that it is biased to shelter special education children from the outside world by putting them in separate classes and banning them from mingling with their peers. She concluded her comments by saying that "special needs children need to know that they have things that make them special rather than things that need to be treated in a special way".

Secondly, findings showed that two teachers held negative attitudes towards inclusion. Both T9 and T5 did not prefer teaching special needs students in their classrooms. They were devoted to the idea that special needs students need to be separately educated. The reason for this is that they will not receive what they should gain from adequate education in general classrooms. T5 mentioned that "Special needs students are not functioning properly and that's why we call them special needs and that's why they need specialists".

Finally, among the teachers who participated in the study, five of them, T1, T2, T3, T4 and T10, stated that they believe in the inclusion of special needs students in the general classrooms and they support the advantages of inclusive education. Despite their positive attitudes, there were certain aspects that prevented the five teachers from entirely agreeing upon teaching special needs students in an inclusive setting. They highly recommended that not all types of SEN students could be included and that special education schools are the best educational placement for those students with critical disabilities. They also stated that it is problematic to have too many special needs students in one class as it is too over powering for the educational system and transforms the whole school into a special education school.

Teachers' professional development and experience

The majority of the interviewed teachers stated their desire to obtain further professional development training to aid them in dealing with SEN students in an inclusive setting. As T4 reported; "acquiring more workshops and trainings related to special education will enrich our knowledge as teachers to teach different types of SEN students". Conversely, some teachers suggested that their overall qualifications do not equip them to teach all special needs students. As T10 mentioned: "I feel that I'm not qualified enough to teach children with SEN and this sometimes hinders me to deal with them". Thus, it can be assumed from the teachers' responses that there is

a relation between their positive or negative attitudes towards inclusion and their prior knowledge and experience regarding special education.

Severity of need

The severity of disability was determined as a challenge facing teachers in an inclusive setting. According to the findings, some teachers displayed limited understanding of all types of special needs, although they were more familiar with certain behavioral and mental disorders like ADHD, ODD, Epilepsy, Dyslexia, Autism and Down syndrome. Thus, it was quite difficult to accurately examine the impact of the severity of the disabilities on teachers' attitudes towards inclusion.

School administration support and facilities

The findings indicated that there is a strong relationship between teachers' attitudes towards inclusion and the level of administrative support they receive from their school. This implied that the support and guidance offered to teachers by the school administration could be one of the factors affecting their attitudes towards inclusion (Awad, 2016). Moreover, teachers who feel the support by their school administration demonstrated positive attitudes towards including students with special needs.

Teacher parent collaboration

The findings revealed that parental collaboration is another factor that had an impact on the attitude of teachers toward dealing with special needs students. All of the teachers who displayed positive attitudes responded that lack of parental cooperation could be a barrier to help the students with special needs. However, it wasn't proven that the lack of parental support might generally affect their overall positive attitude about the importance of inclusion. The teachers elaborated that they would be more inclined to help children with SEN if they received help and support at home. T7 commented "if it is one sided support from me and there is a block, then it is like I'm hitting a wall and bouncing back".

Number of SEN students

The number of special needs students in each class was one of the biggest challenges facing some of the teachers in the study. As expressed by T6: "I believe that only 20% max should be included in each classroom. If you have lots of disabled students, you won't give them the attention they do need and deserve". Analysis of the data showed that only four teachers reported that their attitude may differ according to the number of SEN students in the classroom. These teachers demonstrated earlier that they accept the idea of inclusion as long as the number of SEN students is limited compared to the number of other students in the same classroom.

Conclusions

The main findings of the study indicated that three out of ten teachers accepted the idea of full inclusion of children with special needs in the general education classrooms. Five participants showed positive attitudes toward including SEN students with certain reservations, mostly dependent on the severity of the disability

and the number of SEN students inside the classroom. However, two teachers did not support the inclusion of special needs students in the general classrooms. Despite the fact that no studies were found that tackled the attitudes of teachers in Egyptian private schools, similar findings were echoed in the previous literature. Teachers who are likely to demonstrate positive attitudes toward inclusion are those who had many years of teaching experiences, and had acquired appropriate professional development programs to assist them to teach students with different abilities (Avramidis &Norwich, 2002; Awad, 2016; Blecker & Boakes, 2010; Emam & Mohamed, 2011). Similarity, in this study, findings indicated that the eight participants who held positive attitudes toward inclusion had a minimum of four to thirteen years of experience in teaching students with special needs. Also, about six of those teachers had acquired professional development or had attended some workshops relevant to special needs education.

Moreover, few teachers agreed that inclusion is not the correct choice for special needs students. They believed that general education schools cannot meet their needs due to the lack of real inclusive schools in Egypt. Instead, they see that separate special education classes are the most appropriate to meet the needs and to enhance the academic performance of the students with SEN. Additionally, parental collaboration and administrative support is required to guarantee the success of inclusive practices. Despite the study limitations, these findings might be utilized in further research regarding inclusive education in Egyptian schools.

Recommendations and limitations

Based on the study findings, it is recommended to improve the educational status of teachers in Egypt. It is imperative to offer courses, workshops and continuing professional development programs about special education to pre and in-service teachers, yearly by the Egyptian MOE in general and school administrators in particular.

In addition, parents should be better educated about the symptoms and diagnosis of different types of disabilities. Also, it is strongly suggested that stakeholders should raise awareness about the concept of inclusion among educators, policy makers and the whole educational community. Since the movement towards inclusive education in Egypt is still vague and is not supported by the efforts of the Ministry of Education, inclusive education should be considered in the agenda. Finally, private schools should be well supervised by the Ministry of Education to ensure that the students are "fully" and not "partially" included in general education classrooms.

Research Limitations

In the presented study, the number of female teachers significantly outnumbered the male teachers. It was, therefore, difficult to examine gender as a factor that could affect teachers' attitudes. Additionally, a significant limitation of the study was the tool used for data collection. It was difficult to enter some private schools, thus, prevented the researcher from observing the interactions between the teachers and their students. However, the tool utilized in the study managed to assess the attitudes of the teachers towards inclusion in an adequate way.

Another limitation of the study was the minimal presence of real inclusive schools in Egypt. It took the researcher a lot of time to identify schools that follow the inclusive system. As a final limitation, the teachers interviewed for this study only work in private schools. Accordingly, it is important to note that they all were drawn from the same backgrounds and socio-economic level. Therefore, the sampling method failed to generalize the results among all teachers across different schools in Egypt.

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Engagement Scholarship and Social Enterprise

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Abstract
Business schools have been teaching entrepreneurship for years. However, the more complex tasks of teaching social enterprise and contributing to the conversation around social innovation has come to the universities only recently. Although leadership in these methodologies has been primarily from practitioners and other non-university sources, the scholarship of engagement, within universities, can now make a useful contribution to advancing both social enterprise and social innovation. In this case report, we present a model of engagement scholarship that has been emerging within an interdisciplinary Faculty at a public research-intensive university. We also preent a new graduate degree in community engagement that, uniquely, continues to be guided by a multisectoral curriculum advisory committee. Ongoing initiatives in research, learning, and knowledge mobilization related to social enterprise and social innovation will also be explored.

Keywords: engagement scholarship, community-university partnership, social enterprise, social innovation.

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Introduction

The foundation of higher education was imbued with a civic mission that called upon faculty, students and administrators to address important issues affecting communities, the nation and the world (Stanton, 2008). Over time, however, higher education has become increasingly disconnected from this mission. More recently, universities are being called upon to return to the founding mission of being relevant and making an impact in their communities. Such a return is not without challenges, particularly given that relevance and impact are generally not rewarded in terms of tenure and promotion requirements (Barker, 2004). However, one way that universities can make an impact on important issues affecting communities is through community-engaged scholarship. This paper shares a successful model of engagement scholarship through which the Faculty of Extension at the University of Alberta has achieved both relevance and impact. Highlights of the model that are presented in this paper include a new Master's degree program in community engagement and a community-university partnership with a focus on social entrepreneurship and social innovation.

The paper is structured by first providing an overview of the history of the Faculty of Extension, along with overviews of the new Masters of Arts in Community Engagement (MACE) and the Faculty of Extension's Community-University Partnership (CUP). In closing, two case examples of community engaged scholarship, related to social entrepreneurship and social innovation, will be presented.

History: Faculty of Extension

The Department of Extension at the University of Alberta was the first in Canada to be concerned with areas apart from agriculture. The Department was also the first to replicate the Wisconsin Idea, following a visit to the University of Madison-Wisconsin by the University of Alberta's first president, Henry Marshall Tory, in the early twentieth century. Clark (1985) described the Department as "the single most influential adult education agency in the province" (p 13) for its 375,000 rural inhabitants that were mostly widely scattered. The Department was, according to Clark, "pragmatically organized to ensure, first, the survival and, then, the ascendancy of the university in the province" (p 14). A number of milestones mark the development of the department including the establishment of Canada's first public broadcasting station, CKUA; the Banff Centre which was internationally recognized; and the film library and travelling book service; the Khaki College for enlisted men in 1917; and later by the first technology-enabled distance delivery of university programs in Alberta.

Charged with "bringing the university to the people" for "the public good", programming for the Department was originally determined by its director, along with the President of the University and the Board of Governors. The Department reflected and enacted Tory's philosophy of a service-oriented public institution for the people. The mandate and scope of the Department was laid out in a Senate "bulletin", made public in 1912. The bulletin declared that the Department was "to take the lead in every movement having for its object the betterment of conditions in the province". Although motivated by political factors, the bulletin foreshadowed the evolution of the Department as a key agent of outreach in the province.

Two primary examples of this outreach include providing rural populations with both written and visual learning and enrichment. Beginning in 1913 and operating until 1987, the Extension Library provided boxes of books to any settlement in Alberta that would otherwise have been without literature. The Extension Library also provided scripts for drama productions and "package libraries" which were packets of information on single topics that were used by debate teams. The Magic Lantern program provided slideshow programs on a wide range of topics. In 1917, the Magic Lantern program became the first educational film library in Canada after being awarded a $4,000 grant from the Goodyear Tire and Rubber Company. Eventually, the Magic Lantern program offered film presentations in addition to slideshows.

Tory's successor, Dr. Robert Charles Wallace, was a strong supporter of the Department's work. Wallace's primary interests were in adult education as an educational and social movement. He committed to the University of Alberta's leadership role in developing adult education not only in the province but also nationally (Clark, 1985, p 150). In 1956, A.E. Corbett was appointed Extension Director. Together, Corbett and Wallace, dealt with financial pressures that began after World War I. Financial support was eventually provided by the University Senate, which allocated operating costs to the Department. This support was supplemented with other grants including funding from the Carnegie Foundation to establish the Banff Centre. Although scant, revenue-generating programming generated enough resources for re-investment into the Department. During this period, the Department developed and maintained various innovative pedagogical and delivery models for the University. Over time, these models were adopted by other Faculties.

During the 1950s, the Department began to develop non-credit courses, classes, seminars and conferences. These diverse offerings were prompted by a period of intense industrialization in Alberta after the discovery of an oil field in Leduc, Alberta. Soon after that discovery, the first of many credentialed programs was developed. On November 1, 1975, the University of Alberta granted full faculty status to the Department of Extension, which then became the Faculty of Extension and continued to experience increased enrolment. The granting of faculty status was based on the expectation that the Faculty contribute to theorizing the evolving discipline of adult education.

In 1999, the Master of Arts in Communications and Design (MACT) became the Faculty's first credit-bearing graduate program. Credit-bearing courses and certificates followed, as did the emphasis on the development of learning pathways. In 2016, the Faculty developed the Master of Arts in Community Engagement (MACE), which we will go into more detail below. Only in its second year of operation, MACE is already attracting international students.

The Scholarship of Engagement

Jackson (2008) conceptualized university continuing education (UCE) as a dynamic triangle comprising community engagement as community-based continuing education, community-based experimental learning and community-based research. Another Canadian scholar, Bud Hall (2009), in his paper about community-engaged

practices of Canadian higher education, mentioned that the first dimension of Jackson's triangle, namely continuing education, is the basis of all community engagement initiatives. Hart and Northmore (2011) described university community engagement in a more detailed way, under seven dimensions encompassing public access to university services, public access to knowledge, improving participation, encouraging economic and social engagement, student engagement and staff engagement. In this view, engagement becomes the ethos of publicly funded universities but also becomes somewhat diminished as an intellectual domain as scholars and practitioners struggle to codify a universal understanding of the term. The Committee on Institutional Cooperation (2005), in defining university-community engagement scholarship and practices (UCES), highlighted the *outcomes* of the processes, rather than the processes themselves. The outcomes identified by UCES include: enhancing scholarship, research and creative activities; addressing societal problems; enriching curricula and the associated teaching and learning; strengthening social responsibilities; and fostering more educated and engaged citizens.

Attempts to conceptualize and develop frameworks for UCES practices and strategies have included proposed benchmark frameworks for UCES (c.f. Langworthy, 2009; Hartand & Northmore, 2011; Goedegebuure and Van Der Lee, 2006; Ostrander, 2004). One such framework is the Carnegie Classification of Community-Engaged Institutions (http://carnegieclassifications.iu.edu). To date, the focus of UCES has been on specific countries, such as the UK, US, Canada or Australia. Nevertheless, scholars in the area of engagement scholarship continue to contribute to a global understanding of the social responsibilities that a university has to its communities (Esfijani et al, 2013).

In 2007, the Faculty of Extension moved to the city's urban core, taking up residence in the University of Alberta's new downtown campus at Enterprise Square. The move accomplished several institutional goals including the opportunity to better articulate, in both theory and practice, the evolution from outreach practice to engagement scholarship as a unifying intellectual domain. The Faculty's new academic plan, approved in 2008, proposed that this more directed focus would underline all organizational decisions in research, teaching, and service (i.e. curriculum development, graduate programs, students, course delivery, facilities planning, governance, partnerships, advancement). Because UCES is not an easy cultural fit for public research universities, in particular because of its reward structures, the Faculty developed new tenure and promotion guidelines to include scholarly service and an integrated cycle of engagement scholarship. Faculty recruitment is now contextualized these guidelines and faculty members are evaluated annually for the community/social impact of their work.

 The Faculty also adopted the Carnegie language of "engagement", to wit: "Community engagement describes collaboration between institutions of higher education and their larger communities (local, regional/state, national, global) for the mutually beneficial exchange of knowledge and resources in a context of partnership and reciprocity" (APLU, 2016, p 20). Further, the epistemology of engagement, at its core, has two interwoven qualities: 1) it is transdisciplinary, and 2) it is asset-based (APLU, 2016). The latter quality of transdisciplinary acknowledges that legitimate and valuable knowledge assets exist outside the university, a concept that academe, in

general, struggles with. However, with vexing national and global problems creating immense economic, environmental, social, and psychological consequences, it is increasingly recognized that no single entity (i.e. the university) can discover and mobilize appropriate solutions. Consequently, universities are expected by their stakeholders to build and foster meaningful community engagement through reciprocal, mutually beneficial and mutually respectful partnerships. By recognizing, and helping to mobilize, different forms of knowledge (community, experiential, and academic; Escrigas et al., 2014), and by promoting solution-focused engagement approaches to solving complex societal problems (Fitzgerald et al., 2012), community-university engagement is a central component of effective higher education, research, and policy development. The Faculty of Extension's research, in particular, is driven by a fierce commitment to fulfilling its founding mandate of "uplifting the whole people" by "bringing the University to the people".

Due to its interdisciplinary nature, the primary strengths of the Faculty include multiple disciplinary approaches to the scholarship and practice of engagement, capacity building, knowledge mobilization, social justice, and community development. The depth and breadth of these collaborative experiences has fostered many sustainable local, regional, national, and international relationships and partnerships across sectors, two of which are highlighted in this paper.

The Faculty incorporates community knowledge and feedback in order to identify and address significant social and community issues (e.g., poverty), and to help generate solutions that are evidence-informed and implementable by communities themselves. As a "boundary organization" or "experimental incubator", the Faculty's research promotes innovation in engagement scholarship and seeks to address the full spectrum of university-community engagement. By doing so, the Faculty's research fills, in a strategic and innovative way, the ontological, epistemological and methodological gaps that previously existed in community engaged research (CER) literature, policy, practice, and evaluation.

Promoting social justice and reconciliation through a priority of research within the Faculty of Extension. The Faculty also prioritizes mutually respectful relationship building and collaboration across sectors, seeking to build capacities for both academic and non-academic partners, while helping develop evidence-based approaches to improving policy and practice in their communities. Thus, Faculty research very explicitly honours the diverse sources and forms of knowledge that emerge from the perspectives and experiences of community members, practitioners, knowledge keepers, learners, and staff, as well as academic researchers and teachers. As noted above, the integration of research, teaching, and service provides meaningful opportunities to advance integrated forms of scholarship, in which research, teaching, and service inform each other in a reciprocal way.

In summary, The Faculty of Extension mobilizes disciplinary knowledge, though an engagement scholarship lens, to emphasize a shift away from an expert model of delivering university knowledge to the public and towards a more collaborative model. In this collaborative model, community partners play a significant role in creating and sharing knowledge to the mutual benefit of institutions and society (Boyer, 1996; Kellogg Commission, 1999). Two examples of this principle, which we will discuss next, are the MACE program and the work in social innovation and

social enterprise supported through our Community-University Partnership for the Study of Children, Youth and Families (CUP), a research centre led by a steering committee equally balanced with community and university membership.

Master of Arts in Community Engagement (MACE)

The *Master of Arts in Community Engagement* (MACE) is an interdisciplinary, thesis-based degree program that offers students an opportunity to develop an understanding of the field of community engagement and the practices and processes that inform it. In the program, students undertake an in-depth examination of the conceptual and philosophical underpinnings of community engagement, as well as learn about research and engagement methodologies. Students also gain practical experience working with community, as they complete an individual thesis research project with the support and guidance of academic experts.

The MACE program consists of seven courses on community engaged scholarship, research methods, and electives. The program also includes a thesis and practicum. The learning objectives of the practicum are to negotiate an agreement with community partners that result in reciprocal and mutually beneficial outcomes, to develop reading, writing, and research skills, resulting in the integration of academic resources (literature reviews and interviews) and experience in written works (journals, reflections, papers).

Community-University Partnership (CUP)

CUP is a unique community-university partnership model that uses an engaged research approach through which partners from the community, university, and/or government are empowered to share their voices, collaborate, and develop projects that support mutually beneficial outcomes. Partners bring their own strengths to the process, develop principles for working together, and jointly determine the scale and scope of their projects. The mission of CUP is to nurture environments where evidence is used effectively to develop practices, programs, and policies that support the healthy development of children, youth, families, and communities. CUP's research falls into four key areas: Early Childhood, Evaluation, Policy, and Poverty.

CUP's work is undergirded by five key principles:

Engagement	Building and maintaining meaningful relationships with our partners.
Leadership	Leading discussions and research on issues related to evidence-informed policy, and practice.
Knowledge Mobilization	Interpreting, contextualizing, and disseminating evidence to end-users (i.e., practitioners, policymakers, researchers etc.)
Research & Evaluation	Conducting and facilitating projects, compile and synthesize existing evidence, and generate analyses of policy and practice.
Capacity Building	Providing opportunities for scholarship and skill development in evaluation and research methods.

Engaged Scholarship Case Briefs: The Grocery Run and the Alberta Flavour Learning Lab

Both the Grocery Run program and the Alberta Flavour Learning Lab provide case examples of community-engaged scholarship through CUP that led to social innovation and social entrepreneurship. The Grocery Run program began as a research project lead by Dr. Maria Mayan in partnership with Multi-Cultural Health Brokers (MCHB), a non-profit organization that provided support for immigrant women. The project was supported by colleagues from the Faculty of Agriculture and Forestry.

The project's initial aim was to explore the perceptions and experiences of migrant women related to their health during pregnancy and postpartum. As Maria began to talk with the MCHB employees about their work with pregnant mothers, it became apparent that the employees felt their work was overshadowed by food crisis situations for these mothers and their families. This realization lead to the development and deployment of a survey of migrant women and their families (n=217). Survey responses clearly identified that food insecurity was a significant issue for these families.

- 33% indicated that their children had missed meals due to lack of money for food
- 41% indicated that they, as parents, had reduced their meal sizes or skipped meals all together due to a lack of money for food.

In conversation with several community partners, the research team developed the Grocery Run program as a starting point to address these issues. Grocery Run is a food rescue model in which surplus food that is generally non-saleable is collected from grocers, as a donation, on a weekly basis and re-distributed to families in need. As a result of the Grocery Run. food is supplied, each week, to 90 individuals, which, in turn, feeds approximately 450 individuals. Additionally, women are provided with opportunities to connect with other women who are going through similar experiences and to learn about available resources and support within their community. Another outcomes is that food waste - one of the biggest contributors to global greenhouse gas emissions – is greatly reduced.

Building on success of the Grocery Run, CUP is now entering the Community Economic Development (CED) space by expanding the Grocery Run to incubate social enterprises. The development of food-based social enterprises is aimed at supporting immigrant women in developing and running their own sustainable and scalable enterprises. This is being accomplished by identifying ideas, provided by women who participate in the Grocery Run, that have the potential to be developed into productive enterprises. A Community Economic Development (CED) Committee was developed to work directly with immigrant and refugee women. The role of the committee is to solicit social enterprise ideas, to identify the existing capacities of the idea proposers, and to facilitate a match between needed and existing resources and support from within the community.

The Grocery Run case provides an example of a progression model within community-engaged research (Figure 1). During the first stage of the model, the

research stage, scholars engage in the community with a research interest. A transition to the *service stage* can occur when the ethical dimension of the researcher is engaged through observation, during research, that the research subjects have substantial, basic needs, like the need for food. During the service stage, the researcher coordinates resources to address real and immediate needs within the community. Through addressing these needs, the issue of sustainability arises. The need in the community appears likely to outlast the period of the research and so the researcher and community explore the possibility of developing a social enterprise to help meet some of the needs that were initially met through charitable service. This leads to the next stage in the model, *social enterprise,* as a potential way to provide for a more sustainable solution for meeting the identified needs of community members. Upon the development of social enterprises, it is recognized that other communities face similar issues and the next step is to consider scaling the social enterprise model and replicating it in other communities thereby entering the model stage of *systems change*. Finally, although some system changes can be made at the community level through scaling and replication of the social enterprise models, policy change may be necessary and may be supporting by the successful scaling and replication of social enterprise models. The *policy development stage* may be required to more fully address deeply imbedded and complex challenges, particularly those with a human rights dimension including racism, systemic injustice, abuse.

The second case example that arose from the Faculty of Extension's model of community-engaged scholarship, this time leading to social innovation, is on the Alberta Flavour Learning Lab. The Learning Lab is a unique community of practice (Wenger, 2000; 2011) co-developed by Dr. Mary Beckie and, Jessie Radies, an industry partner. The purpose of the Learning Lab is to help institutional food buyers (i.e. food buyers from hospitals, universities, conference centers) increase their procurement of local foods leading to economic, environmental and social benefits. Although primarily focused around institutional food buyers, other members of the Learning Lab include government representatives, distributors, producers and researchers. Designing the Learning Lab as a multi-stakeholder initiative has been important due to the complex nature of the food system. To achieve its goal of increasing the amount of local foods purchased by institutions, the Learning Lab focuses on building social infrastructure, which has recently been shown to be more important than physical infrastructure in the development of local or sustainable food systems (Connelly & Beckie, 2016).

Conclusions

Universities are increasingly being called upon to return to their founding mission of being relevant and making an impact. Community-engaged scholarship is one way that universities can make an impact on important issues affecting communities. In this paper, we have shared a successful model of engagement scholarship through which the Faculty of Extension at the University of Alberta has achieved both relevance and impact. Highlights of the model were also presented, including a new Master's degree program in community engagement and a community-university partnership with a focus on social entrepreneurship and social innovation.

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Figure 1: Conceptual Progression Model of Community-Engaged Scholarship

| Research | Service | Social Enterprise | Systems Change | Policy Development |
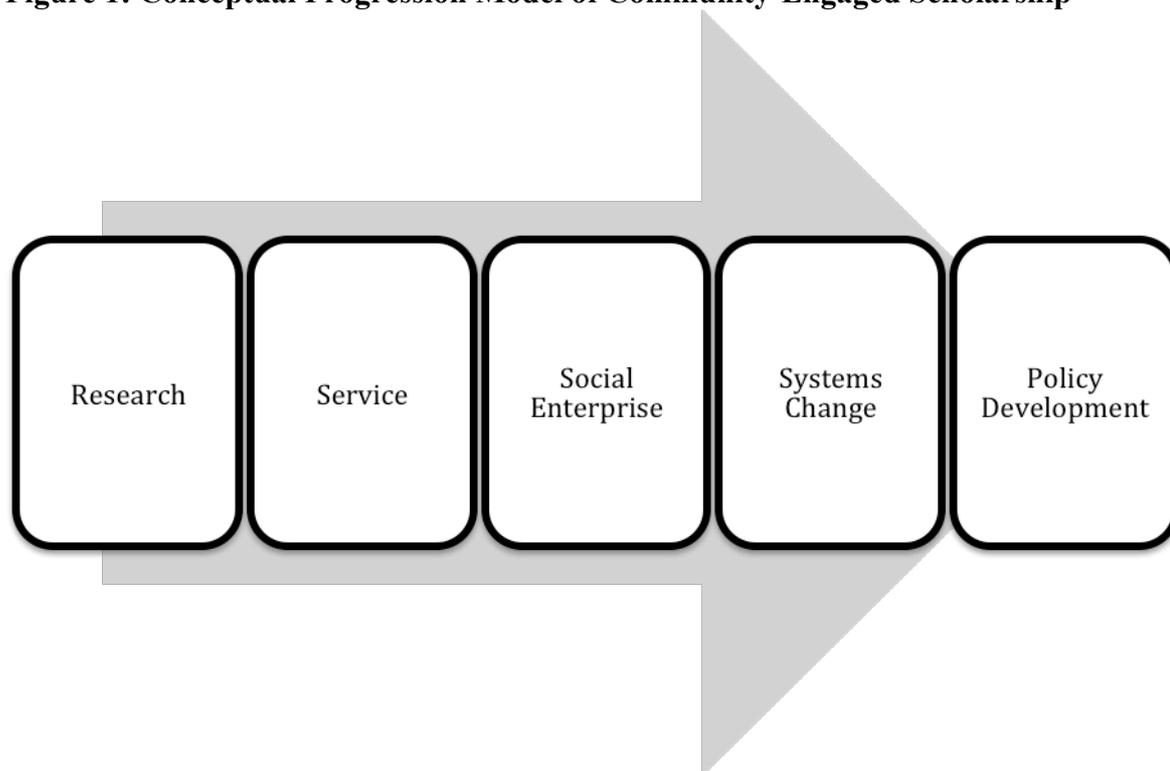
Leadership for Enhancing Quality Culture in Higher Education

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Abstract

The mission of higher education institutions is to produce quality graduates as what society expects. To ensure the institutions accomplish such mission, they have to continuously improve their performances based on quality assurance standards at national or international levels. Achieving to comply with these standards reflects the quality of institution administration, academic functions, and outcomes. Administrators, faculty members, and staff play roles in delivering quality assurance tasks which concerns systematic planning, implementation, assessment and development processes. Their success significantly depends on institution culture, which creates a considerable impact on quality assurance systems while their leaders shape institution culture. This paper aims to identify to what extent institutional leaders affect the achievement of quality assurance standards and to determine their roles to enhance quality culture in higher education. The selected data were from scholarly published articles related to leadership influencing quality culture in higher education and quality assurance systems from the year 2000 onwards. The data analysis was through qualitative content analysis. The findings demonstrated what leadership functions and roles are effective to encourage administrators, faculty members, and staff to improve and develop their performances in alignment with expected outcomes and goals of institutions while achieving national or international quality assurance standards. Through synergistic collaboration under the strategic leadership, higher education institutions can improve and sustain quality culture enabling authentic quality development of education responding to stakeholders' needs.

Keywords: leadership, quality assurance culture, higher education

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Introduction

The ultimate goal of higher education institutions is to produce quality graduates as what society expects or will expect in the future. To ensure the institutions accomplish such mission, they have to continuously check and improve their performances based on quality standards at national or international levels. Based on these standards, it is essential to explore the institutional culture where administration, academic functions, and outcomes are functioned. Even though administrators, faculty members, and staff play active roles in delivering quality tasks which require systematic planning, implementation, assessment and development processes. Their success significantly depends on institutional leadership that affects considerably how the whole system is run and shaped and to what extent leaders engage themselves with the team and have the team well-engaged.

Objectives

This paper aims to identify to what extent institutional leaders affect the achievement of quality assurance standards and to determine their roles to enhance quality culture in higher education.

Literature Review

This section presents brief concepts encompassing the quality culture that is based on the critical notions of what higher educational institutions (HEIs) should adopt into their institutional practices. The type of culture in HEIs shapes the attitudes towards quality assurance systems, but the overall influences affecting the whole institutional systems lies within institutional leadership's functional roles and accountability.

Quality Culture in Higher Education

Quality is well-defined by Harvey and Knight (1996) as exceptional, perfection or consistency, fitness for purpose, value for money and transformation. In the context of higher education, the dominant role of a higher education institution (HEI) is to facilitate the learning of their students, and their quality is in fact as 'moral purpose' for maximized output quality. By the meaning of moral purpose defined by Barber and Fullan (2005) that it is "the link between systems thinking and sustainability. The central 'moral purpose' consists of constantly improving student achievement and ensuring that achievement gaps, wherever they exist, are narrowed. In short, it is about raising the bar and narrowing the gap." Achieving such quality output is necessary to draw a clear distinction between managing *for* quality and managing *of* quality. According to Barnett (1992), managing *for* quality reflects in the traditional practices of teaching that focus on the quality of student learning experiences while managing of quality lies in the span of authority that creates conditions in which academics are to committed to quality standards stipulated by institutions or external stakeholders. Both processes towards quality are inevitably indispensable to quality education. However, they must be surrounded by the right atmosphere of a quality culture. As Yorke (2000) emphasizes that a quality culture is a crucial success factor for the sustainability of HEIs. The culture of quality relies on a widespread commitment from concerned stakeholders to quality and a system ensuring its improvement be continuously carried out. Institutional leadership comes into play as

the establishment of a quality culture demands a higher order of leadership and management accountability. The major functional roles of HEI leaders are to determine and clarify direction and to improve institutional climate through effective communication as suggested by Middlehurst (1993). Some methods proffered to managing *for* quality widely exist but this paper focuses on the core concepts of benchmarking, total quality management, and Baldridge excellence framework in the scope of leadership roles and functions.

Benchmarking in Higher Education.

According to Alstete (1995), benchmarking enables higher education institutions to overcome resistance to change and quality assurance systems. It is the method that gives a structure for external assessment and creates networks of communication among HEIs, which could open opportunities for them to share valuation resources and practices. Therefore, some scholars advocate the HEIs adopt benchmarking into the strategic directions for the development of their institutions. As benchmarking, compares performances among other institutions, could help HEIs reflect their strong and weak points while introducing processes for the improvement of performance results. Based on the synthesis of Paliulis & Labanauskis (2015), benchmarking can be internal and external, intended for the comparison of results and processes, and involved at a strategic level of the institution. Mainly, institution leadership is the crucial factor of success when any HEIs aim to exercise benchmarking in their system. At the operation of a strategic planning and quality management system, any HEI calls for good governance and leadership as well as a quality organizational culture that could adapt to changes.

Total Quality Management in Higher Education

TQM, in an education context, has been adapted and applied to quality assurance systems. TQM described by Sallis (2002) is a philosophy that educational institutions have to uphold continuous improvement and also is a technique to ensure such improvement be implemented on an ongoing basis. Curriculum has to be designed to have expected learning outcomes, instructional strategies, and learning assessment methods aligned through a valid assessment of student achievement. The alignment of the three vital functions is through tremendous effort and meaningful commitment to developing a useful PDCA cycle (plan, do, check and act). Thus, TQM has to be embedded into the culture of a HEI as a learning organization where their academic leaders demonstrate a high level of engagement based on the principles posited by Yorke (2000): to develop a vision and a strategy (engaging influential but capable players to gain broader support); to create a sense of urgency as posited by Kotter (1996) (moving people out of their comfort zones and stimulating them with hard facts to adopt changes); to create a guiding coalition (to have an aspiring team with sufficient positive power and influence to lead improvement); to communicate widely and continually (walking the talk does not only boost not only morale's faculty and staff but also creates trust within the team); to develop a shared commitment; and never rest on laurels (to re-examine current successful practices and to strive for better improvement).

Baldrige Excellence Framework in Education

Many public and private sectors have adopted the Baldrige Excellence Framework to steer their organizations towards excellent results. This framework enables leaders to align and engage their team members in the vision, mission, and values of the institutions to achieve the expected educational outcomes. The framework is composed of seven categories (leadership, strategy, students, measurement, analysis and knowledge management, workforce, operations, results). One category weighted more heavily than other process categories is leadership (senior leadership, governance, and societal responsibility.)

Leadership in Higher Education

There are many leadership theories applied in various sectors. The most commonly cited theories when discussing the administration, leadership or management of higher education institutions are shared/distributed leadership, transformational leadership, and engaging leadership, to name a few. These theories suggest positive practices that institutional leaders should follow and apply it to the common goal of educational excellence.

Shared/Distributed Leadership.

Three significant elements emphasized in distributed leadership are decision making, teamwork, and work reallocation. The quality of decisions is based on the quality of interactions-collaboration, critical dialogue, and communication (Scribner, Sawyer, & Watson, 2007). Specific qualities conclusively defined by Cordeiro & Cunnningham (2013) are the abilities to try to apply all knowledge and experience, to solve problems productively to create change by encouraging idea sharing, to encourage teams to contribute knowledge to the decision-making process and lead to discovering new approaches.

Transformational Leadership.

Burns (1978) firstly formulated the idea of transformational leadership which defined the key role of leaders as to develop followers, to map new directions, mobilize resources, facilitate and support, and respond to institutional changes. Apart from this concept, other scholars added the fundamental goals of transformational leaders are to help staff members develop and maintain a collaborative, professional culture; to foster teacher development; and to help them solve problems together more effectively (Cordeiro, P.A. & Cunnningham, W.G., 2013). Bennis and Nanus (1985) defined clearly that transformational leadership would indeed be a process to shape and elevate institutional goals and abilities of stakeholders to achieve critical improvements through shared interests and collective actions.

Engaging Leadership

Engagement is the responsibility of leadership as leaders have to engage themselves into the teamwork spirit and working environment while they have also to enable their team members to be actively engaged in strategic planning, decision making, implementing and evaluating the whole work processes. Based on the qualitative

research findings by Oehler, K., Stomski, L., and Olszewska, M. K. (2014), engaging leaders are those who are involved at "formative early experiences" and share set of deep "guiding beliefs" about leading with their team members and assist their team to actively engage, "engaging behaviors." Engaging leaders lead and walk together with their team, observe people in action, hear about recent challenges, and experience obstacles that they have to overcome and seek solutions. As a result, with this engaging leadership, the team is to be highly engaged that could reach certain levels of innovation, quality, and productivity.

Methodology

The selected data were from 100 scholarly published articles directly related to leadership influencing quality culture in higher education and quality assurance systems from the year 2000 onwards. The data analysis was through qualitative content analysis with the aim to determine the roles and functions of institutional leadership that could drive HEIs to a better performance.

Findings

From all the selected scholarly articles, the researcher extracted leadership roles and functions of HEIs and found out the highest level of occurrences and consensus drawn from the data. The findings demonstrated that the crucial functional roles of leadership to establish a quality culture in HEIs are incorporated into five themes under the GEESE concept: Governance (aspire for results), Engaging (walk the talk), Enlightening (learn together), Sharing (experience together), and Enlivening (grow together).

Governance aspiring for results

HEIs are expected to operate and deliver sound results in line with stakeholders' expectations and standards specified by internal and external quality assurance agencies as well as its unique positioning and mission. It will be beneficial if institutional leaders determine clear strategic directions and guidelines that are also aligned with expected attributes of a quality culture. Having integrated quality culture into university governance as an institutional agenda could convey the strong message as to what results are for the institution to aspire. At this stage, HEIs have to make it clear the direction of what systems and ideal practices the institution would adopt for their quality assurance systems.

Engaging leadership

In HEIs administrators at a department, a faculty or a university are considered academic leaders. Whatever they demand their academic or non-academic staff to adopt and aim to achieve, those followers at this stage need their leaders to walk alongside and go through the process with them. To establish a quality culture, leaders are the right role models to demonstrate the commitment to their goals, what and how they have to do their work, and leaders are coaches walking around ready to assist them whenever they come across difficulties or confusion arisen during the implementation phases. In any quality assurance system, working people face frustration, confusion, and discouragement during an implementation phase regardless

of their years of experience. That moment is when the engaging leaders play a vital role in guiding and working alongside with them and lead them the right path to reach the final destination. It means that engaging leaders themselves must be sufficiently knowledgeable and gain considerable experience in managing *for* and *of* quality through whatever quality assurance systems the institution implements. Such quality assurance expertise could create trust among faculty and staff which will inspire them to become better and to support the development of a quality culture.

Enlightening the team

HEIs are a complex ecosystem where demand complicated leadership competencies and styles to make it healthy. Therefore, leaders cannot be gurus in all aspects of educational institution administration and management, particularly, quality culture development. The HEI leaders then need to learn how to learn and enable others to learn to become better. Getting the right people on board is the starting point of building a positive culture where all are ready to explore to unknown territory and dare to walk out of their comfort zone. Such a team will bring in new practices and methods how to achieve target goals. Quality assurance systems depend on the continuous development of practices and processes, which means that they require a continually constructive PDCA system.

Sharing community

To nurture the quality culture in HEIs, the leaders have to support teamwork and promote a positive learning environment where faculty and staff share their practical knowledge, expertise and active quality systems among themselves. Some selected articles brought up cases where administrators became stumbling blocks in cultivating quality culture by not allowing their team to share their knowledge across disciplines or within an institution. Therefore, leaders at all levels of HEIs have to ensure that the knowledge management system is set up and facilitate the sharing and exchanging of useful information.

Enlivening minds

One of the essential factors posited by the scholars of the selected articles is to enhance the professional capabilities of individual faculty members and staff as well as to enrich their personal well-being. Quality culture could only flourish when each member is fulfilled which will further result in a holistic yet sustainable success through a mixed application of distributed, transformational and engaging leadership.

Conclusion

This paper aimed to illuminate the powerful influence of institutional leaders that does not only affect the achievement of an HEI's mission but also actively shape the culture within the institution. As a result, the leadership directly has an impact towards the successful implement and development of quality assurance standards. The overall findings demonstrated that effective leaders of HEIs must play roles resembling the GEESE model. Firstly, *Governance* is developed and shared by involving administrators, faculty members, and staff to aspire for sustainable expected outcomes. Another functional role is *Engaging* to walk the talk together with the

quality team and also *enlightening* is to learn how to learn together as a team and with a team how to tackle challenges. Besides that, *sharing* is to experience together by paving the paths to improve performances in alignment with expected outcomes and goals of institutions while achieving national or international quality assurance standards. Lastly, *enlivening* is to assure the professional and personal interests of stakeholders be fulfilled. Through synergistic collaboration under the GEESE model of leadership, higher education institutions can improve and sustain quality culture enabling authentic quality development of education responding to society's future needs.

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Characteristics of Multicultural Workplaces in Local Companies in Japan

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Abstract

This study examines characteristics of multicultural workplaces in local companies in Japan's rural areas. It focuses on interactions between Japanese supervisors and their foreign workers in these multicultural workplaces. Results of semi-structured interviews conducted in one rural area show that the main language used in the companies is Japanese and that there are few workshops organised by the companies to help workers improve their understanding of different cultures. Through what they have learnt in their interactions with foreign workers, Japanese supervisors of foreign workers try to improve their leadership skills and attempt to make labour relationships comfortable. Results also show that foreign workers, regardless of their nationalities, gain a better understanding of Japanese conventions through their stay in Japan and aim to adapt themselves to their workplaces. Results provide us with some insight into how Japanese supervisors develop intercultural competence in multicultural workplaces and their role played in helping foreign workers adapt to the workplace.

Keywords: multicultural workplaces, local companies, intercultural communication competence

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Introduction

This study is part of our research project to design an educational programme in universities of Japan's rural areas. Due to expanding overseas business and workforce shortages in Japan, local companies in rural areas have begun to employ overseas students who graduate from Japanese universities. After graduation, Japanese students have an increasing number of opportunities to work in multicultural workplaces, even in rural areas. Therefore, we are expected to design an educational programme that enables Japanese students to develop their competence for working in multicultural workplaces in local and rural companies.

To develop this educational programme, we examined characteristics of multicultural workplaces in Japan's rural areas. The purpose of this study is to understand the characteristics of these multicultural workplaces by focusing on the interactions between Japanese supervisors and foreign workers. Previous studies on the interactions between Japanese workers and foreign workers in multicultural workplaces in Japan have revealed that the interactions between these two groups have an influence on both groups. For example, Miyagi and Nakai (2016) conducted interviews with a foreign worker's four former Japanese colleagues in Japan and their results suggested that the Japanese colleagues seemed to change their image of foreign workers through the interactions with one. Shimada and Nakahara (2014) examined how the interactions between Japanese supervisors and their foreign workers in Japanese companies influenced foreign workers' organisational socialisation. They also demonstrated that the type of support and amount of support given by Japanese supervisors played an important role in foreign workers' organisational socialisation.

The rest of this paper is structured as follows. In the next section, the research method is explained. In Section 3, the research results are examined. We focus on how Japanese supervisors of foreign workers are affected by their interactions with their subordinates, and how foreign workers are affected by their interactions with their Japanese supervisors. Section 4 discusses implications of the results. Section 5 summarises the study conclusions.

Methodology

Semi-structured interviews were conducted at companies in a rural area of Japan. All the company headquarters were based in the area. The area, like some others in Japan, is facing the serious problem of declining population (Ministry of Internal Affairs and Communications 2017, July). Study participants included 20 Japanese people and 10 people from foreign countries. Japanese participants included those employed in a personnel department, supervisors of foreign workers and a colleague of a foreign worker. Half of the foreign workers graduated from Japanese universities or graduate schools of Japanese universities. The interviews were conducted between January and April 2018.

Request letters for research were distributed to companies in the area to gain permission for interviews. The request letter explained the purpose of the interviews, types of desired interviewees, the main questions asked at the interview, length of the interview and the plan to protect the study data. All the interviews were recorded with

IC recorders after gaining the interviewees' permission.

Questions to those who worked in a personnel department included outline of the company; company expectations for foreign workers; problems of a multicultural workplace; and how the company copes with these problems. Questions to Japanese supervisors of foreign workers and to a Japanese colleague of a foreign worker included what they try to do as the supervisors/colleague of foreign workers; difficulties they face as the supervisors/colleague of foreign workers; and how they cope with those difficulties. Questions to foreign workers included what they try to do when working with Japanese workers; difficulties they face when working with Japanese workers; and how they cope with these difficulties. Questions following up on interviewees' comments were also asked during the interviews.

In some companies, the same Japanese senior member of a company played the role of both a personnel department employee and a supervisor of foreign workers. Each interview lasted about 30 minutes.

Results

This section examines the results obtained from the interviews and focuses on the interactions between Japanese supervisors and foreign workers in multicultural workplaces. First, we focus on how Japanese supervisors of foreign workers are affected by their interactions with foreign workers. Then we focus on how foreign workers are affected by their interactions with Japanese supervisors.

How Japanese supervisors of foreign workers are affected by their interactions with foreign workers

The main language used in the companies is Japanese. There are few workshops organised by the companies to help their workers gain a better understanding of different cultures. In these circumstances, Japanese supervisors of foreign workers try to improve their leadership skills and attempt to make labour relationships comfortable through what they have learnt in their interactions with foreign workers. Table 1 describes difficulties that Japanese supervisors have experienced in multicultural workplaces.

Table 1
Difficulties that Japanese supervisors have experienced

Examples of difficulties	Cause of difficulties
•Foreign workers did not understand what was said in Japanese.	Level of foreign workers' linguistic competence
•Foreign workers did not understand technical terms in Japanese.	Foreign workers' lack of knowledge of working field
• Foreign workers did not know Japanese business manners.	Foreign workers' lack of understanding of Japanese business conventions
• Foreign worker was not accustomed to Japanese table manners.	Foreign workers' lack of understanding of Japanese surface culture
• Foreign workers were not punctual.	Foreign workers' lack of understanding of Japanese deep culture
•Although foreign workers did not understand what was said, they told that they understood it.	Foreign workers' hesitation in saying their lack of understanding

As Table 1 shows, the difficulties for supervisors are caused by a variety of factors. For example, the first row in Table 1 illustrates that there are sometimes difficulties caused by their foreign workers' low linguistic competence. (Here linguistic competence means the knowledge about vocabulary and grammar of a language.) The third row in Table 1 illustrates that another difficulty is caused by foreign workers' lack of understanding of Japanese business conventions.

In addition to the difficulties illustrated in Table 1, combinations of reasons might cause the difficulties described by Japanese supervisors. For example, some supervisors thought that their foreign workers understood what was said in Japanese, but later they learned the foreign workers had not actually understood. This is an example of miscommunication that can be caused by multiple reasons including foreign workers' low linguistic competence, foreign workers' lack of understanding of Japanese deep culture (i.e. Japanese communication style), and Japanese supervisors' lack of understanding of cultural differences in communication styles.

How do Japanese supervisors try to overcome these difficulties to make labour relationships comfortable? Table 2 below describes the strategies employed by supervisors.

Table 2
What Japanese supervisors do to overcome difficulties

What supervisors do	Examples
Consideration for foreign workers' linguistic competence	•Speaking slowly •Speaking with simple words •Using English •Giving opportunities for foreign workers to talk with Japanese colleagues in Japanese as many as possible
Consideration for cultural differences	•Consideration for differences in communication styles •Consideration for differences in customs
Advice and encouragement	•Teaching what to do when foreign workers have difficulties in their works •Encouraging foreign workers when they have difficulties •Listening to foreign workers' problems
Asking foreign workers about their cultures	•Trying to expand knowledge of foreign worker's own language

Consideration of foreign workers' linguistic competence was most frequently highlighted by supervisors. This is understandable, given that foreign workers' low linguistic competence causes variety of difficulties for Japanese supervisors.

Consideration for cultural differences is divided into two types, namely consideration for differences in communication styles and consideration for differences in customs. Regarding the consideration for differences in communication styles, some supervisors will avoid using the high-context communication style that they would normally use when talking to Japanese colleagues. As for consideration for differences in customs, one supervisor gave the following example: Japanese workers keep workplaces clean and tidy but the supervisor could not ask his foreign workers to do the same cleaning tasks because the foreign workers do not have this custom of cleaning by themselves in their home country.

Experiences working with foreign workers influence the attitudes and skills of Japanese supervisors. Japanese supervisors make efforts to shift their attitudes due to similarities and differences between cultures and also develop skills to communicate effectively with foreign workers, as evident in Table 3.

Table 3
Where influence of intercultural interaction on Japanese supervisors is seen

Where	Examples
Attitudes towards other cultures	•Coming to recognise that his foreign worker is glad, angry, sad or happy in the same manner as Japanese people • Coming to recognise that it is important to think that his foreign worker is similar to Japanese colleagues except for his Japanese proficiency level •Emphasising it important for Japanese people to understand other cultures
Skills for effective communication	•Finding communication strategies effective for his interaction with his foreign worker, and trying using the strategies in his interaction • Listening to his foreign worker carefully to understand him better and making the working environment comfortable • Doing his best to avoid using the high-context communication style in multicultural workplaces

The dynamic movement in the level of Japanese supervisors' attitudes towards other cultures is categorised into two types. One type is to emphasise cultural similarities rather than cultural differences. The first two examples in 'Attitudes towards other cultures' in Table 3 fall into this type. The other type is to emphasise the importance of understanding cultural differences. The third example in 'Attitudes towards other cultures' in Table 3 falls into this type. Japanese supervisors also develop and use effective communication skills (see the examples in 'Skills for effective communication' in Table 3).

How foreign workers are affected by their interactions with Japanese supervisors

Foreign workers, regardless of their nationalities, gain a better understanding of Japanese conventions through their stay in Japan. This is particularly true if foreign workers have worked after graduating from Japanese universities. Table 4 presents some comments given by Japanese supervisors.

Table 4
Japanese supervisors' impressions of their foreign workers' understanding of Japanese conventions

•Foreign workers understand Japanese communication style since they have lived in Japan for several years.
•One supervisor has few difficulties working as a supervisor since his foreign worker has lived in Japan for nearly ten years and has a better understanding of Japanese conventions.
•Foreign workers have been in Japan for several years, are interested in Japanese animations, and are familiar with Japanese conventions.

All the foreign workers who participated in the study have experienced some difficulties whether or not they understand Japanese conventions (see Table 5). It is of interest that Japanese supervisors and foreign workers do not always regard the same issues as difficulties. For example, both Japanese supervisors and foreign workers regarded foreign workers' not understanding what was said in Japanese as a difficulty (see Tables 1 and 5). This is because foreign workers' understanding is essential for carrying out work tasks properly. If foreign workers cannot understand what is said in Japanese, then problems may occur for both Japanese supervisors and foreign workers. On the other hand, foreign workers regarded appropriate use of Japanese honorific forms as a difficulty, but Japanese supervisors did not. This is probably because proper use of honorific forms likely does not change the content of what the foreign worker said. Thus, Japanese supervisors may not regard foreign workers' inappropriate use of Japanese honorific forms as a difficulty in multicultural workplaces. However, in general, we are expected to use language appropriately according to the social context or person we speak to. So, if we do not use Japanese honorific forms appropriately, then we might be regarded as being rude and/or impolite. That is why foreign workers try to use Japanese honorific forms appropriately.

Table 5
Difficulties that foreign workers have experienced

Examples of difficulties	Cause of difficulties
•Foreign workers could not understand what was said in Japanese. • Foreign worker felt tired from business meetings in Japanese that last long.	Level of foreign workers' linguistic competence
• It was difficult to use Japanese honorific forms appropriately.	Level of foreign worker's sociolinguistic competence
•Foreign workers did not understand technical terms in Japanese. •Foreign worker was confused because of the lack of knowledge of working field.	Foreign workers' lack of knowledge of working field
•It took time to be accustomed to workplaces in Japan. •Foreign worker did not know customs related to business drinking parties, e.g. where to sit at business drinking parties.	Foreign workers' lack of understanding of Japanese business conventions
•Heavy snow in winter made the daily life in the area inconvenient.	Weather in the area

With these difficulties, what do foreign workers do to adapt themselves to their workplaces? We identified four key ways that foreign workers adapt to their workplaces. They are presented in Table 6.

Table 6
Key elements in foreign workers' adaptation to their workplaces

Elements	Examples
Asking Japanese people working together when having questions/problems	•Foreign workers ask their colleagues whenever they have problems. •Foreign workers ask their colleagues without hesitation.
Viewing characteristics of Japanese people and conventions of Japanese business in a positive way	•It takes time to achieve the goals in Japanese companies because various issues have to be checked before launching their projects. •Japanese people have high sense of responsibility for their work.
Finding positive aspects of living in the area	•Being satisfied with living environment in the area •This area provides foreign worker with jobs which he is interested in.
Building good relationships with Japanese people working together	•It is important to go for a drink with Japanese colleagues to get to know each other better.

The most common way that foreign workers cope with their difficulties is to ask their Japanese co-workers for help. This means that Japanese people working with foreign workers play important roles in foreign workers' adaptation to their workplaces, and that building good relationships that enable foreign workers to ask Japanese people for help without hesitation is crucial in adaptation to the workplace. We will return to this point later.

Discussion

In this section, we discuss the implications of the results. First, we discuss Japanese supervisors' intercultural competence, which is developed through interactions with foreign workers. Then, we discuss the role that Japanese supervisors play in foreign workers' adaptation to their workplaces. Finally, we briefly discuss how to increase the number of foreign workers living and working in the rural area.

Development of Japanese supervisors' intercultural competence

To measure the progress of Japanese supervisors' intercultural competence in multicultural workplaces, we use the 'Intercultural Development Continuum' (Hammer 2012). The Intercultural Development Continuum is 'a theoretical framework that ranges from the more monocultural mindsets of Denial and Polarization through the transitional orientation of Minimization to the intercultural or

global mindsets of Acceptance and Adaptation' (Hammer 2012: 118). Each stage depicts different attitudes and behaviours towards cultural differences. Individuals in the stage of Denial often do not recognise cultural differences. Individuals in the stage of Polarization recognise the existence of cultural differences and think about 'cultural differences from an "us versus them" perspective' (Hammer 2012: 121). According to Hammer (2012: 121), 'Polarization can take the form of Defense ("My cultural practices are superior to other cultural practices") or Reversal ("Other cultures are better than mine").' Minimization is a transitional stage. In this stage of development, identifying cultural commonality is highlighted. Appreciation of cultural differences occurs at the stage of Acceptance. For individuals in this stage, 'diversity feels "understood."' (Hammer 2012: 123) Finally, Adaptation is the stage in which individuals are 'capable of shifting cultural perspective and changing behavior in culturally appropriate and authentic ways' (Hammer 2012: 124). For those who are in this stage, 'intercultural competence means adaptation in performance' and 'diversity feels "valued and involved."' (Hammer 2012: 124)

As Table 3 in the previous section indicates, Japanese supervisors' attitudes and communication practices are influenced by multicultural workplaces. The Japanese supervisors display two types of attitudes. One type is to emphasise cultural similarities rather than cultural differences, and the other is to emphasise the importance of understanding other cultures. The former type is regarded as being in the stage of Minimization and the latter type is regarded as being in the stage of Acceptance. Regarding skills for effective communication, Japanese supervisors think of what is effective in their intercultural interactions, find effective strategies for intercultural interactions through trial and error, and use these strategies in their daily interactions. This means that they are in the stage of Adaptation.

In our data, the Japanese supervisors' developmental stage of their attitudes towards cultural difference is different from that of their skills for effective communication. This implies two possibilities. One possibility is that developing skills for effective communication might be more urgent for Japanese supervisors than shifting attitudes towards cultural differences. Communication is essential for carrying out work tasks. The other possibility is that developing skills for effective communication might be less difficult than shifting attitudes towards cultural differences.

Japanese supervisors' role in foreign workers' adaptation to their workplaces

As Table 6 in the previous section shows, foreign workers ask Japanese people for help with their difficulties. This means that building relationships that enable foreign workers to ask Japanese people for help without hesitation is crucial for foreign workers' adaptation to their workplaces. How can such relationships be built?

Shimada and Nakahara's quantitative study (2014) demonstrates that the type of support and amount of support provided by Japanese supervisors play an important role in foreign workers' organisational socialisation. In our study it was predicted that Japanese supervisors' support must be important in building good relationships. Let us look at the results again. As Table 2 in the previous section shows, Japanese supervisors support foreign workers in various ways. For example, Japanese supervisors give advice to foreign workers when they have difficulties in carrying out work. This falls under what Shimada and Nakahara (2014) call business support. In

addition, Japanese supervisors encourage foreign workers when the foreign workers have difficulties regarding not only their work but also their daily life.[1] This is an example that falls under what Shimada and Nakahara (2014) call mental support. Some foreign workers' comments make it clear that Japanese supervisors' encouragement helped to build good relationships. Moreover, Japanese supervisors ask foreign workers about their cultures and expand their knowledge about the foreign workers' cultures. This falls under what Shimada and Nakahara (2014) call cultural support. It seems that supervisors' various support as well as foreign workers' efforts plays important roles in building relationships.

Importance of making the rural area attractive

As Table 6 in the previous section shows, finding positive aspects of living in the area is one of the key elements in foreign workers' adaptation to their workplaces. One positive aspect that participants pointed out is the living environment. For example, people in the area can have a short commute to work from home either by car or by train. Usually traffic is not heavy and trains are not crowded when compared to the Tokyo metropolitan area. In the Tokyo metropolitan area, many people have a long commute to work and take very crowded trains. It is important to find other ways to make the rural area attractive to increase the number of foreign workers living and working there.

What should we do to make the rural area more attractive? Based on the comments from foreign workers, we suggest two things. First, we should advertise the area to more people. One foreign worker commented that his friends had not even known where the area was until the foreign worker moved there. Second, Japanese people in the area should have more opportunities to interact with people from different cultural backgrounds and develop their intercultural communication competence. One foreign worker commented that Japanese people in the area are not accustomed to interacting with people from different cultural backgrounds, and that the foreign worker is often asked the same questions by people he meets, such as why he lives in Japan and where he is from.

Conclusion

The purpose of this study was to understand characteristics of multicultural workplaces in rurally-located, local companies in Japan by focusing on the interactions between Japanese supervisors and their foreign workers. The results gained from semi-structured interviews conducted in local companies of one rural area provide us with some insight into how Japanese supervisors' intercultural competence is developed through experiences working with foreign workers and the role that supervisors play in foreign workers' adaptation to their workplaces. Furthermore, the results suggest that it is important to make the rural area attractive to increase the number of foreign workers living and working there.

The significance of this study is to have investigated multicultural workplaces in rurally-located, local companies and to have demonstrated how intercultural interactions affect both Japanese supervisors and their foreign workers. As our previous study shows, Japanese students, who are expected to work in rurally-located, local companies after graduation, have surprisingly 'little experience interacting with

people from different countries' (Yamada et al. 2018: 178). How can we create more opportunities for Japanese students to interact with people from different cultural backgrounds and find strategies for effective intercultural interactions? What kinds of in-class and out-of-class activities will help students develop their intercultural communication competence? These questions need to be addressed through further research.

Acknowledgements

Footnote

1. Moriya (2017) suggests that the distance between employers and employees is close in medium and small-sized companies in Japan and that by helping their foreign workers solve problems caused by cultural differences, the employers foster their good relationships with their employees and promote their foreign workers' adaptation to their workplaces. Moriya's (2017) suggestion reinforces our view that encouraging foreign workers when the foreign workers have difficulties regarding their work and/or their daily life is important in building good relationships.

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The Impact of the Western Liberal Arts Education in the MENA Region:
A Case Study

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Abstract
This study focuses on the development of the millennial generation within the liberal arts education setting. It has been demonstrated that the values of different generations periodically change. It is the university's duty to articulate the distinctive sociological, ideological, and psychological variations of each generation in order to provide the most viable educational system. Follow-up researches in different educational systems should be conducted regularly in order to incorporate new data from the rapidly changing millennial generation. This particular research focuses on understanding student development models that adequately demonstrate the effectiveness of a liberal arts education within the MENA region. The emphasis of this paper is on Arab students within transnational settings, focusing on the American University in Cairo and the American University of Kuwait.

Keywords: Arab, millennial, learning outcome, liberal arts education, transnational

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Introduction

To have an effective educational system, institutions should meet the needs of the community and the current generation. The university structure should be adjusted and developed according to the rapidly changing needs of prospective students, but this is often neglected in Liberal arts universities in transnational settings (Lowery, 2016). Hence, the student is obliged to accommodate to the pre-structured educational settings. Globalization is the catalyst that altered the way in which higher educational institutions develop in order to satisfy new generational needs (Chopp, Frost, & Weiss, 2013). Globalization has intensely impacted the millennial generation; it started in the early 1980's and continues until the present era. This generation is heavily influenced by the diverse hyperactive digital culture, which causes them to stray away from their cultural roots (Park, 2013, p.118).

This study provides a better understanding of the effectiveness of the Western liberal arts model of higher education within transnational university settings. It primarily focuses on examining the pedagogies of student learning outcomes, and comparing the learning experience of undergraduate junior and senior students from the American University in Cairo (AUC) and the American University of Kuwait (AUK).

The purpose of this study is to aid in developing a better understanding of the liberal arts educational system by integrating the cultural aspects and beliefs of the MENA area. In order to clearly illustrate the integration and bridging of gaps between American ideology and Arab student identity, it behooves researchers to study both AUC and AUK. Both universities are international educational institutions in national contexts. They follow international systems; have local and international students, as well as faculty. Being in such a diverse environment allows each student to acquire knowledge in various ways. The main concern of the present research is to examine the effects of studying in a western liberal arts educational system on the daily lives of upper classmen; one wonders, is it beneficial or not. Besides this, further investigation attempts to reach a consensus on how students interpret the liberal arts education system itself. The study is organized to answer the following questions:

1. How is the liberal arts model of education interpreted by junior and senior students who attend AUC and AUK?
2. How does the Western liberal arts education model impact the development of students within the MENA region, as exemplified by AUC and AUK?

This study will thus allow for a better understanding of the current liberal arts educational institution present in AUC and AUK in order to provide the best educational atmosphere for this generation. Consequently, we will be able to alter and create a better educational format that will benefit the upper-class students in their daily lives through what they learn at the university. This does not necessitate that it is only limited to the material covered inside classrooms. The liberal arts education also emphasizes learning through extra-curricular activities, as students are known to learn from their peers as they learn from their professors.

Literature Review

The liberal arts educational model will be stated while focusing on the millennials generation and the emerging of the liberal arts educational system and its impact on the millennials generation. Subsequently, a more in-depth study will be conducted on two different institutions in the Arab region adopting a transnational educational system through the liberal arts education. Thereafter, an analysis will be provided of the process of policy borrowing in terms of borrowing and lending of various perspectives in varied contexts from within the educational exchange. Finally, the theory of the seven principles of good practice by Chickering and Gamson will be implemented to improve the undergraduate education of good learning and teaching process.

Liberal Arts Approach

The liberal arts approach structures the mindset of students so that they develop into critical thinkers, a vital necessity for any free society. Accordingly, a liberal arts education cannot be defined as a form of knowledge and learning that is acquired solely from books; rather, it must be deeply intertwined with the individual's thoughts, ideas and individual concepts. Likewise, such an educational experience should also include serious reflection on personal experiences (Paino, 2014).

The Liberal Arts approach seeks different implementations of education through both academic and extra-curricular endeavors. Currently, the Liberal Arts curriculum has developed into a more in-depth interdisciplinary coursework that includes fields such as the humanities, social sciences, natural sciences and formal sciences. By being exposed to and involved in activities specifically relevant to career preference, the liberal arts methodology also shapes the student into an individual prepared to work in various work sectors (Logan & Curry, 2014).

Critical thinking is recognized as the key factor of a liberal arts education. It encourages students to refine their ability to think through the process of deep inquiry into ambiguous and complex topics, and attempts to guide students to resolve challenges. This is accomplished by assessing, clarifying and integrating evidence. Critical thinking supports student learning, which ultimately prepares them for workforce exposure. Critical thinking is self-guided, self-trained and self-observed. Furthermore, liberal arts colleges place an emphasis on development of the intellectual capacity of each students individual decisions. It is also essential to highlight the moral aspect of the students' individuality by incorporating developmental tools that help enhance moral character. Moral character does not imply the authority of a particular code of ethics, but instead it refers to the development of propensities and qualities that strengthen moral conduct independently.

The dynamics of extra-curricular activities strengthen the social learning paradigms of the student's educational outcome. For example, a number of colleges offer a variety of leadership programs to enhance student education by referring and linking them to people who intellectually benefit them in their particular field (Chopp, Frost, & Weiss, 2013).

Millennials

Millennials constitute the generation that was born from the early 1980's to the early 2000's (Park, 2013). They also fall under the name of Generation 'Y'. However, Generation 'X' they are the generation that is preceding the Millennials. The Generation 'X' and Generation 'Y' division specifically differentiates between the unique demographic and societal upbringing of each generation. The nature of the developmental surroundings changed drastically from generation 'X' to generation 'Y'; the latter generation (Y), possessed a different nurture environment which created supportive social relations for its constituents. (Bolton et al., 2013).

The Liberal Arts Education and Millennials

Generation 'Y' does not believe in individualism and they depend on teamwork to deal with various issues. They provide a lot of diverse ideas that would suit different situations; this proves their leadership and dependence on the new school of thought. The features definitely place this generation under great pressure as their expectations heighten to unprecedented levels (Woodall, 2004). The characteristics of a liberal arts education enable the millennial generation to be almost anyone based on the form of education given to them using the liberal arts system along with the programs provided in helping to shape their teaching and learning strategy. The seven criteria that characterize Generation 'Y' are special, sheltered, confident, team-oriented, conventional, pressured and achieving. (Ng, Schweitzer & Lyons, 2010, p. 285). They are notably more resourceful than the previous generation 'X' due to the fact that there are various research tools available that make the new ideas they produce credible as it has a solid base. Furthermore, the millennial generation's confidence stems from its immense contribution to its own society (Woodall, 2004). In order to effectively educate different generations, by meeting their respectively unique standards, there is a need to innovate diverse educational strategies. As for the millennial generation, new educational methodologies are clearly necessary. The earlier generation of educators is clearly different than the millennial generation; hence, educators must have clear understanding of the technological adaptation of the millennials (McAlister, 2009).

Transnational Education within a Liberal Arts Education

Transnational education highly depends on a rationality enlivened by the acts of transnational partnerships that always look to grow their business sectors by achieving clients' needs across nations (Francois, Avoseh, & Griswold, 2016). Students associated with a transnational educational program are foreseen to adjust to educational modules and instructional practices directed by organizations that are intentionally going to be within their nations of origin. The method of transnational higher education does not merely focus only on conveying the information; it also emphasizes diverse philosophical aspects, which introduces new ideas alongside the educational implications that current definitions neglect to catch. Educational projects can exist through perspectives, which can be philosophical or educational, with a focus on the method through which the message is conveyed. Transnational education includes activities and practices that go beyond national limits. It refers to the possibility of exchange over nations with no barriers or limits (Francois, Avoseh, & Griswold, 2016).

The American University in Cairo

The American University in Cairo (AUC), founded in 1919, is a not-for-profit research based liberal arts institution of higher education that focuses on research as well as contributing to the overall Egyptian community in various fields. Charles A. Watson, the founding president, hoped to establish an English-language university based on the elevated expectations of its pioneers. The Egyptian community was seeking through the development of individuals, who would be eager to carry on AUC's mission to the diverse communities (The American University in Cairo, 2016).

AUC's extensive and rigorous programs aid overall student wellbeing and encourage intellectual freedom of the mind. The core curriculum at the American University in Cairo (AUC) lies in the Liberal Arts education. The goal of the liberal arts educational system is to guarantee that all students, regardless of their major, have a strong understanding of the traditional liberal arts and sciences.

The American University of Kuwait

The American University of Kuwait (AUK) is a private higher educational liberal arts institution founded in 2003. AUK is a young comprehensive and co-educational university that fosters excellence in knowledge and skills that represents an American model of education. The language of instruction at AUK is English. Dartmouth College in Hanover, New Hampshire, an Ivy League School, and AUK have signed a Memorandum of Understanding that encourages the student, staff and faculty community to cooperate in projects by their advisory and consultations. AUK has earned its first accreditation by Dartmouth in 2006 and was re-accredited recently by the Private Universities Council (PUC)–Ministry of Higher Education in Kuwait–in June 2015.

AUK embraces its students by developing life-long learners who are well-rounded in society and encourages them to be critical thinkers, innovators and leaders of the community. The curriculum provided to the students at AUK is expansive with in-depth studies from different colleges within the university.

Policy Borrowing

Policy borrowing in education is a phenomenon used to transfer academic reform from one country to another, articulating a professional educational strength and importing the best practices (Steiner-Khamsi & Waldow, 2012). In other words, policy borrowing is a form of educational transfer—with some adaptations—that occurs from one country to another with a keen focus on the best curriculum and practices. To exchange and properly implement an educational model from one system to another is not expected to be successful nor fruitful unless certain factors are taken into consideration.

The Seven Principles of Good Practice by Chickering and Gamson

The Seven Principles of Good Practice in undergraduate education, by Chickering and Gamson, are guidelines for students and faculty members to follow in order to

improve learning and teaching techniques in primary, secondary and higher education (Chickering & Gamson, 1991). Implementation of these principles helps emphasize the significance of faculty members, students and staff in incorporating different tactics that improve student development in addition to cultivating student personal identity.

Chickering (1993) proposed seven factors that aid identity formation: competence development, emotion management, and movement from autonomy towards interdependence, development of mature interpersonal relationships, identity establishment, purpose development, and integrity development. Chickering and Gamson's (1987) principles were selected for improving the liberal arts education by offering an exceptionally precise approach to "improving teaching and learning given that a robust base of research undergirds these principles" (Sorcinelli, 1991). The seven principles of good practice pertain to the encouragement of student-faculty contact, development of reciprocity and cooperation among students, encouragement of active learning, faculty giving prompt feedback, emphasizes time on task, communicates high expectations and respects diverse talents and ways of learning.

Research Setting

This research focuses on higher educational universities in the Middle East. The American University in Cairo, established in 1919, is an English- language university. It is accredited in Egypt by the Ministry of Higher Education and accredited in the United States by the Middle States Association of Schools and Colleges. It is the focal point of developing a person's social and cultural existence in the Arab world, particularly Egypt. With a diverse faculty and student body on campus, AUC contains around 60 different nationalities. AUC has formed a society of long lasting learning, leaders and many services to enhance student experience. It is devoted to making critical commitments to the Egyptian community and maintains the standards of scholarly opportunity. The American University of Kuwait (AUK), established in 2003, is also an English medium university. AUK received its accreditation in 2006 from the Private University Council. This university provides its students with a well-rounded education that enhances overall knowledge and skills. AUK enriches Kuwaiti society by encouraging its students to be lifelong learners and leaders, and to always enhance their critical thinking skills.

AUC and AUK have one common feature regarding the student body. In the two universities, the student body is composed of individuals from various social and cultural backgrounds. While some are foreigners, others are local; as each student has their own customs and traditions, this constitutes the very diversity of the campus and the educational experience. Besides the diversity due to foreign students, the locals also come from different areas within the country; some are from suburbs while others are from the city. When it comes to spotting differences, the main factor of concern would be that the students joining AUC and AUK go through an overwhelming phase where they learn about the university and become familiar with not only academic matters, but also student life.

Research Method

A qualitative research approach was primarily used in this study to understand the reasons underlying diverging student perspectives. A semi-structured interview protocol, containing open-ended questions, was utilized to measure the effectiveness of the liberal arts education system on Middle Eastern students, specifically those enrolled in AUC and AUK. Interviews were prepared, analyzed and conducted thoroughly through the data with consideration. This was accomplished by decoding and sorting data gathered from the interviews. Interviews revolved around the liberal arts education and the interviewee was given the freedom to express personal opinion and educational experience. Additionally, broad questions that lead to in-depth and detailed topic discussions were included. The interviewee would speak and express their own thoughts and feeling with no constraints at all. Interviews followed a particular sequence, consisting of 7 questions centered on transnational universities— AUC and AUK —in the Middle East (Appendix A). Questions began with testing participants understanding of liberal arts to following a more specific experience and exposure of the interviewee.

After this act of introspection, I selected a proper approach to begin with. I started by transcribing all the interviews of students from AUC and AUK; then I highlighted the similarities and differences between both universities. Afterwards, I analyzed the common major theme that students from both universities discussed, and discovered how just because they are all studying a liberal arts education system they have similar and corresponding opinions and ideologies. Subsequently, I looked into the different themes and was able to merge the similar opinions from student's interviews in both institutions in the theme that best illustrates it. I thereby started collecting the responses of AUC and AUK students into the answers of the research questions.

Findings

While hearing the responses of the interviewees, I was able to link themes that were stated by the students from the two different institutions. Each session took place in a conference room in the library or a private room. The session, depending on the information the student provided, took a maximum of an hour. Towards the final interviews, I compiled data that worked with the themes. The objective was to accumulate data that supports the objective of the research via analysis, theories and interviews.

The themes I have selected resonate with the collected data along with the qualitative research methods that were implemented.

Major Themes

Major Theme One: Unpreparedness of Faculty in Liberal Arts Education

High expectations are not fulfilled unless students and faculty effectively communicate and interact to improve the educational experience for the student. In response to this issue, Chickering and Gamson responded with principle one— encouragement of student-faculty contact—and principle six—communicates high expectations (Chickering & Gamson, 1991). Anna Neumann affirmed that

understanding faculty members and their academic learning is imperative in light of the fact that the essential action to be taken by the faculty is to designate, share, and implement professional knowledge and curriculum that will help enhance student development (Neumann, 2009).

Interacting with faculty members improves students' intellectual perspectives. Regarding principle six, it is important to hold high expectations because to expect more is to receive more. Faculty members cannot (or should not) be hired at a university merely to occupy the number of places needed for a particular department or major. The faculty is a vital element that enables and supports student ability to obtain an enriching educational experience. Neumann (2009) noticed that the idea of scholarly learning—synthesis of learning, teaching and researching through higher education—ought to be connected as a focal point for higher education to contemplating the work of the faculty.

Major Theme Two: Awareness of Liberal Arts Education

Students are often not aware of the purpose of a liberal arts education since, as freshman, they lack an understanding of the importance of taking liberal arts courses. As mentioned by an AUC student, the Advising Center is expected to explain this:

As reported by Bloom in 1987, at the point when an undergraduate student enters the university, the student feels confusion because of the vast range of courses offered by the particular departments or the advising center. Also, there seems to be no agreement or harmony within the university, and no official direction about what the student ought to learn (Bloom, 1987). This demonstrates that students held high expectations upon entering the university.

Major Theme Three: Apply Theory to Practice

It is very beneficial for students to be exposed to a variety of learning techniques that enhance their abilities both as undergraduate student and graduate students. Liberal arts courses serve to expand student knowledge; however this effect fades away because active learning techniques were not applied, according to an AUK student.

Subsequently, the third principle corresponds with student perspectives and states that undergraduate students don't learn by sitting in a classroom while passively collecting information from faculty members, memorizing discussions and chapters, and merely regurgitating answers.

Major Theme Four: Lack of Implementation

Faculty will not succeed if knowledge is not properly transmitted to the student, especially if there is no proper time management nor utilization of variety of active learning techniques. Evidence is demonstrated by Chickering and Gasmon in two principles that coincide with one another. The third principle is encouragement of active learning where students are more involved if stimulated by the usage of different learning methods. Emphasizes Time on Task is the fifth principle. There is no viable replacement for time on tasks. It is essential for students and professionals to realize how to utilize one's time. It is necessary to teach time management to all

undergraduate students. Assigning reasonable time means productive learning for students and sufficient teaching for faculty members.

Major Theme Five: Understanding One's Quality and Value

A liberal arts education includes three values in order to achieve one's maximum capacity; it "involves an experience of intrinsic value, the development of formal skills and capacities, and a recognition of greater purpose and service to others, including a modest overestimation of one's abilities" (Roche, 2010). Due to the myriads of available courses and unique exposure in classes, student understanding greatly expands through liberal arts courses.

Major Theme Six: Diversity in Course Options

Liberal arts education courses provide a diversity of disciplines. It respects and serves the different talents of students since students differ in abilities. Diversity in course options allows student to broaden their intellectual horizon with courses that spark personal interest. Regarding the core curriculum model, particular courses are offered that are general in degree and meet essential and wide ranged goals. This approach assumes that distribution alone is insufficient. Instead, particular courses ought to be customized to give a more rational and reliable learning background, and to also take into consideration the integration of subjects along different disciplines in significantly more detailed than a dissemination prerequisite (Boyer and Kaplan, 1994). Latzer (2004) contends that the demands of the students and the need of certain faculty members to teach within their disciplines has urged the failure of the core curriculum because students often seek the faculty member with the style of their preference.

Minor Themes

Minor Theme One: Diversity among students

Knowledge exchange and cooperation amongst students is very essential. Learning improves when students collaborate in groups, presentations and discussions. A good model of learning actualizes when more cooperation and participation occurs rather than aggressive and enclosed behavior. Sharing one's own particular thoughts and reacting to others' responses develops and strengthens understanding.

According to Khmelkov and Hallinan in 1999, it has been discovered that ethnic diversity within a classroom increases interaction amongst people of different ethnicities and races Despite the possibility that the young students do not necessarily form friendships through such interactions, contact within the classroom, and positive encounters during cooperative assignments, may be sufficient to enhance students' states of mind (van Geel & Vedder, 2011). The effects of student interaction on the educational experience are quite obvious.

Minor Theme Two: Global phenomena versus student's welfare

Students have certain expectations when applying to a university. They tend to believe that they will receive a high quality of education that will elevate and develop

their educational capabilities and points of strength. Some student responses from the interviews reflected that this was the initial conception students had of their education in the university; this was also how they imagined to benefit from the educational system after graduation. Several students highlighted that they were surprised—after exposure during courses and spending years in the university—that the institution focuses on the market needs over the individuality of each student. According to Chickering and Gamson, the above findings fall under principle six. Principle six clearly demonstrates the expectations of students from freshmen to seniors.

The results of the qualitative study, in the form of thematic responses to the interview's open-ended questions, are presented in the graphs below.
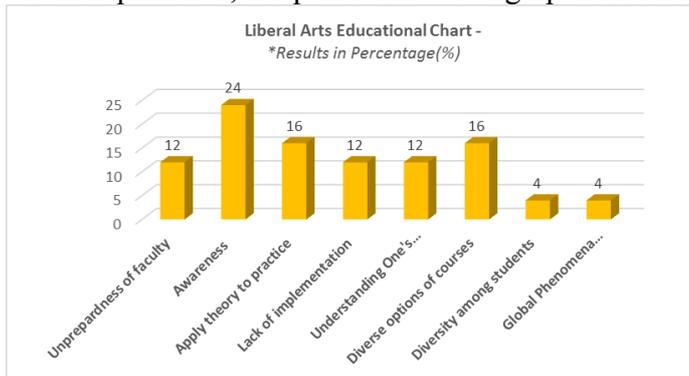

Figure 1: Liberal Arts Education Chart
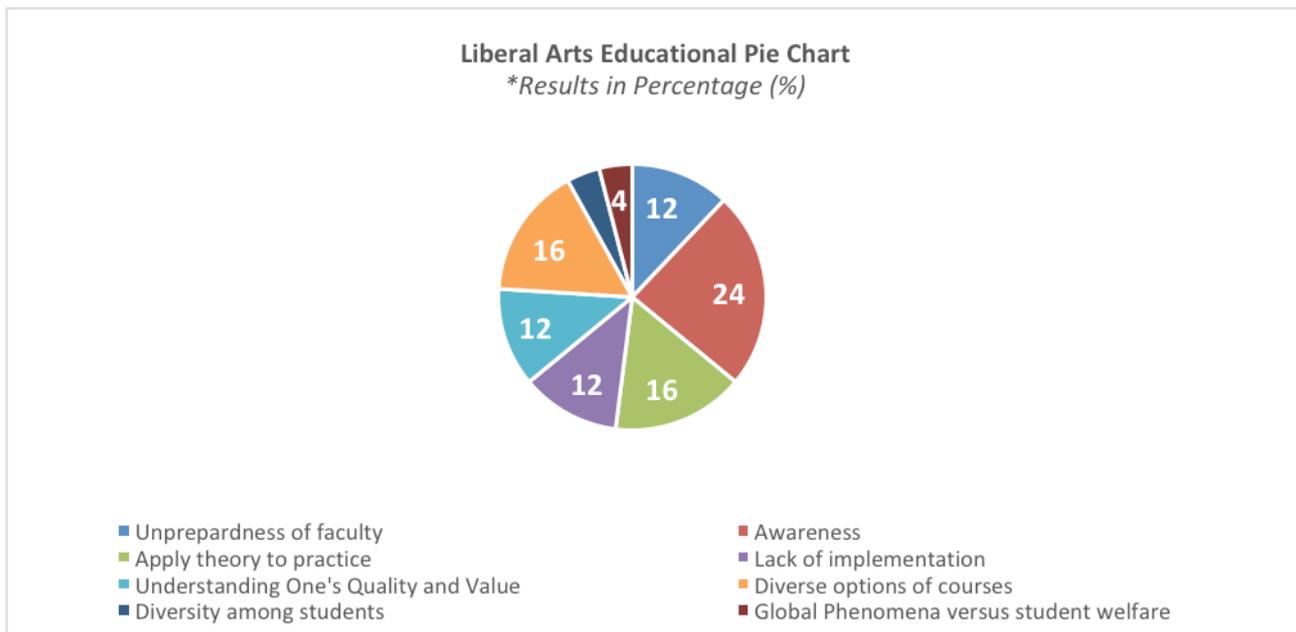
Figure 2: Liberal Arts Educational Pie Chart

As shown in the graph, 24% of students share a concern about the lack of awareness of the liberal arts education within their university. Students expressed the need for a better vision and understanding of the purpose of a liberal arts education. They feel that the benefits of such an education should be well communicated through different entities within the university. 16% of students stated the need for increased diversity of courses to choose from. Students also pressed for having more disciplines to match diversity of student interests. Moreover, 16% of students emphasized the importance of practicing what is merely learned on a theoretical level. Students believe that in

order to grasp and fully understand concepts within a liberal arts education, they should be entitled to apply theory to practice and deeply reflect upon acquired knowledge. Three different themes emerged during the interviews, each individually occupying 12% of the thematic diversity. These themes are (1) unpreparedness of faculty, (2) understanding one's quality and value, and (3) lack of implementation. Diversity among students, and global phenomena versus student welfare were two of the minor themes that were mentioned during the interview process. Students mentioned the need of benefiting from the merging of different cultures through a system that encourages the exchange of knowledge and broadening of understanding. These students represented 4% of the data. 4% of the sample also expressed concern for the global phenomena versus student welfare.

Junior and seniors student at AUC and AUK emphasized certain common challenges regarding the implementation of the liberal arts education in the MENA region. Students came across these challenges through their interactions with some unprepared faculty members. Some students struggled in grasping the idea of the liberal arts since it was not implemented in some of their courses. For example, some classrooms did not include in their curriculum discussions or reflections that trigger critical thinking. Also, a serious flaw was student unawareness of the liberal arts education; freshmen students were neither familiarized nor, well-prepared with an understanding of the process, importance and meaning of the liberal arts. It is also worth mentioning that upperclassman students seek more diversity in course options that prepares them to be well-rounded individuals ready to implement in their career what they learned from the liberal arts. Students from both institutions expressed the idea of implementing the Western liberal arts education system in the Arab world. Most students viewed this form of implementation as an eye-opening experience that allowed them to know more about the Western world. Moreover, students noted that this also granted them both an edge to compete in the international market and a unique identity in the local market. Interviewed AUC and AUK students appreciated the concept of merging Arab world studies section in general requirements with the liberal arts education. The inclusion of Arab culture in this system gives (Arab) students an opportunity to explore their own culture and history. Meanwhile, a few students mentioned the frustration of learning more about other cultures and not having the chance to fully understand one's own culture first. According to the findings mentioned above, offering new higher education courses, hands-on real-life practices, cohesive understanding of the liberal arts ideology through students, and service learning courses will improve student learning outcome.

Conclusion

Based on the research, findings and data analysis of this study, a common result constantly appeared within both institutions. One of the central goals of a liberal arts education is to teach undergraduate students to go beyond the limits and explore various disciplines. They should have the motivation and capabilities to argue, debate and disagree (Chopp, Frost, & Weiss, 2013).

To conclude, to create a progressive educational system in a higher education institution, students seek opportunities for exposure and encouragement. The liberal arts education necessarily equips students to be academically successful. This particular study discusses the importance of the impact of the Western liberal arts

educational model on higher education within the transnational university settings. A comparison of two transnational universities was presented and thoroughly analyzed by interviewing undergraduate upperclassmen students. The main focus of the analysis was pedagogies of student learning outcome.

Future Research

Researchers for future studies can examine different ways of applying and implementing good practice in undergraduate education. They might take into consideration developing a self-assessment instrument for faculty members by applying each of the principles. Application of the seven principles on undergraduate students will enhance the academic development of the upperclassmen students and carry out studies of teaching practices and faculty discipline. For academic development to be successful, researchers must put theory to practice. I recommend consideration of the various suggestions offered by students during the interviews.

After prolonged research and studies, the importance of the liberal arts education system and its impact on the quality of education is quite palpable. However, it is crucial to understand, respect and consider the cultural differences between the east and the west by adapting the liberal arts model to the host culture. In addition to merging eastern and western ideologies in the educational system, it is important to introduce practical practices in the liberal arts system. As stated by Alayan & Rohde (2012), "Education is also viewed as an important socializing factor that influences the formation of individuals as enlightened state citizens who are capable of independent and critical thinking." If this is successfully accomplished, it will yield a great opportunity in the Middle East by enriching the quality of education and diversifying learning experience for Middle Eastern students, giving them the opportunity to compete internationally in the work place while producing well-rounded individuals. Also, incorporating real-life practices is important because it helps students go beyond mere theoretical learning. This will ultimately help bridge the gap between university life and the career phase.

Acknowledgement

I want to offer this accomplishment and success to Allah who lightened my path in continuing my education and with his limitless blessing in every phase of my life.

I would like to express my thanks to the Mansour family; mom and dad who both mentored my education and who raised me into believing in myself and my siblings who have always encouraged me to keep moving forward.

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I dedicate this paper to my beautiful babies who encouraged me with their existence of wanting to do. As said by Nelson Mandela, "Education is the most powerful weapon which you can use to change the world." I wish you both can change the world and make an impact in this society.

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Appendix 1

Interview Questions

1. What is liberal arts?
2. How did the experience of receiving the Liberal Arts education affect your decisions?
3. As a senior, do you see the implementation of the liberal arts education distinguishes you as an individual from those who don't study using the liberal arts system?
4. Given that under the liberal arts education you were assigned certain courses, did these types of courses broaden your intellectual horizon that helped inform your major courses?
5. Do you see liberal arts education as an important form of education or not? Elaborate? If yes or no, in your opinion is there any way we can strengthen the liberal arts education?
6. If no, what aspect of education is most important?
7. What are you planning to do upon graduation? Is that what you want to do?

Constructing the Conversational Roles of Studio Design Education Stakeholders in Times of Change

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Abstract
The architectural design studio learning environment is central to architecture design education. The architectural design studio 'signature pedagogy' has gradually shifted away from its conventional forms of engaging students since the turn of the millennium. The studio has transformed into a contemporary form of design learning and teaching based on several factors including reduced contact time between academics and students, change in studio spatial typologies and the hierarchy of academics supporting student engagement. These shifts have had a major impact on the ways in which students perceive the role of academics. Not only have the roles for academics altered, but also the autonomy of students has changed. The nature of interaction in design studios is still, however, primarily conversational. The aim of this paper is to establish and define the roles of the learners and teachers (tutors and unit coordinators), and to refine and extend existing theory of conversational interactions. A qualitative case study of a major Australian University school of design, brings the variations in roles of all the stakeholders to the forefront and enables academics to be aware of the contemporary challenges required in changed scenarios. This research also highlights what the future of design education requires from academics and the associated expectations from their students.

Keywords: signature pedagogy, architectural design studios, architecture design education, transformation, conversational roles, students' and teachers' perceptions

Introduction

Architectural design studios are spaces where learners and teachers interact and enable learning the design process. Undergraduate degree programs typically have their curriculum centered around the core subject of architecture design taught in design studios. The traditional studio model researched is the signature pedagogical form of learning and teaching, which has recently changed. This change is influenced by several contemporary factors in the studio's learning and teaching structure. This paper argues that there is a need to explore and understand the theory around transformed roles of learners and teachers, to effectively inform the pedagogy of contemporary design studios.

Literature review

Centrality of design studio in architectural education

In order to qualify as a professional architect, there are three critical components: accredited education; followed by an internship; and finalised with a professional registration exam. The process of this lifelong learning profession begins with architecture education (Glasser, 2000; Teymur, 2002). The architectural curriculum is constituted of three classes of educational work (Dinham & Stritter, 1986; Kurt, 2009):

•   fundamental courses on liberal arts;
•   professional and environmental courses; and
•   apprenticeship experiences that take place in the studio.

The architecture education curriculum is centered around the core subject 'architecture design.' The supremacy is verified by the design studio which is the mode to teach architecture design throughout the degree program (Glasser, 2000; Mewburn, 2011). According to Michael Oswald's study (Ostwald, Williams, Learning, & Council, 2008), the design studio in Australian schools of architecture occupies 38 percent of the educational curriculum. It is rated as an extremely important area of teaching by design academics (Ostwald et al., 2008). Despite this significant component, minimal research has been conducted to create the case for the challenges of contemporary studio teaching faced by tutors, students and unit coordinators [otherwise known as subject coordinators], and how they identify themselves within these roles (Belluigi, 2016). Anybody who is practicing or has studied architecture, is generally considered to be able to can teach design at any level (Musgrave & Price, 2010; Ochsner, 2000; Oh, Ishizaki, Gross, & Do, 2013; Powers, 2016; Salama, 2015).

Studio as a social learning construct

The students solve problem-based design activities with the help of their teachers in the studio settings (Ochsner, 2000; Salama, 2015). Studios are social learning constructs (Schon, 1987; Schön, 1984), where the students and tutors interact to discover design solutions, and observe and reflect on the solutions, in an iterative manner (Dutton, 1987; Sodersten, 1998; Webster, 2004). The problems of pedagogy at each level of the professional journey, from first to final year need to be

investigated, as the challenges of effectively teaching novice students, are different to teaching senior students (Dredge, 2012; Farivarsadri, 2001).

Current design higher education research focusses on general pedagogical issues that students and teachers face—but a deliberate attempt to expand understanding the roles that students and teachers play in the contemporary studio model, is not evident—especially the students' role. Therefore, the scope of this research focuses on the roles of the stakeholders within architectural design studio pedagogy.

Signature pedagogy

The studio widely represents the foundational means of teaching and education, in design schools. Such universal forms of learning and teaching, that are related with particular professions, have been researched by (Shulman, 2005), and are signified as "signature pedagogies" (p. 52). (Crowther, 2013) elaborates the notion of signature pedagogies in an architectural education context, as a type of learning design for the architecture profession.

Architectural design studio as the dominant environment of architectural education, is both a physical space and a mode of engagement (Lane et al., 2015). It integrates the physical space, experiential learning activities, problem-based tasks and assessment with the teacher/student relationship (Lane, Osborne, & Crowther, 2015). The studio pedagogy is therefore defined as a signature pedagogy; a form of pedagogical practice that is associated with the discipline and its profession (Crowther, 2013).

Transformation of the signature pedagogy to a contemporary model

Signature pedagogy (Shulman, 2005) for the design studio can be traced back to when the studio first started as a "Master Apprentice Model" (Mewburn, 2011). The students modeled the master's approach. After this, the model shifted to the École des Beaux Arts model in the early 19th-Century, where it was still master centered but transformed into a form of professional training (Powers, 2016).

The foundation for the institutionalisation of architectural design studio education emerged form the Bauhaus School, in the 1920's. This was a major shift, as architectural studio education became formally institutionalised (Powers, 2016). Since then, research on design studio pedagogy has focused on the signature styles (Ochsner, 2000; Powers, 2016; Salama, 2015; Schon, 1987; Schön, 1984, 1985). These models imply the theoretical underpinnings for studios in the past, where studios were physical spaces where students not only worked and received critique on their design projects, but also spent most of their time. The time spent with peers and teachers resulted in the learning of design by developing a strong sense of a social culture rooted with the physical interactions. The large amount of face-to-face time spent between the teacher and each student, served as the primal mode of teaching which resulted in design learning.

Table 1 Transformation of design studio's signature pedagogical model - from teacher centered to student centered (Dutton, 1987; Mewburn, 2011; Powers, 2016; Salama, 2015; Schon, 1987; Webster, 2004)

AUTHOR	MODEL/PROPOSED THEORY	TEACHING CONTEXT	TUTOR'S ROLE	STUDENT'S ROLE
Ecole de beaux arts (1800 – 1900's)	Master – Apprentice Model (master centered)	Master's practice	Master	Apprentice
Walter Gropius (1920's)	Bahaus Model	Formal school of architecture	Master	Student
Donald Schon (1983)	Theory of reflective practice (coach- student) (teacher centered)	University studio	Coach/ Demonstrator	Student
Thomas Dutton (1991)	Hidden Curriculum Critical pedagogy (student-centered)	University studio	Mediator/ Collaborator	Student
Helena Webster (2004)	Critically reflective pedagogy (student – centered)	University Studio	the entertainer the hegemonic overlord the liminal servant	Student
Ashraf Salama 2015	Studio model based on Transformative critical pedagogy (student – centered)	University studio	Professional Colleague	Student
Mathew N.Powers 2016	Self Regulated Design Learning (student – centered)	University studio	Designer of individual student experiences	Student takes responsibility of his/her own learning

Research to date focusses on theorising the role of the tutor, while they interact with their student as in the signature pedagogy. The student is assumed to be only a learner.
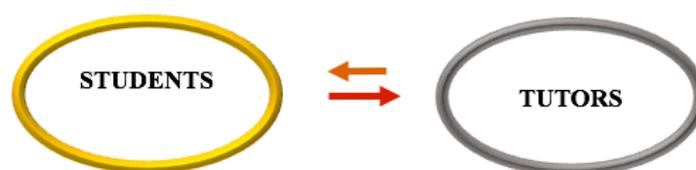

Figure 1 The simplified dual relationship between the teacher and student suggested in Signature pedagogical models

One of the contemporary studio model prevalent in Australasia (Ostwald et al., 2008) has transformed into a complex learning and teaching model than the traditional studio model. There is, however, a lack of research in response to the modern transformed model of studio, illustrated by contemporary challenges such as:

1.   reduced contact time between students and teachers (Tucker & Rollo, 2006);
2.   scarcity of dedicated studio spaces (Ostwald et al., 2008);
3.   introduction of online learning resources (Lane et al., 2015); and
4.   and the hierarchical form of the learning and teaching community in the studio i.e. the unit coordinators, tutors and students (Ostwald et al., 2008; Percy et al., 2008).

The contemporary studio model which sees unit coordinators, tutors and students interacting under these transformed conditions, lead us to explore the roles further.

Table 2 Transformation of the roles of teacher and student with transformation of signature pedagogical models – further adaptation from table 1

AUTHOR	MODEL/PROPOSED THEORY	TEACHING CONTEXT
Ecole De Beaux Arts (1800 – 1900's)	Master – Apprentice Model (master centered)	Master's practice
Walter Gropius (1920's)	Bauhaus Model (teacher centered)	Formal Institution of architecture
Donald Schon (1983)	Theory of reflective practice (coach- student) (teacher centered)	University studio
Thomas Dutton (1991)	Hidden Curriculum Critical pedagogy (student-centered)	University studio
Helena Webster (2004)	Critically reflective pedagogy (student – centered)	University Studio
Ashraf Salama 2015	Studio model based on Transformative critical pedagogy (student – centered)	University studio
Mathew N.Powers 2016	Self Regulated Design Learning Model (student – centered)	University studio

a) Role of students in existing models

The key contributors in the design studio, are the students. The design studio presents the students with a safe learning environment. It allows students to act as a design professional, without facing the consequences of their design, as they would in the real world (Chen & Heylighen, 2006). Contemporary higher education teaching

practices demand that the students are better understood by their teachers, who must devise ways to engage them effectively.

Teaching must be based on the understanding that 'one size doesn't fit all' (Bosman, Dredge, & Dedekorkut, 2010). This challenges design studio teachers to understand their students better, and to make design teaching more productive.

b) Role of tutors in existing models

In the Australian higher education context, a sessional academic tutor is hired on a casual basis. About 1,000 sessional academic staff are recruited to teach architecture design subjects each year, across Australasia (Ostwald et al., 2008) and little is known about how they teach and how they can improve their teaching practices. The sessional academic tutors are a diverse cohort of professionals (Kift, 2002; Marshall, 2012), ranging from postgraduate students to professional practicing architects.

They provide the students with formative and summative feedback through critiques, which range from private to public, i.e. from individual to group (Oh et al., 2013). These interactions occur in dyadic forms of communication. These include verbal and graphical modes of communication occurring simultaneously (Schön, 1984). The tutors facilitate design projects created by unit coordinators, critique on the design process, and impart crucial design vocabulary to students.

c) Role of coordinators in existing models

A unit coordinator designs the subject's curriculum, prepares and presents lectures, manages tutors, and moderates marking with tutors (Percy et al., 2008). They are often a practicing professional, as well as an academic (Pepper & Roberts, 2016). Unit coordinators often give lectures which are didactic in nature. Didactic forms of teaching support the transfer of knowledge from one person to a group of people.

Design knowledge is imparted through lectures that supplement the studio tutorials. In architectural design teaching, this knowledge imparted by the coordinator's lecture, is supplemented by architectural readings and design projects. There is a lack of research about the unit coordinator's role in this context.

The unit coordinators' role, captured using the perceptions from them, their students & tutors respectively will provide a more cohesive and strengthened view of how theoretical know-how about the roles can be made explicit for academics to deliver their roles efficiently.

The collaborative learning and teaching cycle of contemporary design studios

For contemporary architectural design pedagogy, the unit coordinator delivers didactic design lectures, and the tutor conducts the dyadic forms of design studio tutorials with the students as learners.

Therefore, the studio environment can be seen as a social learning community which involves two micro communities (Tait, 2002)—one based on the interaction between the tutors and the unit coordinators, and the other baced on the students and their respective teachers.
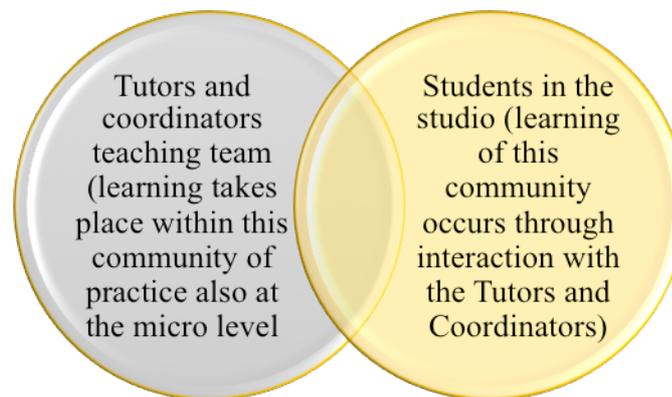

Figure 2 The Learning Community of Coordinators, tutors and students – diagram created by researcher to inform argument from Tait's Study (Tait, 2002)

Thus, the contemporary studio model, which is a dialogic/conversational form of learning and teaching, where unit cooordinators, tutors and students interact under transformed conditions of pedagogy. This leads us to explore these roles in-depth and to see the significance of the complexity that surrounds the delivery of these roles in architectural design education.

Theoretical perspective

This research project, as it develops in later phases, seeks to utilise Laurillard's (Laurillard, 2013) 'Conversational Framework,' as a model of learning and teaching. It is a theoretical framework proposed for effective academic learning and teaching in higher education. The conversational framework will be utilised in order to highlight the studio teaching environment and create a pedagogical model based on the interactions between the three stakeholders in the design studio.

According to Laurillard, (2013), the conversational framework describes the roles of the students and teachers briefly in a traditional framework of learning and teaching. It can be applicable to all academic learning situations and subject areas. In Laurillard's learning theory, the students must take responsibility for what they know and how it comes to be known. Thus, teaching can be seen as a form of a mediation of learning rather than an action on the students (Laurillard, 2013).

At the heart of Laurillard's (Laurillard, 2013) theory, lies the conversation where the learning partnership between the student teacher becomes more transparent and is similar to the dialogic nature of pedagogy in design studios.
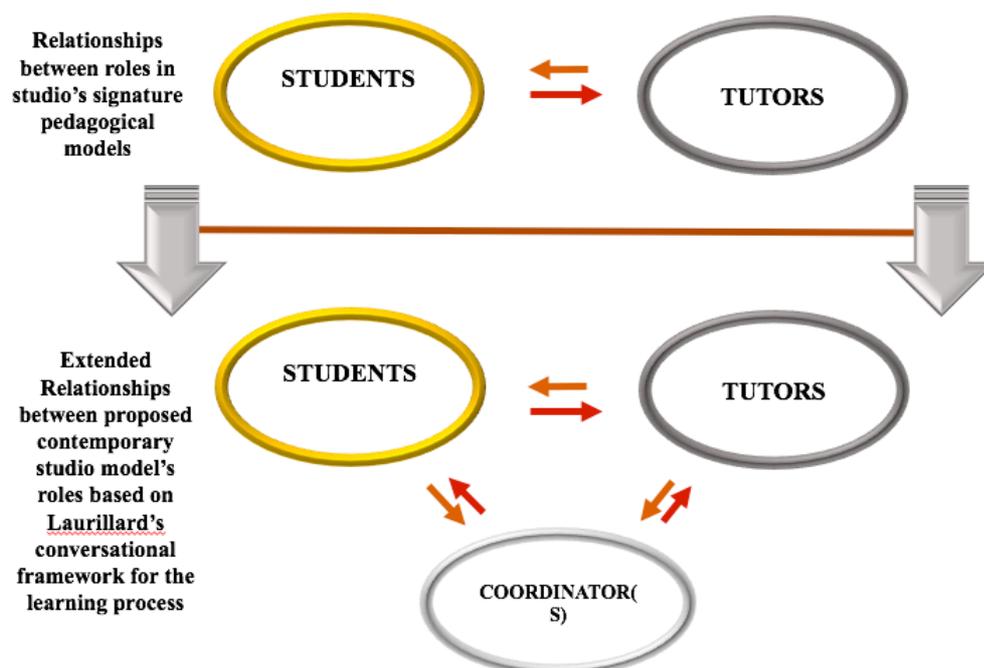
Figure 3 Transformation of the studio model from signature to the proposed contemporary model - incorporating the roles of the three members instead of 2

This research project aims to understand and illustrate a more complex structure; to adapt and extend Laurillard's (2013) theoretical perspective, that design learning at undergraduate level is mediated by the tutor in the design studio, and by the unit coordinator through their design lecture and online modes. Furthermore, the students play an active role in their design learning while interacting with the teachers.

Therefore, the framework will include these three members and their interactions. To create the extended framework, however, there is a need to understand the relative roles of each of these stakeholders in these learning settings, to each another.

This research problem frames the aims in the next section.

Research problem, objectives and questions

The aim of this research is to:
•   define the complexity of these roles in times of change;
•   understand the roles to inform effective learning and teaching practices in contemporary design studios; and
•   build the theory around the roles and their respective learning and teaching partnerships.

Therefore, the research questions that this paper answers are:
1.   What are the roles of the contemporary design studio stakeholders?
2.   How can these roles adapt to changes to aim at student success in this transformed scenario?

Methodology

To address the research questions this research implemented a case study methodology, employing qualitative case study research methods for data collection and analysis.

(R. Yin, 2009; R. K. Yin, 2013) offers an explanation for the use of case study research which suits the choice of this methodology in the design of this research. He describes that case study research shall be opted when: 1) the researcher asks 'how' and 'why' type questions, 2) the investigator has minimal or no control of the participants' actions and 3) the focus of the research is on a contemporary phenomenon in contrast to some historical event or phenomenon. In educational research, case study is utilised for mapping different qualitative ways, in which participants experience, understand and perceive social phenomena regarding learning and teaching around them (Merriam, 1998).

In this research, different ways in which the stakeholders perceive their respective roles in relevance to others in design studio learning and teaching, was investigated. The case study chosen for this research project is a well-established Architecture School's undergraduate program at a major university in Australia. The design school follows one of 4 contemporary studio models implemented in Australasian schools of Architecture (as shown in figure 4) and has a 4 years long architecture degree program followed by one year of masters. There are around 150 students in each undergraduate year and a team of six to ten tutors is employed with a single unit coordinator to conduct architecture design unit/subject for each respective year. The investigation of this case study and its implications may not be relevant to other forms of prevalent design studio models.
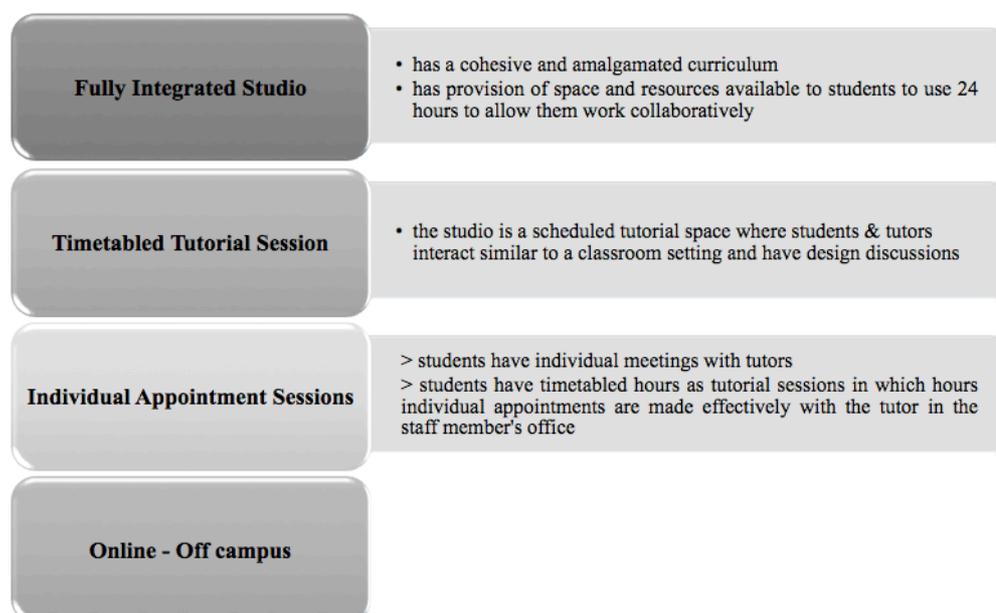

Figure 4 Various Studio Models Being Adopted in Australasian Schools of Architecture and the second one 'Time-tabled tutorial session' is the one relevant to the case study
(Created by researcher and adapted from (Ostwald et al., 2008))

Data was collected through face to face, open ended interviews from a purposive sample, representative of each stakeholder of the architecture design subject, from first till fourth year. The particular number and characteristics of participants for each stakeholder group from first, second, third and fourth year, for the purpose of data collection was as follows

- One unit coordinator who was teaching the second semester,
- Two tutors: one experienced tutor teaching for more than two years and 1 novice tutor that has up to or more than one year but less than three years of experience to see the difference of perceptions.
- Four students in their second semester of architecture design subject.

I was able to collect data from

- One unit coordinators,
- Two tutors from first and fourth year, and one tutor each from second and third year,
- Five students from first year, three from second year, one from third year, and three from fourth year.
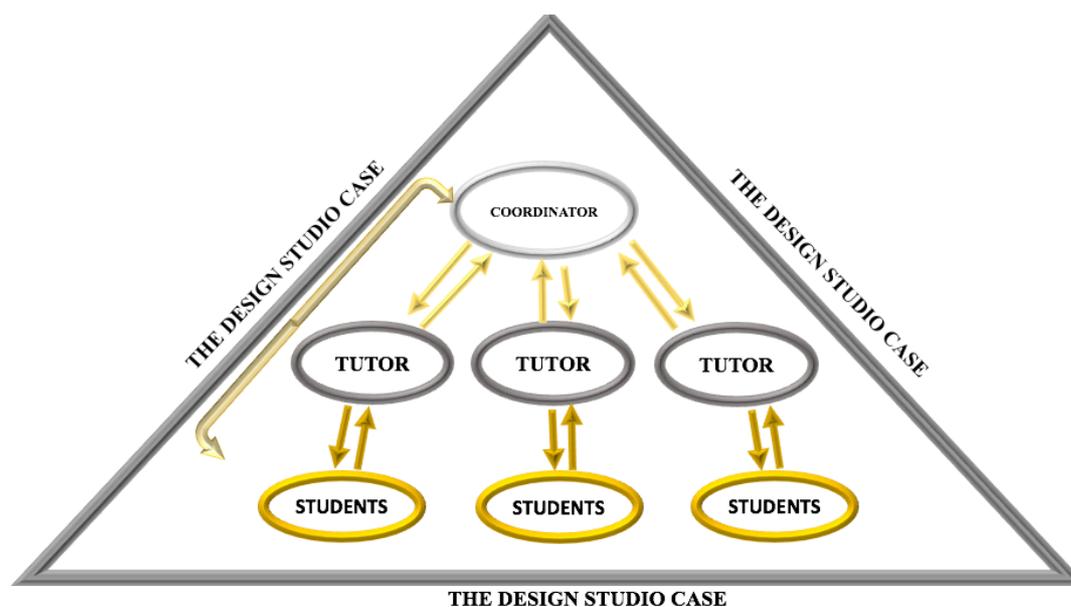
Figure 5 The undergrad design studio case - Hierarchy of the learning community within the QUT's case study

In the context of design lectures and studio tutorial learning and teaching settings. the interviews in this research, intended to capture the retrospective accounts of:students' perceptions of their experiences of their roles and the tutors' and unit-coordinators' roles.

Tutors' perceptions of their roles and their students' and unit-coordinators roles.
unit coordinators' perceptions of their roles and their students' and tutors' roles.

Analysis & findings

All the interviews were audio recorded and then transcribed. Each undergraduate year's members' data was collected and analysed using thematic analysis – to elaborate the nature of the roles each member plays within the design learning and teaching community relative to the other.

There were four data sets related to each undergraduate year from first till fourth year (including the unit coordinators, tutors and students for each respective year that were each treated as a separate data set). These data sets were then used for analysis to observe the repetitive patterns regarding the perceptions of roles in the design studio and lecture settings.

Thematic analysis can be used to analyse qualitative data. It is a process for analysing qualitative data that includes searching for recurring ideas (patterns) referred to as themes within a data set. It is a process that allows researchers to use diverse or varied information in a systematic way. This systematic information in turn develops and heightens their understanding and interpretation of observations about events, organisations, situations and people. Putting it in the words of (Jason & Glenwick, 2016, p. 32) '*people attribute meaning to a particular phenomena in interaction with those around them in context-specific settings.*'

The process of analysis as shown in the figure 6 was as follows:

Step 1: Coding Process

Each data set was subjected to initial coding. Then the initial coding was compared across data sets to be further processed through axial coding. The axial coding of the initial codes led to the creation of categories related to the roles. The roles revealed showed as responsibilities adapting to 3 phases of the design learning process. Each stakeholder described the roles relevant to 3 different stages within the design learning process and this led to the creation of two themes related to one another.

One on the phases of the design learning process related to the design project and the other related to the adaptation of the nature of these roles in relation to these learning phases.

Step 2: Axial coding and categorisation

The process of initial and axial coding revealed that the perceptions of roles emerged with a correlation to the learning and teaching phases. It also led to the finding that the three separate roles of the student, tutor and unit coordinator adapt along the learning and teaching journey – where the design learning process has three learning phases. The adaptations of the role along the design learning phases emerged as a pattern across the data sets.

Step 3: Emerging themes

Thus, two interrelated themes emerged from the data,

1. Design learning process:
This theme pertains to the learning process and its three phases within a design project:

➢ The first phase relates to the clarity of the unit/subject's structure, intent of project, curriculum, cohorts (number and nature of students and their prior assumed knowledge), responsibilities, learning and teaching objectives/goals, learning needs/challenges. This phase sets the foundation for the design process to unfold with clear expectations of the aims, structure and the learning and teaching partnership goals.

➢ The second phase relates to the development and iteration of design through collaborative efforts between students and teachers. This phase is successful if the learning and teaching partnership is built on clear learning goals. The students learn effectively by working on their design projects while being inspired by their teachers who enable the students find their individuality. The collaboration between learners and teachers has to be established on trust and honest feedback to build confidence among learners.

➢ The third phase relates to the transformation of thinking and self-efficacy of the students and academics. This is when the students consolidate the learning in the previous two phases and present their work to complete the design project's final goals.

2. Role construction:
The nature of the roles, as their identities and responsibilities constructed the theme on roles of the students, tutors and unit coordinators. These roles were seen as identities whose responsibilities and nature of role gets adapted to the three phases of the design learning process.
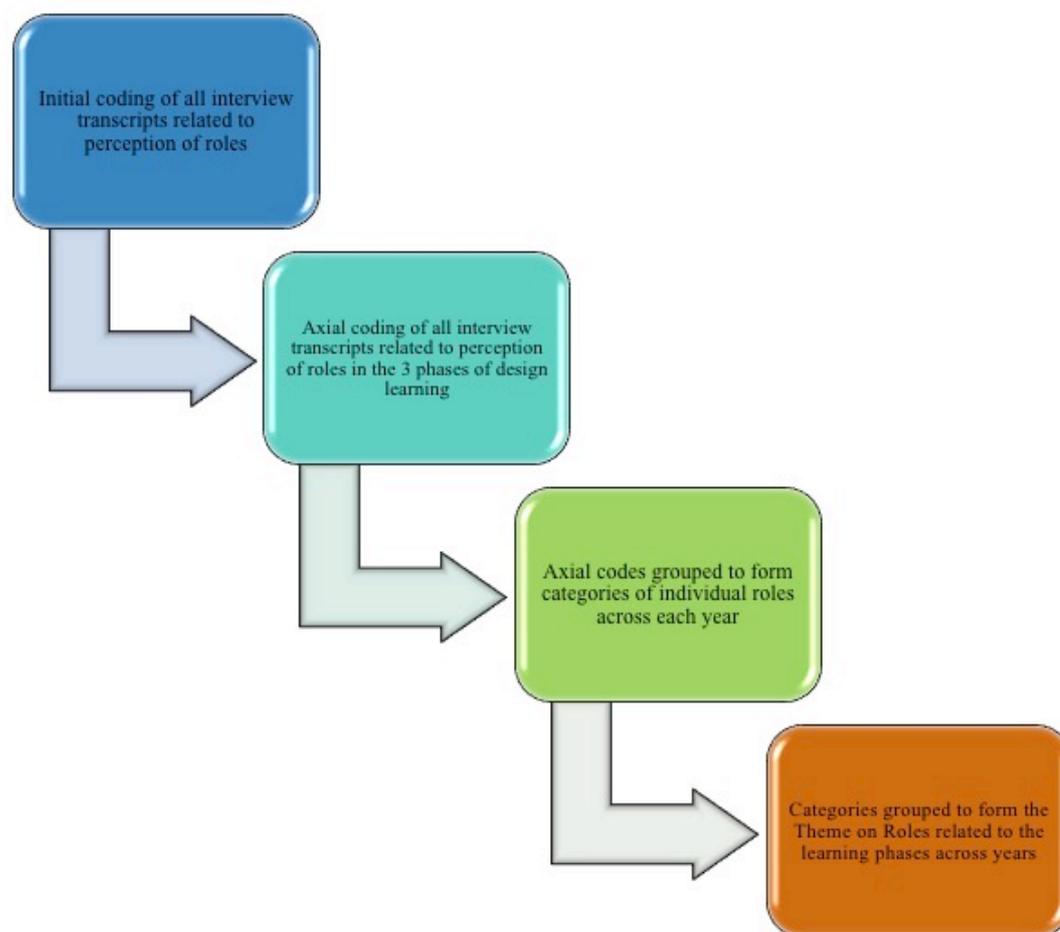
Figure 6 Process of thematic analysis

The roles as identities get adapted to these three learning phases. The correlation between the phases of the design learning process and the adaptation of the roles across the phases can be diagrammatically portrayed in figure 7.
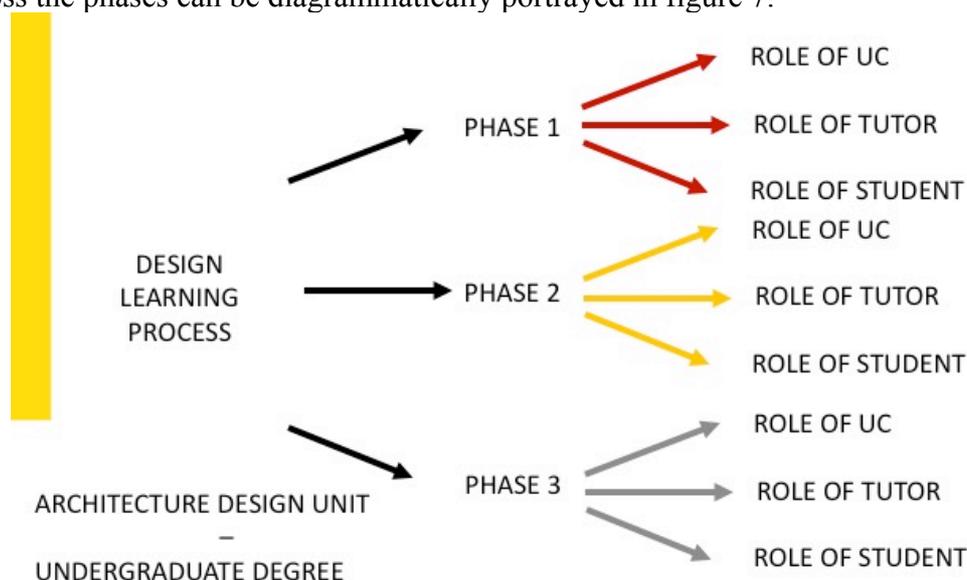

Figure 7 The correlation between the 3 phases of the design learning process and the adaptation of roles

Role construction theme

- **Transformed role of students**

In this research, the construction of the student's role has revealed that; in the first phase, the students must be aware of their responsibilities and the significance of their active involvement, for their own design exploration to be possible. Their role is to be willing to participate in these dialogic conversations which are modelled for them in the university and provide them a chance to model and build on the professional world's team working skills. With the university's structure to provide students the choice to attend or not attend classes, students have the option to use this autonomy to their benefit. They can do this by surrounding themselves with the appropriate opportunities, that will benefit their learning.

In the second design learning phase, the students' role is that of a dependent explorer who collaborates with their tutors, unit coordinators and peers in lectures and studio tutorials, to develop their designs by making informed decisions and refining their proposals by working on the intricate details of their design project. The student's role is to convey to the academics, their learning challenges to get maximum support. The students' role is not only constructed in relevance to their interaction with their unit coordinator and tutor, but also to their peers, where they share their ideas and collaborate to build on each other's knowledge through a sense of belonging.

In the final design learning phase, which involves: the completion of the project; its verbal and graphical presentation by students to an audience; and the assessment of it. The students' role is acknowledging the fears they have of sharing their ideas, by understanding that the critique of their project, is to help them refine those ideas—it is not a personal rejection of the student themselves. This phase reveals the student's role as one that grows, transforms and shifts as a result of the learning process. The student's role is to reflect on their learning and to use this shift in thinking and understanding of design, to their benefit in their later challenges in the profession.
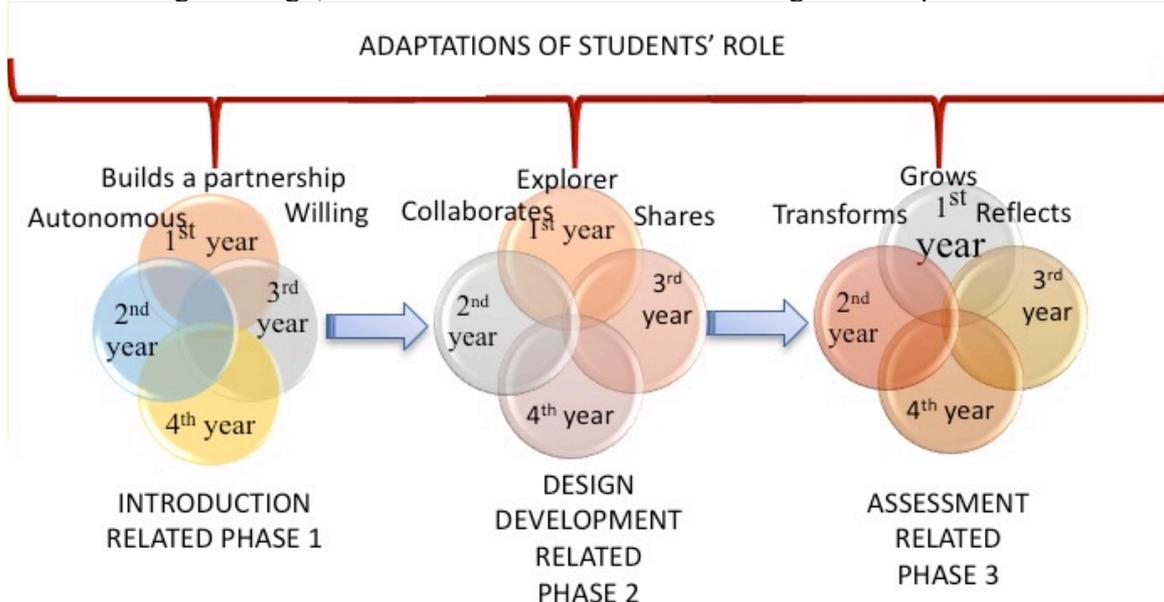

Figure 8 Correlation of the student's role to the design learning process Transformed role of tutors

The role of the tutors has revealed certain similarities with a few differences across year levels. The students consider the role of the tutor more important than the unit coordinator – as the tutor is engaged with the students for longer periods of time in studio tutorials. The tutor helps students complete their design project. A new perspective on this role is that of a life coach, who delivers a more holistic form of teaching for students to enable them cope learning scenarios independently due to reduced teaching time.

The role of the tutor in the first phase requires them to be clear of the learning objectives set by the unit coordinator, to give students a clear direction for their design projects. The tutor has to create a learning and teaching partnership with students – that makes the students aware of the importance of the studio dialogic sessions with their tutors and fellow peers.

In the second phase, the tutor's role is to build a collaborative relationship with their students based on trust and honest feedback. This provides the students the opportunity to see the architect's role being modelled in studio tutorials. The tutor can demonstrate both verbally and graphically to the students how to resolve design problems. The tutor's role is to encourage the students to expand their exploration of design solutions.

The tutor's role is efficiently delivered, if they are willing to be approachable, lesson plan ahead of time and are flexible to customise their feedback to students effectively and efficiently within the reduced time constraints – so that students feel heard, seen and above all were able to explore and resolve their design projects. The tutor's is also an active team member that supports their fellow tutors especially novice colleagues. The tutor must know what forms of knowledge the students receive in design lectures with the unit coordinator to build on the consistency of clarity of learning objectives.

The tutor's role in the third learning phase adapts to mentor the students to complete and present their design works confidently. Tutors enable the students to reflect on their own designs to do better next time. They enable the students to articulate the transformation of understanding about design thinking from the beginning to the end of the project. Tutors must reflect on the student's work as a measure of success of their teaching practice and be willing to improvise their practice based on the feedback from the unit coordinator, the students and their own observations to improve their design teaching skills for future.
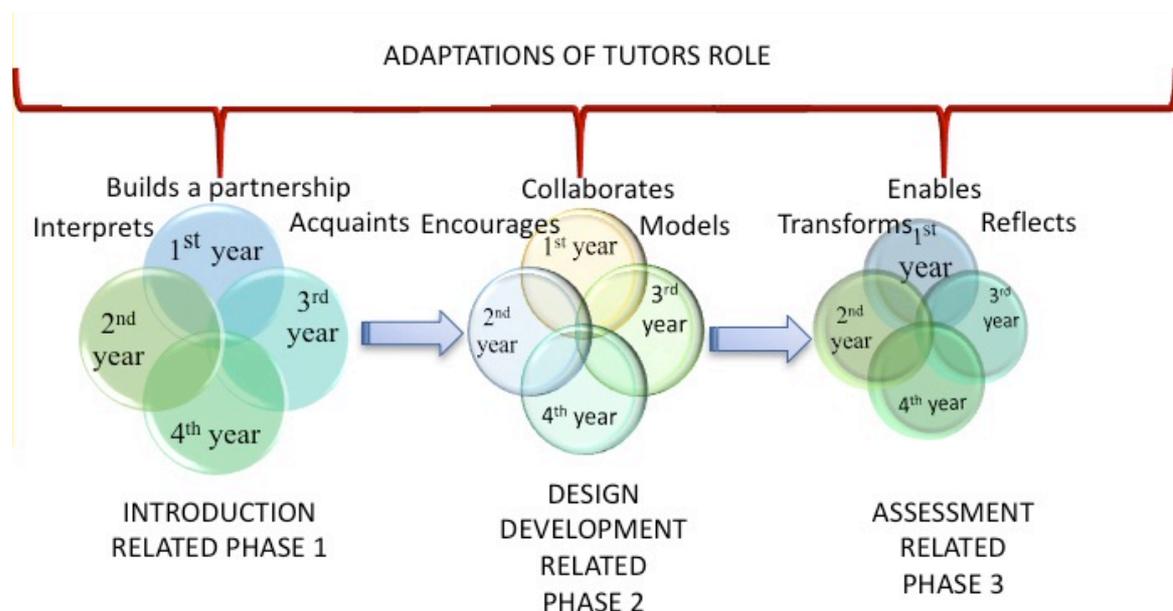
Figure 9 Correlation of the tutor's role to the design learning process

- **Transformed role of unit coordinators**

The role of the unit coordinator has revealed certain similarities with a few differences depending across the four years.

The unit coordinator, in the first phase of learning adapts the role of a leader and manager that creates the design project. The unit coordinator recruits the tutors team – empowers and trusts the students and tutors' team to build clarity and confidence among them, as they will all share and execute the learning objectives as a team. The unit coordinator has to set boundaries of responsibilities with the tutors and students to make them efficacious and clear about the intent of the unit. The unit coordinator has to create a structure for the subject which is easily apprehend-able by the students and tutors both. The unit coordinator must make an effort to know their learning audience and their progress in their design learning journey.

The unit coordinator's role adapts to a one who builds a teaching partnership with the tutors and a learning and teaching partnership with the students – by taking the students on a journey of relevance by sharing reflections of their own experiences as an architect or by choosing guest lecturers that inspire students on how they successfully resolved design problems. The unit coordinator's role is to provide ongoing support to students and to make sure the students see design lectures as a part of a two-way interaction process rather than passive receivers of knowledge. The unit coordinator supports their tutors team with the learning resources and flexibility to improvise learning tasks for their students' groups to maximize learning through collaboration instead of forced application of a rigid educational structure for the design subject.

In the third phase, the unit coordinator's role adapts to that of a moderator who draws an unbiased conclusion on the assessments of the tutors' grades of the students' work and is also responsible to maintain the quality of education. The unit coordinator reflects on their own teaching, managing and team's approach through the students

and tutors feedback.
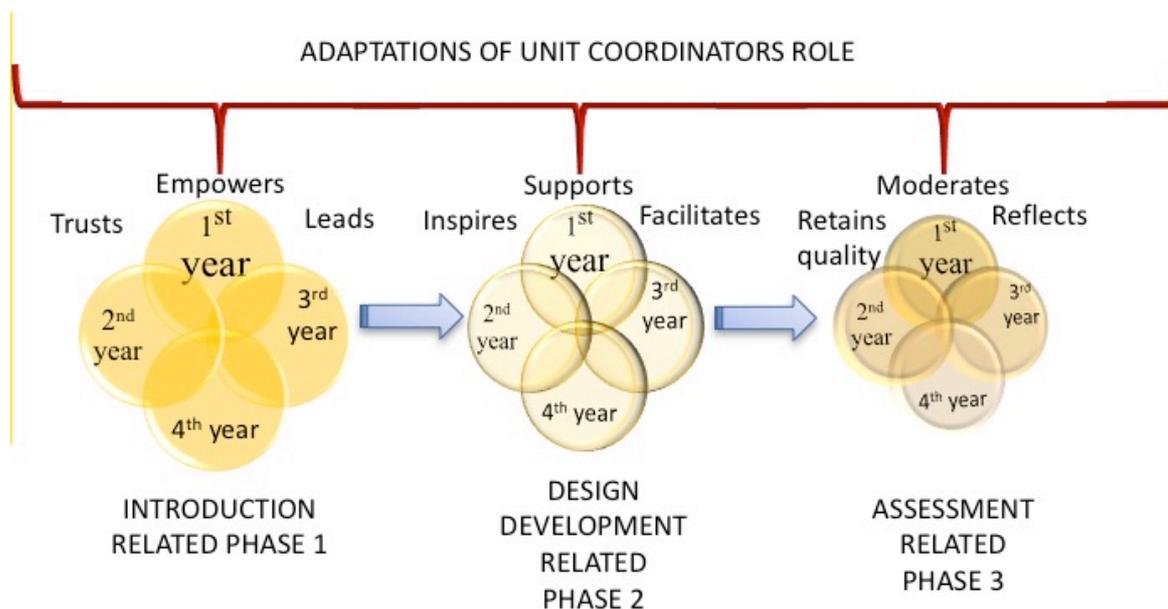
Figure 10 Correlation of the Unit Coordinator's role to the design learning process

Conclusion

This case study has highlighted two significant aspects of the pedagogy of the contemporary architectural design studio that do not align with the traditional signature pedagogy; the additional role of the tutor, as an interpreter between the unit coordinator and the student; and the changing identities of the roles at different stages of the design learning process. The simple model of master and apprentice, or teacher and student, is no longer valid in the large class and limited time context. The additional role of the tutor creates a much more complex series of interactions that changes the traditional roles of teacher and student.

Further to this, we can see that all stakeholders perceive a changing identity in their roles at different times during the learning process; at different times of the design project. Student's role changes from participant, to explorer, to reflector. Tutor's role change from director, to collaborator, to assessor and informer. Unit coordinator's role changes from leader, to supporter, to moderator and manager.

Implications for future

The research findings will provide a foundational ground to build on the extensive interactional relationships between these three stakeholders for the contemporary design studio pedagogical model.

The understanding of these three roles sheds light on the complexity of knowledge that surrounds the nature of the identities of these roles and the demands from each in the contemporary design studio learning and teaching settings and how these roles get adapted to the phases of the learning process and reveal their relevant morphology.

It also brings out the importance of understanding these roles to foster clarity, collaboration and positive transformation among students and academics for design education to be effective.

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Improving the Degree in Business Management: Proposal of a Major Based in the Virtual Firms Applied to University Model

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Abstract

Nowadays companies must adapt to an uncertain competitive environment where continuous innovation has become a crucial strategy. Higher Education Institutions (HEI) must also evolve to offer the professionals that organizations need. Bearing in mind the gap existing between graduates' profile and what companies demand, we undertook an educational innovation project in our Degree in Business Management (DBM), consisting of the implementation of the Virtual Firm Applied to University (VFAU). Through a four-year application experience, but with a limited scope and extracurricular nature, we could appreciate and assess the clear advantages that students acquire when taking part in this activity, both in their teamwork and management skills, and in their communication and entrepreneurship ones as well. To take full advantage of its potentialities, it is essential that the curricula of university degrees incorporate this methodology to their official contents, and not just use it as an auxiliary tool, without the necessary academic planning for its formal implementation. This paper presents a proposal for the implementation of VFAU in a major offered by the DBM.

Keywords: Virtual Firms Applied to University (VFAU), Higher Education Institutions (HEI), Degree in Business Management (DBM), professionally demanded skills, learning by doing

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Introduction

The Degree in Business Management (DBM), offered at the Faculty of Economy and Business of the University of the Basque Country (UPV/EHU, 2017a), stands out from the rest of degrees for a number of reasons: not only is it studied at a different building (Elcano Section, which is 200 years old), but it also focuses on Small and Medium Enterprises (SME), with great emphasis on exports and foreign languages, which are basic activities for this kind of firms (Bilbao-Goyoaga, 2015). We must also keep in mind that the Basque Country, where our University is located, has a long industrial and business tradition, where companies have undergone significant restructuring and a large percentage of its entrepreneurial ecosystem (99.85%) is made up of SMEs. (Ministerio de Economía, Industria y Competitividad, 2017).

Moreover, the Degree offers three different majors in the 4th year, combined with the completion of a 450-hour mandatory internship. However, in most internship experiences, students feel that they are often assigned tasks involving poor responsibility and no decision- making skills.

On the other hand, we must take into account that the Basque Country is the Spanish region with the highest percentage of persons with a degree in Higher Education (63.7%), a fact that forces us to look for solutions for such a large number of graduates.

Among the techniques based on *learning by doing*, the Virtual Firm (VF), also named Virtual Enterprise (VE) or Practice Firm (PF), is certainly one of the most effective methods for students to learn about company operation and to develop entrepreneurial skills (Gualdi, 2016). It aims at enabling students to acquire specific practical skills that can be learnable but not teachable (Weinert, 2001), hence overcoming the limits of traditional teaching based on frontal lectures (Gualdi and Melagranati, 2015; Kiraly, 2014).

The VF methodology consists of a simulated company that is run from a real office by a group of students assisted by tutors (Bianchi and Tampieri, 2013). There is no actual transfer of goods or money, but all the rest of transactions such as orders, invoices, financial records, etc. take place (Tampieri, 2009a). Each student works in an office with other colleagues and performs all company management operations by enabling the virtual exchange of goods and services with other Virtual Firms in national and international networks.

The methodology of VF helps students integrate all the business areas, involving them in all the phases of running a company, from the constitution of the company until its winding up. This enables participants to understand the relationships, dynamics and its operating modes in order to take the necessary decisions for daily management, as well as to verify the specific results obtained in its scope and the more general ones connected to the whole enterprise (Tampieri and Gualdi, 2017).

Therefore, students acquire experience in a real working environment by simulating a real enterprise. The student is bound to implement all the theoretical

knowledge learnt in class by applying it to the management of a company (Tampieri, 2009b).

Under an Educational Innovation Project[1] financed by the University of the Basque Country during the academic years 2014-2015 and 2015-2016, our research group could see the advantages of the virtual firm through the implementation of a pilot group (Gómez et al., 2017).

Due to the success obtained during the last three academic years, the Faculty decided to implement the Virtual Firm Methodology in the Degree in Business Management, in order to provide a number of our students with a percentage of the time devoted to intern practice. This way, each year students create and manage their own firm in the classroom, as an experiment that has supplied this research team with valuable tools to assess first-hand students' development of cross-curricular skills.

All of the above has led us to weigh up the possibility of consolidating Virtual Firms in our Faculty. The purpose of this paper is the proposal of a new major or specialty in the 4th year of the DBM taught at the Faculty of Economy and Business of the University of the Basque Country (UPV/EHU), consisting of a number of courses focused on entrepreneurial skills, for which the VF would be a valuable tool. In other words, transforming the experience obtained with the experimental implementation of the Virtual Firms Applied to University (VFAU) in our Faculty into curricular content in the Degree.

Background

This section reviews the implementation process of the VFAU methodology in DBM. The essential and differentiating features of the DBM are described; data on the evolution of enrolment along the last five years are provided; the process of implementation of the VFAU methodology is detailed; and finally, the professional skills of graduates in Economy and Business are specified. The primary aim of this background is to contextualize the activities that have been carried out, and to provide evidence of the need to tackle a more ambitious approach in the DBM.

The Degree in Business Management: graduation profile and main characteristics of the curriculum

The DBM at the UPV/EHU was launched in 2010 with the goal of enabling future graduates to perform the duties related to management at any level of a company or organization, as well as of working out reports and providing advice in the areas of Economy, Taxes, Accounting, Human Resources, etc., oriented mainly to SMEs. In addition, they will also be skilled in entrepreneurship and foreign trade (UPV/EHU, 2010; 2014).

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[1] Name of the Project: Design, implementation and assessment of Virtual Firm Methodology through active and autonomous learning systems for the acquisition of professional and entrepreneurial skills in cooperative and dynamic settings (UPV/EHU, 2017b).

Moreover, the DBM contains a practical component, which consists of doing an obligatory internship at a company for all future graduates.

In addition to all the above, graduates can choose among three specialties to complete their training, according to their interests:

- Major in International Trade and Marketing
- Major in Accounting and Auditing
- Major in SME Management

Therefore, 4th year students must enroll in 30 elective credits, choosing one of the abovementioned majors or specialties. They must also complete a 450-hour external internship (18 credits) and the Degree Final Project (12 credits), both of which add up the remaining 30 mandatory credits. In these last two subjects, students will be able to apply the theoretical knowledge and the skills acquired in the Degree (UPV/EHU, 2017c).

Main threats for the DBM
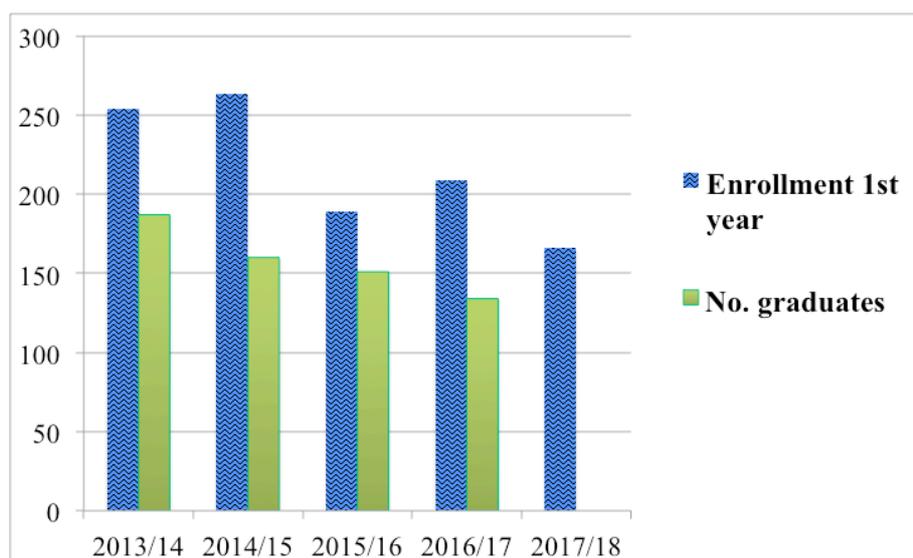
Figure 1. Evolution in the number of freshmen and graduates in DBM
Source: Authors' compilation based on Faculty data

The chart above shows a downward trend in both the number of freshmen and graduates, which could partially be explained by the evolution of the population pyramid due to the low birth rates in our country. However, that seems not to be the only reason for the decreasing figures.

According to the Ministry of Education, Culture and Sport (MECD, 2017), every year more and more students decide to enroll in Vocational Training instead of University Degrees. In particular, in the Basque Country, students of non-university education have increased by 10% in the last ten years, and more specifically, the number of Vocational Training students increased by 5.1% in 2016/2017 academic year (MECD, 2017). This evolution is evidenced in the following chart:

	publ *	prib/priv *	guzt/tot *
2011/2012	9.564	8.125	17.689
2012/2013	10.458	8.558	19.016
2013/2014	11.102	8.855	19.957
2014/2015	11.578	9.036	20.614
2015/2016	10.947	8.776	19.723
2016/2017	11.955	9.547	21.502

Figure 2. Advanced Vocational Education students in the Autonomous
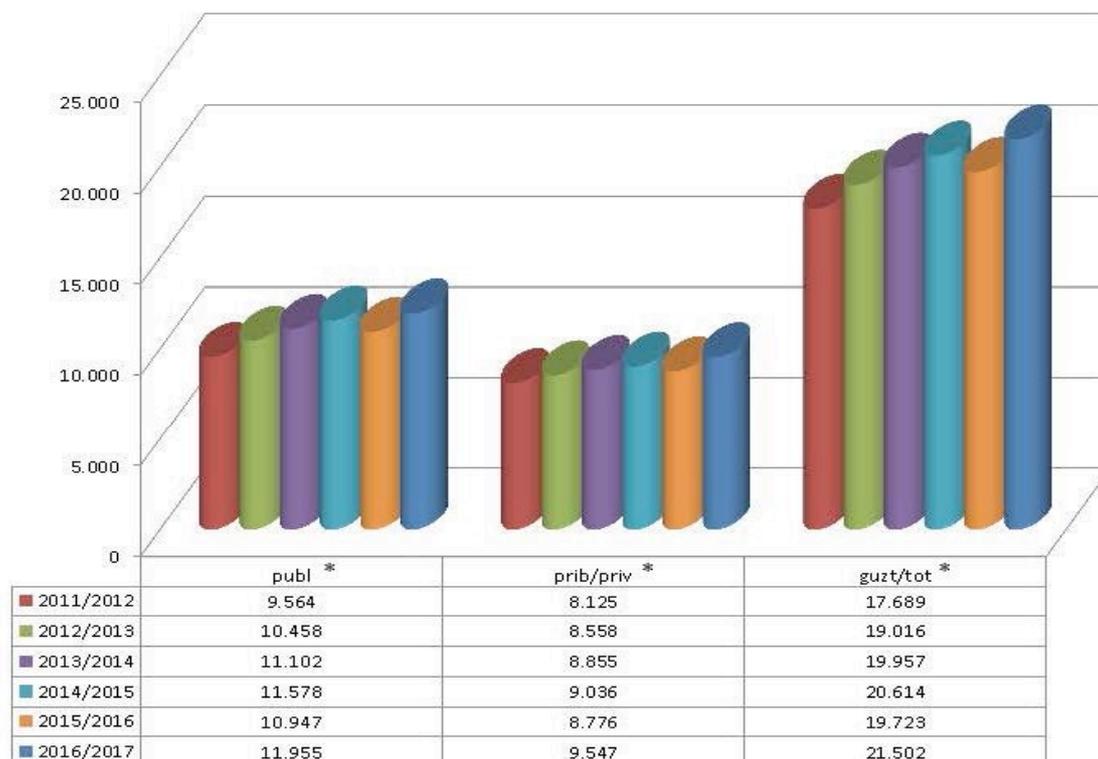Community of the Basque Country
Source: Basque Government, 2017 (Gobierno Vasco, 2017)

In addition, in the Basque Country, besides our public University (UPV/EHU), there are three private universities, which offer 16 other degrees in the area of Economy and Business, some of them highly- regarded degrees similar to our DBM.

Therefore, there is evidence of a plentiful university education offer in the area of Business Management, both at the UPV/EHU and at private institutions. In the medium and long-term, this highly competitive environment leads to the need for an adequate positioning and differentiation from other degrees, as well as to the enrolment of a steady number of students if these universities wish to maintain the range of degrees they offer.

On the other hand, the chart below shows the enrolment figures for academic years 2014/2015 to 2017/2018 in the three majors offered in the DBM. These data have been broken down for each of the specialties offered to 4th year DBM students.
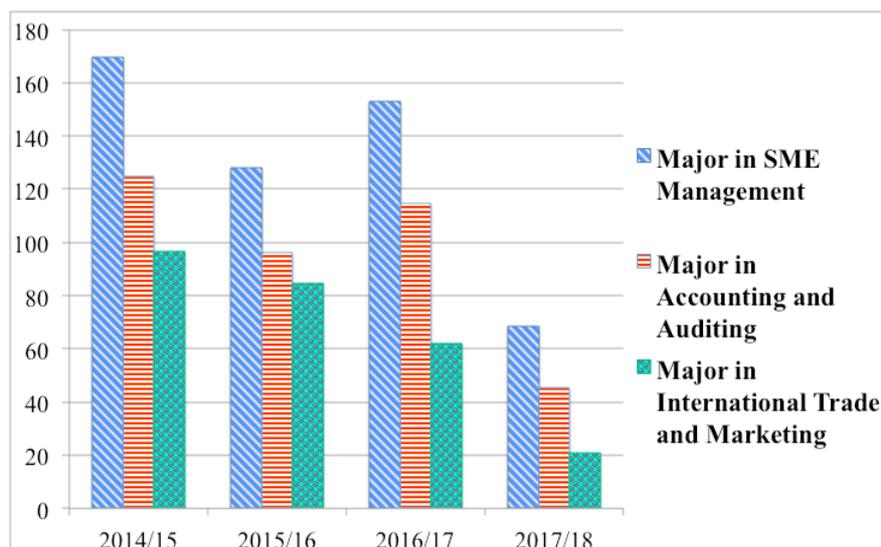
Figure 3. Evolution of enrolment in 4th year majors (DBM)
Source: Authors' compilation from UPV/EHU public information

If we focus on the evolution of average students enrolled in each of the specialties, we will see a downward trend, steeper in the current academic year, and still more worrying in the major in International Trade and Marketing, as shown in the chart above. This trend, together with the strong competition in nearby institutions, and the need to tailor the curricula to the training requirements detected is one of the reasons why this research team has considered the aims of the present study.

With reference to labor integration of graduates in DBM, we would like to highlight the following findings of a survey performed by the Basque Service of Employment (Lanbide) to 135 graduates of the 2013-year promotion (Lanbide, 2016a; 2016b):

- The total unemployment rate was 16% in general and 14% for women.
- Data about the quality of employment are not favorable: only 67% consider their job is quite related or very related to the degree they studied.
- Only 68% of jobs are open-ended contracts.

The abovementioned data ultimately point out the need to introduce amendments in the DBM, to foster the employability of graduates in the current labor context. Thus, the UPV/EHU cannot fall behind and must adapt to the new requirements and demands of the business world.

It is in this context of change and adaptation to the current environment that the authors would like to present the proposal resulting from this study: the creation of a new major related to VFAU in the DBM.

The application of VFAU methodology in the DBM

VFAU is the result of an Educational Innovation Project (PIE) aiming to provide students with the skills demanded professionally, which are difficult to develop in

the conventional classroom. It entails an adaptation of the VF framework to the particular needs of our business graduate students.

Students participating in the VFAU Project leave the conventional classroom to enter a company created and run by them in an international market. Under the motto "*learning by doing, learning by working*" this teaching tool rests on two methodological cornerstones: cooperative learning, and learning based on problems or projects (Lázaro, et al., 2016). Both of them supply the four vital elements of Virtual Firm methodology: strategic management, cross-curricular and generic skills development, international focus and prioritising training over results.
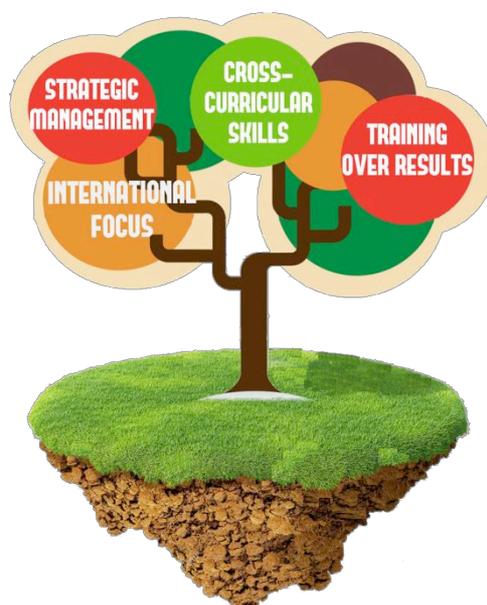
Figure 4: Methodological basis
Source: Lázaro et al. (2016)

Although the company is organized in different areas (Strategic Management, Financial Department, Administration Department and Commercial Management), the students must work jointly to achieve their business goals, which are interrelated. Thus, they can only reach these goals if the rest achieve theirs. Therefore, they are aware of the influence of their decisions in the whole company (positive interdependence and critical thinking) and they understand the importance of coordination, communication and cooperation (positive interaction).

The Coordinator of the activity (as the manager of the company) takes a less active role, acting as a guide and support for students, changing from a leading actor role to becoming a partner of the students during training activities.

On the other hand, the lecturers (as the Board of Directors) represent an element of control to the learning process, being periodically reported to by students and assessing students' learning outcomes during the activity, as well as offering them feedback and challenges in every meeting, not acting as teachers, but providing the program with further doses of reality. Students participating in VFAU must

immediately forget about finding the right answer to problems and focus on facing the real business contingencies (Unstructured Problems) that continuously arise in the company, being aware that there is usually no systematic or linear process to do it (Non-Established Solutions). Therefore, they must define, apply and evaluate plans to solve them. The Coordinator advises the students, but also provides them with the freedom to make mistakes and encourages them to do so. This way, they will lose their fear of failure and develop their critical ability as well as divergent thinking (Gómez et al., 2017).

The benefits they acquire from the methodology, both professional and personal, turn into those learning outcomes, in line with the strategic objectives of Europe 2020, which help develop the skills sought get closer to employability, as they add the necessary abilities to progress in life and professional contexts.

The professional skills of Economists

In this changing environment, featured by an intense competition in the offer of degrees related to Economy and Business, and by an evolution towards innovative learning and teaching methodologies, it has been deemed appropriate to present not only our analysis, but also the point of view and the needs of companies offering labour opportunities to university graduates.

The main conclusions extracted from the report recently published by the Basque Professional Association of Economists (Periáñez et al., 2017) indicate that "*the most demanded profile will be that of a person with a multidisciplinary vision on problem-solving, a good team-player who can express fluently both written and orally in several languages, and with a positive and optimistic attitude. A person with ethical principles and integrity, a high level of commitment, responsibility and maturity*".

At this point, we would like to mention the cross-curricular competencies of the DBM (UPV/EHU, 2017b), which evidence the total adequacy of the degree to the skills listed above:

- To be able to express both orally and in writing, fluently, correctly and using reasoning and critical abilities in matters related to business activities
- To integrate ICTs and foreign languages in the performance of their professional activity
- To be aware that professional practice must be based on solid ethical principles, commitment and responsibility

It is worth mentioning that for several years, Elcano Section has been working on different projects and developing initiatives aligned with the three suggestions indicated above. The present study is an example of our philosophy aimed at bridging the gap between university and businesses.

Proposal for the integration of VFAU model in the syllabus of the DBM

As previously explained, we deem it convenient to carry out a review of the current syllabus with the aim of responding to students' needs, and at the same

time, of going forward in the development of contents and teaching methodologies that will serve the purpose of enlarging the acquisition of the competencies and skills they need for their professional development. More specifically, the purpose of this paper is to revise and update the offer of elective subjects offered to our students in the 4th year, so that they can shape their curriculum in a more flexible way.

So far, our experience implementing the VFAU methodology has mainly consisted of offering the students the possibility of joining a team in order to develop all the practical activities related to the creation of a company and its daily management (purchases, sales, administration, etc.). It has been an experience where students were not awarded any ECTS credits for elective courses, but for the mandatory internship hours instead.

The University grants students a formal acknowledgment through the validation of the time they participate in VFAU, but this seems insufficient, considering the vast amount of multidisciplinary work they do, the type of skills they develop and the time they devote to all the activities, both inside and outside the classroom. In the same way, the work carried out by the teaching staff collaborating in the implementation of the VFAU does not either have a formal acknowledgment in the teaching assignment comparable to that of the official subjects in the curriculum. Hence, it is difficult to have a teaching staff large enough to extend this methodology to a more significant number of students, degrees and university centers.

On the other hand, in order to integrate this model within the formal structure of the degree curriculum, it is necessary to adapt all the activities (individual and group work, face-to-face and non-face-to-face tasks, monitoring and assessment systems, etc.) to the Teaching Guide.

These reflections had led us to find out the need to create a major in the fourth year, in which, in addition to the central activity that gives meaning to this training model, VFAU, a series of subjects that will respond to the aforementioned problems are taught. That way, VFAU itself will have to fulfill all the requirements to be considered as another subject within the curriculum, with its allocation of credits and teaching staff, Teaching Guide, assessment system, etc.

According to university regulations, each academic year of the DBM consists of 60 ECTS credits. The credits of the fourth year are distributed as follows:

- Elective subjects: 30 credits
- Degree Final Project: 12 credits
- Compulsory internships in a company: 18 credits

The new major proposed as a new offer for fourth-year students will be called Company Creation and Management (CCM). It will consist of a block of contents that will be offered, like the other existing specialties, to a limited number of students who will be able to choose it to complete their degree. For this specific major, it is proposed that three groups be offered (one per language: Spanish,

Basque, English) with ten students per group.

The academic content of this new major will consist of 42 ECTS credits distributed in this way:

- 30 credits for elective subjects
- 12 credits for the Degree Final Project

Taking into account the type of skills worked in VFAU, the business management activities that are carried out, the need to replicate the actual operation of a company in the classroom, the intended learning outcomes, and the desired profile from both the academic and the professional point of view, we propose the following list of contents that should be taught in the elective subjects of this major, in order to facilitate, expand and complete the practical learning that the students will receive in VFAU:

- 12 credits for the practical activity of VFAU
- 18 credits for training content related to:
o Entrepreneurship
o Advanced management tools and procedures (ICT, ERPs, Strategic Planning, Marketing, data analysis, etc.)
o Planning, financial and accounting management of the company (Finance, Accounting, specific software, etc.)
o Administration and commercial running of the firm (Human Resources, Taxation, purchases, sales, customer service, etc.)
o Management of external communication (English, social networks, online advertising, etc.)

The proposed curriculum intends to facilitate, expand and complete the practical learning that the students will receive in VFAU. Regarding the teaching schedule and its programming within the semester, there should be flexibility in the timing of formal teaching and the practice of VFAU, since it is possible to find advantages and limitations in whatever approach is taken into consideration in this regard.

Likewise, it is considered appropriate to link the Degree Final Project (DFP) with this new major, since it is meant to take advantage of the synergies between these two learning tools. The content and orientation of the DFP in this major will refer, deepen or develop a project to create a company or professional activity in the future, being useful to improve the performance, skills, and competencies referred to in the curriculum.

In this sense, we propose maintaining and respecting the contents, regulations, and criteria that regulate the development, enrollment and defense of the DFP for the students that attend this major. However, it would be necessary to make some adjustments in the tutor assignment procedure, since we consider that the work these students will do should be supervised by lecturers directly or indirectly linked to the VFAU model.

With the application of this proposal, VFAU would continue having a major in

the curriculum and several specific subjects that will focus on the fundamental aspects of the theoretical and practical contents of what the creation and management of a company entails.

The practical activity of VFAU will imply 12 teaching credits for students, which means that it will no longer be validated, as it is now, by the equivalent compulsory internship hours. That is, in this new model, students must fully credit the 18 credits assigned in the curriculum to internship, i.e., the practical work carried out in VFAU develops from being a (partially) 'substitute' activity to a 'complementary' activity, an approach that seems more appropriate to us.

Finally, as for the teachers who participate in the new major, their acknowledgement will no longer come from tutoring internships in companies, whose weight and importance in the teaching assignment is minimal, but by teaching credits with the same weight and value as the rest of subjects taught in the degree. With this new situation, we consider that it will be easier to get a more significant base of teaching staff interested in participating and collaborating in this training model.

To conclude, we believe that betting for this training tool, VFAU, leads us to the need to ensure that it will have a stable and broad presence within the curriculum. This will be possible by overcoming the current limitations and arriving at a model in which it is possible to integrate its contents, resources, activities, and approaches into the essential elements of any curriculum: the subjects.

Moreover, we believe that only this way will it be possible to set up a Company Creation and Management (CCM) major in the curriculum of the DBM. Besides, it will also be easier to extend this type of teaching to other degrees of the Faculty and, why not, to other Faculties and Schools where it is possible to apply it for the improvement of the competencies and skills present in the graduation profiles of their respective students.

Conclusions and limitations

The purpose of this study was twofold. On the one hand, we have concluded the relevance of Virtual Firms to foster generic and specific managerial skills. As has been proven by previous works carried out by other researchers (Bianchi et al., 2015; Gómez et al., 2017) and by the experience carried out in our center (Lázaro et al., 2016), students participating in this innovative methodology obtain substantial progress in the achievement of this type of skills, values and attitudes compared to other students who do not benefit from this experience.

On the other hand, we seek to transform the experience obtained during the Educational Innovation Project into curricular content in the Degree, proposing a new major at the DBM taught at the Faculty of Economy and Business of the UPV/EHU. It consists of a number of elective courses focused on entrepreneurship skills for which Virtual Firms Applied to University would be a valuable asset. This study contributes to theory and practice of educational approaches adopted by Higher Education Institutions with a focus to *learning by doing* of entrepreneurial competencies and to a better understanding of

knowledge about the management of VF implemented at a university level for didactical purposes.

We can state that, due to the abovementioned key features defining the VFAU methodology (Lázaro et al., 2016), participants obtain benefits in terms of learning outcomes that help develop those soft skills that prepare them to access the labor market in better conditions.

We must point out that this methodology, as stated in this paper, offers students the opportunity to carry out tasks that go beyond the mere development of processes and administrative procedures, focusing particularly on decision-making. This way, they obtain a graduation profile more clearly and deeply aligned with the needs and demands expressed by employers.

As VFAU methodology aims at reducing the gap between the profile of graduates offered by universities and the demands from the business world, this study further contributes to build a model that integrates academic contents oriented to the professional world. This new major will achieve its completeness and exploit the synergies offered with the writing and defense of the Degree Final Project every student must fulfill, but in this case with a content linked to enhancing the entrepreneurial learning outcomes acquired in the VF experience.

Our Faculty is located in an environment that has experienced significant changes in recent years, among which a growing offer of degrees in the field of Economy and Business stands out, together with the progressive incorporation of approaches and practical contents in the curricula of the degrees offered. All of this, together with the decreasing tendency experienced in the number of students enrolled in the different degrees, as well as the increase in enrollment in Vocational Training, makes it necessary to define our degree with differentiating features.

In addition, taking into account we now belong to a new Faculty where the DBM has been integrated into the academic offer, and bearing in mind a context like the one presented in the previous paragraph, it is unavoidable to advance in a more explicit positioning within the map of degrees offered. That is, we must orient ourselves towards greater differentiation, with highly innovative and practical components meeting this way the educational requirements of the companies in the Basque Country. Given the characteristics of Elcano Section, the center where the DBM is taught, the profile of its teaching staff and the content of the current curriculum, we consider it appropriate and necessary to expand on these dimensions as a basis for a consolidation of the degree in the medium and long-term.

The main limitation is of an administrative nature, since it entails introducing changes in the annual reports of the degrees. These modifications affect the Degree Definition Report in important elements such as the entry profile, the cross-curricular competencies, the curriculum, the offer of subjects and majors, multilingualism, internships in companies, the regulations for DFP, etc., as well as the progressive incorporation of innovative teaching and learning methodologies, with a more significant presence of ICTs throughout the training

period.

Another limitation can come from the difficulty in the allocation of academic resources, because there are many different areas and departments involved. Also, it would be relevant to consider that frictions and conflicts may take place among the teaching staff in charge of lecturing at the new major in Company Creation and Management, and also when adjusting the procedures for assigning a tutor for the DFP and the members of the examining panels.

Taking a chance on this training tool, the VFAU methodology, leads us to the need to ensure a steady and broad presence within the curriculum. At the same time, we must produce a final model that enables the integration of contents, resources, activities and approaches into academic subjects.

Moreover, we believe that this is the only possible way to introduce the model in the curriculum of DBM. At the same time, it will also be easier to extend it to other degrees of the Faculty of Economy and Business and, even to other Faculties where it can be applied for the improvement of the graduation profiles of their respective students. All these ideas constitute relevant research lines to be developed in the future.

Acknowledgements

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Play of Preschool Children as an Indicator of Readiness for Enrolment in Elementary School

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Abstract
The preschool age is a period of play. Children spend most of the day playing and play is a source of precious opportunities for their development. An important milestone in the life of the child is enrolment in elementary school and preparation for this important period. Since 2017, the last year of preschool education has been compulsory in the Czech Republic. This places a greater emphasis on children's readiness for compulsory education and teachers' diagnostic skills. Teachers should not forget that children behave naturally during play. The objective of the study was therefore to describe the current play of preschool children not only as children's need and naturalness, but also as a means of assessment of children's readiness for compulsory education. The main method was a video-study of play of children aged 5 to 7 years in mainstream kindergartens in Olomouc. A qualitative research design was used. The paper was supported by the following project: 'Play as a means of preparation of the child for compulsory education' IGA_PdF_2018_017.

Keywords: Preschool child, child's play, educational diagnostics, readiness for elementary school

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Introduction

Play is the dominant activity of children at preschool age and provides space for their all-round development. Play offers inexhaustible opportunities and is a source of new stimuli, interactions and social contacts. Children's play reflects the level of their development in all areas; a significant positive aspect of play is the fact that children are relaxed and spontaneous. Children's play provides teachers with great opportunities and space to use children's spontaneity and natural needs in routine activities in kindergarten. Analysis of spontaneous play should be part of educational diagnostics. It is a valuable source of information about child development and is a suitable complement to usual methods and procedures of educational diagnostics in kindergarten.

1. Theoretical definition

1.1 Play of preschool children

Play is addressed by psychologists, teachers and other professionals. Therefore, the basic definition of play should be provided. According to teachers, play is *'form of activity that differs from work or learning. People like to play throughout life, but in preschool age play has a special position – it is the dominant type of activity. Play has a number of aspects: learning, exercising, emotional, motional, motivational, creative, imaginative, social, recreational, diagnostic, therapeutic'* (Průcha, Walterová, Mareš, 2003, p. 75).

Theory of play

In the past, the theory of play was analysed from various perspectives by renowned philosophers, educators and psychologists, including for example Comenius, Spencer, Hall, Groos, Piaget, Millar. It was already Comenius (1958) who considered play a means of education. Professionals in the field suggest that through play, children develop in the biological, psychological and social areas.

Piaget considers play in the context of children's **cognitive development**. He believes that developing thinking helps create more complex play and that more complex play facilitates the development of complex ways of thinking. Play helps children develop more complex forms of thinking, especially when they try to understand the principle of things that they interact with. During play, children use speech, which is linked with thinking (Piaget, Inhelder, 1970).

Piaget distinguishes the following stages of intellectual development, which are reflected in a specific nature of play:
- Sensorimotor stage (6 months to 1.5–2 years, sensorimotor and motor play;
- Preoperational stage (2–7 years), symbolic play;
- Concrete operational stage (7–11 years), abstraction, development of superordinate concepts;
- Formal operational stage (12–) (Piaget, Inhelder, 1970).

During the preschool period, Piaget defines symbolic play, which is considered the top of children's play. Through symbolic play, children transfer an activity of an

object to a substitute object. These objects then represent specific symbols. In this context we speak about assimilation, which is the basic function of symbolic play (Piaget, Inhelder, 1970). Through symbolic play children reinforce their experiences, repeat what has been experienced, come to terms with reality, which may be incomprehensible and stressful. Play satisfies emotional as well as intellectual needs of the child. In symbolic play children use play pretence and adopt roles (Vágnerová, 2012; Suchánková, 2014).

Another significant area developed by play is the **social area**. When playing together, children learn to express themselves, listen to other children, think about their ideas, etc. The following stages are defined from the perspective of the needs of a partner in play:
- Solitary play – until 3 years of age, children usually play by themselves, use various objects and observe other children playing.
- Parallel play – 3 to 4 years of age. Children play next to each other, they have the same theme and content, but it is not joint play.
- Associative play – around 4 years of age. Children play together based on an agreement, they often play 'to win something' with an attractive theme. However, the nature of play during this stage is individual.
- Cooperative play – begins as soon as the child is able to communicate with other children, understand them, cooperate, submit and lead. After 8 years of age, children need to strengthen these relationships and search for 'packs' (Millar, 1978).

Play also contributes to the development of the **biological area**. To achieve healthy development, children need to move right from birth. Children with a usual need of movement (normomotor) enjoy and search for physical activity play and demonstrate their ability to learn various movements (Koťátková, 2005).

For the purposes of the research study, in the cognitive area the authors focus on symbolic play, where emphasis is on various types of play in terms of children's activities: theme play, fictional play, constructive play, and intellectual play. The social area is represented by associative and cooperative play, the biological area by physical activity play.

1.2 Readiness and maturity of children for elementary school

It was already Comenius who defined the requirements for a 6-year-old child to enrol in primary school. He formulated the components of school readiness in the following areas: knowledge, skills, language skills, physical area, religious area, morals and virtues. He also highlighted possible differences between children and postponement of starting school attendance (Comenius, 1958).

Presently, school readiness is considered in a broader sense as a complex of biological maturing, mental development, and social development.

Relevant literature uses the following definitions: *'School readiness includes both the level of biological and mental development of the child, and the dispositions generated through learning and influenced by a specific social environment. Children*

prepare for entering school in the family and most children in kindergarten' (Průcha, Walterová, Mareš, 2009, p. 301).

In compliance with the Education Act, a child entering elementary school shall be physically and mentally mature, and compulsory school attendance shall start at the beginning of the school year following the date when the child reaches six years of age (Education Act 561/2004, Section 36).

Authors focusing on this issue agree that school readiness is an educational area, which is evaluated by kindergarten teachers, employees of educational and psychological counselling centres, and also by elementary school teachers during the enrolment procedure.

1. 3 Preschool curriculum as an indicator of child's readiness for enrolment in elementary school

The criteria selected for the purposes of the research study were based on the preschool curriculum (Framework Educational Program for Pre-school Education) in compliance with the following areas of child development: cognitive, social and biological.

This curricular document is binding for kindergartens entered in the Register of Schools kept by the Ministry of Education, Youth and Sports. The curriculum is a general framework according to which kindergartens ensure the educational process. It formulates general objectives, key competences, educational content, recommended educational means, procedures, methods and organizational forms. The key competences represent the outcomes of preschool education, which is followed by elementary education. Their level can be observed during all activities of the child in kindergarten, including spontaneous play, which is considered by the preschool curriculum one of the basic means of children's development (RVP PV, 2018).

In the context of the latest changes to the educational policy, according to which the last year of preschool education is compulsory, the key competences represent crucial criteria of educational diagnostics in the process of analysing the readiness of preschool children for enrolment in elementary school.

2   Research part

2.1 Design of the qualitative research study

Research problem

Analysis of spontaneous children's play as a means of educational diagnostics of their readiness for starting compulsory education.

Main objective

To present children's play as a natural aspect of their development but also as a means of educational diagnostics in the context of assessment of children's readiness for starting compulsory education.

Partial objectives

To analyse children's play (5 to 7 years of age) in terms of the basic classification.
To analyse and assess the results of the qualitative research study aimed at children's play as a means of educational diagnostics with an emphasis on school readiness.

Research questions

RQ1: What types of play are chosen by children aged 5 to 7 years in kindergarten?
RQ2: What sort of information can be gained through an analysis of play in terms of children's readiness for starting compulsory education?

Data collection methods: indirect observation by means of video recordings taken in selected kindergartens, evaluation using record sheets with predetermined school readiness criteria.

Recruitment of participants: criterion-based selection (inclusion criteria: kindergarten in Olomouc, children aged 5 to 7 years, parents' consent, morning attendance in kindergarten).

Subject of investigation: 5 girls and 5 boys aged 5 to 7 years

Period of taking video recordings: April-June 2018

2. 2 Assessment of the research study

RQ1: What types of play are chosen by children aged 5 to 7 years in kindergarten?

In the analysis of video recordings, focus was on various forms of play by types of activities.

Table 1 Play by types of activities

Play	Type of activity – heterogeneous group of 3 to 7-year-old children
Theme	Stories from life, TV stories, etc.: - Dominated by playing household, using especially the playing corner, mixed with constructive play (building houses, rooms, etc.) - Playing traffic (mixed with constructive play) - Playing soldiers mixed with constructive and fictional play The play was mostly of a social nature. The play was controlled by intrinsic motivation, children made their own choice. Only a small proportion of play was induced by the teacher (baking play).
Constructive	Making of a specific product: - Playing with blocks (building chimneys, cities, roads, etc.) The play was mostly of a social nature, younger children (3) mostly played alone. The following activities were also observed:

	- Drawing (individual, collective work) - Painting (individual, collective work) - Gluing, cutting (individual) - Puzzle, dominoes
Fictional	This category includes playing with musical instruments accompanied by movement interpretation (piano, flute, rhythmic instruments) Mixed with theme play. The play was of a social nature.
Physical activity	- Physical activity improvisation - Tag - Climbing frame

By means of the video recordings, the types of play defined in the table above were observed. The most frequent types of spontaneous play were specified. Most types of theme play were spontaneous; teacher-induced play of this type was not observed. Teacher-induced activity was the baking play. Teacher-induced play was observed in the case of constructive play when children were unable to choose a specific activity. An analysis of theme play in children aged 5-7 years revealed that some play was less developed, although it was played for a longer period of time (approximately 20 minutes).

A positive aspect was the relationship with playing partners (both younger and older children). A minimum number of conflicts was observed; older children were able to respect younger children. Signs of cooperative play were identified in 6-7year-old children, both in constructive and theme play.

An analysis of play in terms of the development of the child's personality suggested development in the **biological area,** i.e. gross and fine motor skills, graphomotor skills, sensory perception, etc. (construction, tag, overcoming obstacles, drawing, painting, cutting, etc.) The development of the physical area is closely associated with the **cognitive and social area**. A stimulating effect in the mental area was observed especially in theme play, including primarily speech, fantasy, mental operations, memory, but also self-regulation. All monitored types of play significantly contributed to the development of the social area.

The analysis highlighted some differences that deserve attention. The following question was asked: *To what extent is the degree of play development associated with the leadership and intervention by the teacher and the role of the teacher as a playing partner*?

Play is definitely a natural activity of preschool children. Preschool curricula include various types of play as a basic means of overall personality development of the child. The first part of the paper deals with play that can be used for the purposes of educational diagnostics and child development, i.e. as a significant indicator of school readiness. In the next part, play will be analysed in terms of various types. The following question will be answered: *'Why do some classes use active types of play rich in terms of content, while in other classes play is poor in terms of content?'*

Should teachers use spontaneous play in a qualified way as a tool of personality development and as a method of educational diagnostics, they must understand children's play. In the video recordings, various approaches of kindergarten teachers to spontaneous play were observed.

In trying to answer the questions defined above, a useful tool might be the diagram of interactions in personality development (Čáp, Mareš, 2007, p. 184).

Table 2 Personality interaction with the environment

Environment	Personality interaction with the environment	Personality
Family, social family network Peers Persons and groups School Locality Nature and society	Information and stimuli, selection and processing. Activities: play, learning, working, hobby, etc. Social communication. Education as a specific interaction and communication	Biological conditions, mental processes, conditions, motivation, knowledge, skills, habits, attitudes, adopted roles, qualities, self-assessment, self-regulation, etc. Personality structure

The diagram clearly shows internal and external conditions and mechanisms of interaction between personality and environment, which is closely related to child development. The present paper focuses on the teacher-child and child-peers relationships in the context of spontaneous play.

In the kindergartens involved in the study, spontaneous play, which takes place between 7.00 and 9.30 a.m., two basic teacher-child approaches were observed. The first group consists of teachers who welcome the child upon arrival and leave the selection as to the type of play and partner up to the child. They intervene in children's play very little. They rather supervise children for safety reasons. When children come to the classroom, they look around, walk between playing children and then join one of the groups. The selection of time of play and playing partner differs between children. This is mostly influenced by the presence of a friend who they often play with. An interesting aspect was the position of older children in this kindergarten. The role of the teacher was taken over by the oldest children, specifically one girl (6). In the course of play she appeared dominant, organized children's play and advised younger children. These children accepted her instructions and watched her play. When younger children (3 to 4 years of age) took a toy, they carried it near the older girl. This was a group of five children. However, the types of play that were observed in the study, i.e. construction, playing with blocks, playing household, puzzle, were little developed in terms of content. During the whole period of observation, no conflict took place between children. Although children's play was very calm, it appears that children lacked an adult playing partner. The second group consists of teachers who welcome the child upon arrival and try to include the child in a group of children or offer individual play at a table. They intervene in play, but rather in terms of supervision and safety. In the second group, teachers clearly try to involve the child in play as soon as possible. The child starts to play according to the teacher's instruction and gradually takes up a favourite activity.

The teacher supervised the course of play, intervened by means of instructions and monitored the content. In this group of children, play was richer in terms of content and use of playing material. The effect of the teacher was clear, although she acted mainly as an advisor.

The authors of the present study believe that the teacher should approach the child based on thorough knowledge of the child's interests and needs. During the observations, the teacher never tried to become a playing partner of the child, not even for a short period of time. The teacher was always in the position of a 'superior' or advisor who tells children what they should and should not do, or who tries to regulate children's play. In this context we should mention the opinions of *Kellmer Pringle, who emphasises the importance of human relationships for the child with a particular emphasis on feelings (love, safety, appreciation, acknowledgement). Similarly, Vygotsky, Bruner and Piaget attribute great importance to relationships, but they place a special emphasis on cognition. According to Vygotsky, higher functions develop especially as a result of social interaction* (Bruce, 1996, p. 52).

It can be stated that children are able to independently choose their preferred play and playing partner. A significant aspect in the development of play and its richness is the teacher. Should play become a means of child development and at the same time serve as a diagnostic tool, it needs to be supported by an adult person, also in the case of spontaneous play. If the teacher knows well the developmental level of the children, their interests and needs, he/she may join the play in a peaceful way as a friend and partner. Not as an adult whose role is to organize the play.

Play in kindergarten is impossible without toys and other equipment. Czech kindergartens have good material provisions, both external and internal. Classrooms are provided with playing corners, cabinets with toys and various playing, artistic and working materials readily available to children. This is surely a basic prerequisite. The question is however, whether these playing and other materials encourage children's curiosity and effort to learn, discover, etc. and whether these materials are used in this way.

In foreign kindergartens children were observed during spontaneous play, in which they experimented with colours, water, used playing tables with natural products, sand tables, etc. Children were engaged and had a lot of ideas. Children's creativity, initiative, and cooperation was also observed in kindergartens where the material provisions were considered insufficient. Contrary to the Czech Republic, all of these kindergartens were dominated by 'working mess' and they were much more noisy. The teachers almost did not intervene in the activities and did not reprimand children. Usually there were more teachers and assistant teachers in the classroom who really played with children.

Czech teachers are often concerned about tidiness and order, which limits children's initiative. The selection of play is often restricted by the themes specified in the school curriculum. Naturally, usual events cannot be separated from ordinary life. If for example during Easter the teacher encourages children to paint Easter eggs and decorate the classroom and a child chooses to build a road or dig a hole because construction work is under way in front of their house, the teacher should not restrict

such activity just because she thinks it is a barrier to achieving predetermined objectives.

The teacher should not be a mere observer or supervisor of children's spontaneous play, but should be able to approach children and their play on the basis of thorough understanding of the situation from the perspective of the child.

RQ2: What sort of information can be gained through an analysis of play in terms of children's readiness for starting compulsory education?

In the context of this research question, the following criteria were formulated in compliance with the preschool curriculum (cognitive, social and biological areas), and tested by means of the selected methodological procedures. The criteria were formulated on a three-point scale.

Assessment criteria for the cognitive area: deliberately focuses on the activity, resolves new situations, is creative, presents own ideas, develops play, expresses one's imagination through play, finds new solutions, makes decisions about play and develops it, respects the rules, is sensitive to the objects used, develops play.

Assessment criteria for the social area: listens to others, controls one's emotions, communicates with another child without restraint, communicates with the teacher without restraint, respects the needs and behaviour of others, is empathetic, pursues one's needs with respect to others, cooperates with other children, respects the basic rules of social behaviour (thanks, requests), agrees with other children on a joint solution.

Assessment criteria for the biological area: maintains correct posture, coordinates locomotion and other body positions, controls gross motor skills, controls fine motor skills (manipulates with toys and objects with precision), coordinates the hand and the eye in manipulation with objects, is oriented in the classroom.
Part of the analysis was a comparison of school readiness by gender.

Illustration of the assessment of the monitored areas

Table 3 Characteristics of the research sample: girls

	Age	Postponement	Footage in minutes
Girl 1	6 years, 7 months	No	50
Girl 2	5 years, 6 months	No	55
Girl 3	5 years, 9 months	No	30
Girl 4	5 years, 10 months	No	75
Girl 5	7 years, 6 months	Yes	63

Table 4 Example of analysis of video recordings in the monitored areas

	Cognitive area	Social area	Biological area
Girl 2	She is careful, precise, and reflective. She is not active and rather watches what is	She is rather shy and unassertive among other children, she is not a frequent playing partner of other children. She	In the area of gross motor skills the observation focused on walking, posture, and

	happening around. It is difficult for her to find an activity that she would enjoy. She repeatedly comes to the teacher and asks for activities. The girl shows lack of independence in decision making in planning her activities. When she starts an activity, she concentrates and finishes it.	often turns to the teacher and asks for an activity, she is passive and does not join other children's play. She prefers individual activities. She tries to communicate with other children, for example she commended other girls for their construction from building blocks. She speaks slowly and comprehensibly. When another child takes over responsibility she retreats.	movement coordination. The girl was not physically active. In other observed areas the girl showed an appropriate level corresponding to a child at the end of preschool education.

Cognitive area:
In this area a lower degree of creativity and fantasy in the development of play was observed. In the case of girl 2, lack of independence and certainty was observed in the selection of her activities and play. This girl required the teacher' leadership and did not engage in spontaneous play at all. This raises a question of how the girl will deal with the requirements associated with enrolment in elementary school. In the context of developmental psychology, one of the prerequisites for starting elementary school is independence, creativity and an active approach (Čížková et al. 1999). In terms of other criteria, the girls' achievement corresponded with their age.

Social area:
Problems were observed in listening to others, cooperation, and respecting the needs of others. In one case, girl 1 showed dominant tendencies, especially when playing with younger children. Girl 2 does not engage in group activities and if she does, she is usually in a subordinate role. Again, this girl was unable to join other children's play, which could be associated with lower self-confidence. As suggested by Čížková et al. (1999) these aspects are important for successful school enrolment.
Biological area:

The predetermined criteria were observed and assessed. In the case of girl 2 in the area of gross motor skills, it was only possible to observe walking, posture and basic body coordination. This girl was not active in the area of gross motor skills, was not interested in physical activity games, was quiet and less physically active. In this area, the girls showed a corresponding level in the monitored criteria in compliance with the preschool curriculum.

As far as school readiness is concerned, in the case of girl 2 a potential risk of early enrolment was observed. In some criteria in all monitored areas the girl showed signs of insufficient readiness. In this case, further examination is recommended.

Table 5 Characteristics of the research sample: boys

	Age	Postponement	Footage in minutes
Boy 1	6 years, 10 months	Yes	41
Boy 2	5 years, 11 months	Yes	40
Boy 3	6 years, 7 months	Yes	30
Boy 4	5 years, 2 months	No	69
Boy 5	7 years, 4 months	Yes	70

Table 6 Example of analysis of video recordings in the monitored areas

	Cognitive area	Social area	Biological area
Boy 4	The boy respects the agreed rules of play. In constructive play he is creative, controls and develops the course of play. In theme play the boy uses substitute and imaginary objects, introduces new impulses in play, but rather in a subordinate position.	In the course of play the boy is not dominant and is able to adapt to the play of other children. He communicates and is able to express his opinions. He listens carefully to what other children are telling him. There were situations in which he only watched other children play. He carries his favourite plush toy.	He is oriented in the classroom, steps over barriers and changes body positions. He naturally makes a jump or run. With small objects the boy manipulates with precision. He is able to make an airplane of Lego blocks and then develop play.

Cognitive area:
In the course of play the boys are usually creative, use substitute objects and also make their own (sophisticated functional constructions that for example move). In theme play they take simple objects and use their fantasy to involve them in play, they also use imaginary objects. In developing play, the also use their memory and previous experience. This was especially obvious in the case of boys who were given postponement of school attendance in the previous school year. This means that postponement of school attendance was the right decision. Theme play mostly involved martial issues, which reflects the boys' interest in this area.

Social area:
No significant problems were identified in this area. The boys did not show signs of dominance or aggression against each other or with respect to other children. They engaged other children in play and showed empathy. For most of the monitored day, boy 4 carried his favourite plush toy. At this age, this is not considered a negative fact.

Biological area:
In this area the boys showed a natural need for movement, which was observed during theme play but also physical activity play (obstacle course, construction of a slide). Boy 2 preferred quiet activities such as reading; the boy was not interested in physical activity and rather watched other children.

As far as school readiness is concerned, the boys do not show signs of insufficient readiness. In all of the monitored areas, it was possible to assess the predetermined criteria. It should be noted however that most of the boys were given postponement of compulsory school attendance in the previous school year, which had an effect on the level of their development.

It can be stated that play between girls and boys differed in the objects and materials used, in the type of play, development and enjoyment.

In **the cognitive area** a higher degree of creativity and fantasy was observed in boys as opposed to girls. Girls usually used real objects and themes associated with the role of women and mothers; no fictional or constructive play was observed. Boys preferred themes associated with the role of men (for example soldiers), but there were also other themes such as the shop. Boys usually made objects that they needed. As opposed to girls, they preferred fictional and constructive play. In this context, the following question should be asked: *Is greater creativity caused by the fact that boys tend to construct and imitate objects that are not present in kindergarten (e.g. tanks, shells, etc.)? Or is the level in this area associated with the fact that most boys were given postponement of compulsory school attendance in the previous school year*? Potential problems with school enrolment were observed only in the case of girl 2.

No significant differences were observed in **the social area**. Only in the case of girl 1 the teacher should pay more attention. Generally, girls' play was dominated by motives such as caring for somebody, etc. Potential problems with school enrolment were observed only in the case of girl 2.

No significant problems were observed in **the biological area**. Both groups showed a need for movement, the level of gross and fine motor skills corresponded with children at the end of preschool education. Potential problems with school enrolment were observed only in the case of girl 2.

The authors managed to capture and analyse school readiness indicators in spontaneous play. The above mentioned implies that teachers should pay more attention to observing children's play in order to diagnose the current state as well as overall children's development, and at the same time use appropriate play activities to ensure systematic children's development. It should be noted that play should be included among significant indicators of school readiness.

Conclusion

A detailed analysis of video recordings suggested the types of play that children in kindergarten prefer. Children select from a wide range of play activities. The development of play in terms of content suggests a direct link with the environment and its stimulating nature. The role of the teacher in children's play is of crucial importance, but not in the role of an educator who gives instructions concerning what the child is allowed do, what the child should to, how the child should play, but rather as a playing partner respecting the child's personality. At the same time the research study confirmed that the outcomes defined in the preschool curriculum as school readiness indicators could be diagnosed through spontaneous play. In diagnosing school readiness, teachers should assess not only controlled activities. The educators

of future kindergarten teachers should focus on the development of the diagnostic competence with an emphasis on observation.

Acknowledgements

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Collaborative Bilingual Teaching in Turkish EFL Context

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Abstract

This study investigates the collaborative bilingual teaching based on co- teaching model by an English language teacher and a subject teacher in a private primary level school in Istanbul. It explores the administrators' and teachers' perceptions and attitudes. During the bilingual collaborative teaching, each 1st grade class is staffed by two Turkish native teachers - a monolingual Turkish class teacher and a bilingual English language (L2) teacher who uses both languages (Turkish and English). The study is qualitative including semi structured interviews with 4 administrators and 12 teachers as well as observations in two classes. The data was analysed by means of inductive analysis. The findings reveal the implementation of the programme and the teachers' practises based on different co-teaching roles, administrators and teachers' perceptions including the benefits of the collaborative bilingual education and the challenges faced in this programme. On the basis of these findings a number of implications are discussed regarding bilingual teaching in EFL settings.

Keywords: Collaborative bilingual education, Turkish EFL context, co-teaching, bilingual teacher

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Introduction

Language learning and teaching practices have been undergoing critical changes. Many schools in EFL contexts are currently initiating bilingual practices in classroom particularly by two teachers who use two languages to teach - Turkish and English in this current study. However, the classroom practices and teachers' understandings of their roles as well as contextual issues in such school are underexplored. To address this gap, we investigated a case study in a school where collaborative bilingual teaching was conducting.

Bilingual education

Abello-Contesse (2013) defined bilingual education as "the regular use of two or more languages for teaching and learning in instructional setting when bilingualism and biliteracy are two of the explicit long-term goals" (p. 4). Thus, it "refers to an organized and planned programme that uses two (or more) languages of instruction" (Paia, et. al, 2015, p.146). In practice, different forms of bilingual education are conducted depending on the context. Baker (2001) categorises the bilingual education as 'weak forms' and 'strong forms'. The former includes submersion and transitional bilingual education programmes based on the assimilation of the minority language. On the other hand, the latter is immersion bilingual education and dual language (two-way) bilingual education. These programmes differ from each other in terms time of teaching in minority or majority languages, yet the common aim is full proficiency and bilingualism. In EFL contexts, these programmes employ two teachers who instruct in two languages by collaborating with each another before and while teaching.

Co-teaching

Co-teaching is defined as "the collaboration between general teacher and special education teachers for all of the teaching responsibilities of all students assigned to a classroom" (Gately & Gately, 2001). Co-teaching requires active participation of both educators in delivering instruction, sharing responsibility for all their students, enabling student learning, and acquiring instructional resources and space (Friend, 2008). Therefore, many factors affect co-teaching such as planning time, working relationship between partners, roles and responsibilities in the classroom, and administrative support and co teaching includes six different approaches selected depending on the students' needs and instructional intent. Cook and Friend (2004) describe various co-teaching practices as "one teaches, one observes", "one teaches, one assists", "parallel teaching", "station teaching", "alternative teaching", and "team teaching. Each practice assigns different roles to teachers teaching together, where they use different two languages systematically during their teaching.

In recent years, collaborative partnership between ESL teachers and a content or class teachers has gained popularity. Honigsfeld and Dove (2010) summarizes the benefits of collaboration between content teachers and ESL teachers for students including differentiation and individualisation of materials and instruction, sustained exposure to two languages and communication and interaction through these two languages systematically, and more collaboration between teachers and students.

In this regard, there are some studies on bilingual teaching based on collaboration of English language teachers and mainstream or class teachers, yet they are quite limited. To illustrate, Duke and Mabbott (2001) presented a new model teaching based on collaboration between mainstream teachers and ESL teachers in a primary school in US. The study showed how teachers learnt to be more flexible and through teaming, improved their teaching skills and benefited from working collaboratively. Similarly, Davison (2006) that teachers' attitudes and efforts change depending on the level of the collaboration, highlighting the challenges in teacher collaboration. Fielding (2016) explored the teachers' perceptions of their pedagogies and interactions affecting the students' connection to the languages. This study investigated two different classrooms of a same school in Australia. In one, bilingual teaching was maintained by two teachers, a French native and an English native, who adopted team teaching setting, whereas the other was an immersion classroom where teaching was done entirely in French by a French native teacher. The findings showed that in bilingual classroom, the interaction affect students' identity formation significantly. Teachers' reflections on their pedagogies revealed that they developed their students' bilingual identity through empowerment, confidence development and role-modelling. Teacher interviews identified the importance of good relationship between team teachers and the alignment between their teaching pedagogies as highly significant factors for a successful bilingual education and creating a positive environment in bilingual classrooms. Class observations and the interviews showed team teachers investment in developing students' bilingual selves by creating opportunities for students to interact meaningfully in both languages and to build students' confidence in using both languages. These studies reveal out the benefits of collaborative bilingual teaching not only for students but also for teachers.

Collaborative bilingual teaching is a new practice which started to be implemented in in Turkey and to our best knowledge, there is no study exploring such teaching in Turkish EFL context. In this regard, this study aims to address this gap and explores the implementation of a collaborative bilingual education via these research questions:

1. How is collaborative bilingual education implemented in this school?
2. What are the factors affecting the implementation of this programme?
3. What are the benefits and challenges reported by the teachers and administrators regarding this programme?

Methodology

Research Context

This study was conducted in a private primary school, one of the schools of an institution, in Istanbul, Turkey. During the bilingual collaborative teaching, each 1st grade class is staffed by two Turkish native teachers, but one is Turkish class teacher who is monolingual and the other one is English language (L2) teacher who is bilingual. Students in grade 1 have 44 lesson hours including out of class activities. 14 of them are maintained as bilingual education based on co-teaching of Turkish L1 English teacher and Turkish class teacher. Bilingual education includes 4 hour-literacy lessons (2 English + 2 Turkish), 6 hours inquiry (2 in English + 4 Turkish), and 4 hours math lesson (2 hours in Turkish and 2 hours in English).

Methodology

A single case qualitative study approach was adopted in this study for "an in depth description and analysis of a bounded system (a case)" which is the implementation of a bilingual programme based on collaboration between class teacher and English language teacher in one of the schools of an institution (Merriam, 2009, p.39)

Participants

This study was conducted with 4 administrators including the director of the school, 2 vice directors and the head of English department and 12 teachers including 6 Turkish native class teachers (CT) and 6 Turkish native English teachers (ET) in a private primary school in Istanbul, Turkey in the fall term of 2017-2018 academic year. Their teaching experiences range from 1 to 12 years and they did not have any experiences in bilingual teaching and co-teaching.

Data Collection and Analysis

In this case study, qualitative research method was used. The data was collected by means of semi-structured interviews conducted with administrators and teachers as well as two class observations. All teachers and administrators provided consent for recording and transcription of interviews. These lasted around 15 minutes. The interview questions (11 questions) were open-ended and designed for in-depth analysis of the implementation of bilingual education based on co-teaching and the perceptions, experiences, feelings and thoughts of the teachers and administrators related to this programme (see Appendix A). In addition to the semi-structured interviews, two classes including two partner teachers in each were observed directly. One of the lessons observed was Maths lesson in Turkish and the other one was Turkish literacy lesson and each lesson was in 40 mins length. During the observation, thick notes were taken about the teachers, interactions between partner teachers and teachers and students, activities, conversations and so on. These notes were used to support interview data.

In this study, credibility was established through certain ways: Firstly, the data was collected from two different perspectives, administrators and teachers, to increase the credibility. Secondly, the credibility was ensured through peer-review or peer debriefing (Merriam, 2009). The second author revised the raw data and provided insight into the data, and support in developing the themes to construct the whole, and made suggestions for modifying the research design. Moreover, to establish credibility, thick descriptions were given along with the participants' direct comments for in depth understanding of the context, implication of the programme and the participants' perceptions related to the programme. "Adequate engagement in data collection" was another way used to establish the credibility of the data and the saturation of the themes, which occurred when no new themes emerged (Merriam, 2009, p. 219). Moreover, pattern matching was used to relate emerging themes to theoretical aspects, and participants' comments were used to illustrate this relationship and to increase the credibility of the study. In addition, interview data was supported through the data gathered by means of class observations.

We tried to provide rich, detailed and thick description of the study together with the detailed setting and participants' information to increase the possibility of transferability for the reader (Shkedi, 2005).

The data was analysed inductively, a bottom up approach in which "data builds concepts, hypothesis or theories rather than deductively testing hypotheses" (Merriam, 2009, p. 15). The categories were not pre-determined but emerged as a result of the interview analysis. Firstly, audio-recorded interview data was transcribed and carefully coded, later a consensus was reached. Then, all codes were categorized under sub-themes and themes leading to the emergence of theories. The latest version of the findings was reviewed and agreement on codes and themes were provided between the researchers.

Findings

This study investigated the implementation of the collaborative bilingual programme in a primary 1st grade level and the perceptions of the partner teachers and the administrators related to the programme. There are themes and sub themes that emerged as a result of the analysis of the interview data presented below.

1. **Implementing the Collaborative Bilingual Programme and Classroom Practices**

Implementation of this programme has two aspects; out of class and in class.

Out of Class

Planning

In the implementation of this programme, administrators and teachers stated that they were sent weekly lesson plans from the centre of the institution. Head of the English Department reported: "*Teachers follow up these plans. These plans are based on a theme each week and include classroom activities, games, hand-outs given to the students, seating, the pages need to be covered on the course books*". However, she also stated that teachers "*are flexible in applying this plan in their lessons. They decide how to apply this plan in their lesson together with their partners who share the same class*". In addition, one of the Vice Directors said "*every Tuesday, we have meeting with class teachers and English teachers all together*" to negotiate the plan. "*In addition to the meeting including all teachers in this programme and administrators, teachers have individual meetings with their own partners sharing the same class*".

Developing appropriate materials

Teachers have stated that they do not prepare any material together with their partners because which materials to be used are stated in the lesson plans sent by the central institution, but they have said that they negotiate how to use the materials in the classroom with their partners. One of the English teachers reported: "*We do not prepare new materials but decide how to use the materials together in the class that*

we share, yet we do not use English and Turkish material in the same lesson. I use my material in English lesson and my partner use it in her own lesson" (ET1).

In-class

Classroom instruction

Teachers have stated that there is one dominant language in lessons and that change depending on the lesson. For instance one of the class teachers reported: "*If it is Turkish literacy lesson, the classroom instruction is in Turkish language or If it is Turkish math lesson, I teach the topic in Turkish and my partner helps the students with the activities in English, walks around the class and checks whether they are doing correctly or not. We do not teach the same topic both in English and Turkish in the same lesson*" (CT1).

What the teacher stated above was also observed in the classroom. It was a Maths lesson and the class teacher starts the lesson in Turkish. She was teaching addition:

> CT1: 3+6 = ? (she writes on the board and gives instruction in Turkish)
> Fasülyeleri kullanın saymak için. İlk olarak 6 fasülye koy artı 3 tane daha. Kaç oluyor? Bir, iki, üç, dört, beş, altı, 3 tane daha; yedi, sekiz, dokuz, eşittir dokuz.
> (Children first put 6 beans on their desk, then draw plus and count 3 more beans. Turkish teacher starts walking around the class to check the students and gives feedback.)
> CT1: Kaç yapıyor, 9 tane fasülye koyman gerekiyor oraya. (She asks a student)
> (English teacher is walking around the class at the same time and helping the students individually.
> ET1: Did you do? How many? ... Well done! (She asks a student)
> …

As it is seen from a part in the observation, class teacher gives direct instruction and teaches counting the numbers in Turkish. After she writes the exercise on the board, she elicits the answers from the students and then, starts walking around the classroom to check and to help the students in need. English teacher is also walking around the classroom to check and help the students, yet she talks in English while helping the students.

Co-teaching models / roles

Teachers have stated that their teacher roles are changing depending on the lesson. While in some lessons, class teacher is an active teacher who gives direct instructions and teaches mainly, the other teacher act as ***assistant/ supporter*** who helps his/her partner or the students at the back of the class or adjusts the pair and group works as stated by an English teacher below:

> Sometimes, while I am giving direct instruction to the class, my partner is supporting/ helping me at the back of the class, by helping the students in groups or pairs. The role of the teacher changes depending on the topic and the need of the students (ET3).

In the same Maths lesson exemplified above, it was observed that while class teacher led the main instruction in the lesson, English teacher circulated among the students and supported them individually and helped the class teacher:

> Turkish Class teacher writes another exercise on the board;
> CT1: 5+6= ? Modelleme yapıyoruz. Fasülyeleri koyun. Kaç tane fasülye gerekiyor, koy onları sıranın üstüne (to the whole class)
> CT1: Kaç fasülye koyman gerekiyor (she asks a student)
> The student: beş
> CT1: Bravo, şimdi ekle. Sayarak koy fasülyeleri.
> Another student: Öğretmenim yaptım.
> CT1: Aferin, bravo.
> (English teacher goes on walking around the class and helping the students. While checking, she tells a student;
> ET1: You need to put the 6 pieces of beans first and five more.
> (Then, she helps another student who has difficulty in doing the exercise.)
> ET1: Let's do it together. (She draws symbols of '+' and '=' on the desk; ..... +...... = , and counts the beans together with the student). One, two, three, four, five, six, plus, one, two, three, four, five (elicits the number from the student). It is eleven. Well done.

As it is seen, English teacher walks around the classroom, checks students, gives feedback and praises them while class teacher delivers the lesson and gives the main instruction.

On the other hand, most of the class teachers stated that as they do not know English and in order to prevent the students from talking Turkish, they cannot help the English teacher as much as possible. During this time, they act as *an observer* sitting behind of the class or if it is a Turkish literacy lesson, English teacher cannot help the class teacher a lot, so act as an observer: "*We are observing our partner while he/she is teaching. We do not help English teacher a lot, because then students want to speak Turkish*" (CT). This is also observed in the class that while class teacher was teaching how to read the sentences in a Turkish literacy lesson, English teacher was observed acting as a passive teacher most of the time of the lesson:

> CT: 12. sayfayı açın. (Turkish teacher starts the lesson)
> (Class teacher show a sentence on the board and read it aloud)
> CT: On tane horoz öttü. Ömer sen oku (she nominates a student)
> S: On tane horoz öttü (student tries to read the sentence).

English teacher is mostly standing at the back of the class, acts as **an *observer*** during the class except for helping students quite a few times.

In addition to acting as an assistant and observer, some teachers stated in some co-teaching situations, they do ***team-teaching*** purposely. For example, one of the English teacher says: "*Sometimes I need a help in explaining abstract topics like freedom, so I ask the class teacher to start the lesson first in Turkish, and then I continue the lesson in English. I cannot tell that we divide the class time into half, but sometimes I ask class teacher to start or to finish the lesson or to do an activity to help the students' understanding*" (ET5).

2.   Facilitating Factors in the Implementation of the Programme

Good co-ordination

Administrators think that the success behind implementing this collaborative bilingual programme is good co-ordination as a result of weekly meetings and the meetings between the partners themselves. One of the Vice directors said:

> "We have weekly meetings. We are always in contact with each other. First, Head of foreign languages has a meeting with English teachers; and then, we all have a meeting including class teachers and English teachers every Tuesday. Apart from weekly meetings, partner teachers come together and plan their lessons".

Teacher adaptation

Second reason of success is stated as the adaptation of the teachers to the system in a short time. Vice director 2 stated: "*English teachers and class teachers have adapted to the new system and they are working collaboratively*".

Partner Matching

Another key point of success in implementation of this programme is stated as suitable partners being matched with each other. The head of the English department pointed out the importance of the matching the suitable partner teachers:

> We spent hours while matching the partner teachers. If there is a problem in matching the partners, the plan does not go on in any way. We took the characteristics of the teachers into consideration. Personalities of the teachers are very important in partnering the teachers. The main reason behind implementing this system successfully is the collaboration and the synergy between the co-teachers.

What the head of English Department said about the importance of right partner matching for a successful bilingual teaching was supported by the words of one of the teachers as it can be seen below:

> Being a good partner and being in collaboration is important in this system. Two teachers as adult are in a classroom, it is not easy. You may have different opinions about classroom management, attitudes toward the students and tolerating something or not, yet in those aspects, we have common sharing and attitudes with my partner; that's why, we have not experienced a problem up to now (CT1).

3.   Benefits of the Programme and Challenges Faced

The third research question investigated the benefits of the programme and the challenges faced during the implementation of the programme. What teachers reported revealed out some benefits and challenges regarding the programme.

Benefits for students

Enhancing learning in both languages

Administrators and teachers think that this programme has created a bilingual environment that enhances students' learning in both languages as *"students are in a natural environment where both languages are used. Students transfer their language skills and knowledge across languages" (Head of the English Department).* They think that *students make effort to use both languages. "They are aware that they have two class teachers, one English and one Turkish speaking and know that they need to speak English with their English teacher and Turkish with their class teacher"(CT5).*

Promoting acquisition

When students try to use both languages in this bilingual environment, this programme also helps students to develop English Language. One of the English teachers said:

> This programme enables the students to acquire English language and what I observe is students are learning and using the language as they are highly exposed to English language. We are always together with students, so English is not a lesson anymore, but something integrated into their lives. They are exposed to English in the class, during breakfast, lunch time; that's why there is natural language learning environment, so they do not perceive English language as a foreign language. They learn in both languages and acquire English language by hearing together with their native language (ET5).

Reinforcement of the lesson topics

Teachers also think that this bilingual education enables the reinforcement of lesson topics in both languages as the topics are thought both in native tongue and in English and it leads permanent learning: *"We have weekly plans and each week, there is a theme. The same theme is taught both in English and Turkish, so students learn the topics very well. There is a cycle of the same theme in both languages and a kind of revision"* (CT2).

Benefits for teachers

Classroom management

Administrators and the teachers think that this collaborative bilingual teaching has some advantages in their teaching like having a good classroom management. One of the teachers said: *"We are two teachers in the classroom and we help and support each other and students. This is the one of the strongest side of this programme that it leads good classroom management"* (CT3).

Interaction Between Teachers and Students

As the second benefit of this collaborative bilingual teaching, teachers think that it creates opportunities for more interaction between teachers: "*The good thing is we can have more time for teacher-student interaction as there are two teachers in the classroom, so we can have enough time to allocate for each student.*" (ET4). As the teachers have more time for students, they think that they "*can concentrate more on the needs of the students and activities*" (CT3).

Change in teaching style

Moreover, teachers think that this collaborative bilingual teaching has made some changes in their teaching style that the teachers who were more teacher-centred have more student-centred teaching now as stated by an English teacher: "*I had more teacher centred teaching style before, yet now it is more student-centred. I enjoy teaching more*"

Change in Personality

Some teachers also think that this collaborative teaching has changed their teacher personality. One teacher stated the change in her personality in a more positive way:

> We have team-teaching. I think this makes some changes in my personality. It is important to work collaboratively. It is not easy in fact because two different teachers are in the same class. We need to adjust to each other, yet I am getting used to this and it is shaping my personality to be more tolerant and less strict with my own class rules. (ET3)

Change in Beliefs

In addition to the changes in teachers' teaching style and personality, it has been stated that this collaborative bilingual teaching has made some changes in their teaching beliefs; for instance one English teacher told that she realized the benefit of using mother tongue to teach English: "*What I have experienced in this bilingual education system that using mother tongue is not bad while teaching English. Using mother tongue can help understanding of the students and it can save time* "(ET3). Another teacher stated that her view about co-teaching was not positive at first yet after experiencing and seeing the positive impacts of it on students, her beliefs about co-teaching changed. She said:

> When I learnt that we would have co-teaching system. I was too scared. Two teachers in the same class? That's too much. I thought there would be conflict of creating authority and managing the classroom. I was afraid of not having good communication, yet when you have the harmony and create the good communication with your partner, I have seen that there is no problem, even it has positive impacts on students (ET4).

Challenges

In addition to the benefits of this education system, teachers and administrators stated that they face some challenges.

Students' tendency to speak Turkish

Most of the teachers complain about some students' tendency to speak Turkish language because of the presence of Turkish class teacher in the classroom along with English teacher as reported by an English teacher: "*Students had tendency to talk with their class teacher in Turkish. They did not feel confident to contact with me as English teacher. Even if I was active teacher in front of the class, they preferred to ask question to the other teacher, Turkish teacher*" (ET1).

High responsibility for English teachers

Another challenge is the one that English teachers face as a result of becoming the second-class teacher in this system. For example, one of the English teachers stated:

> In this system, we share a class with our partner class teacher. In fact, we are two class teachers. Before this system, I had only English lesson with less lesson hours in four different classes yet now I have one class and I am responsible with everything with my partner. This system requires active engagement with the students (ET 4).

Lack of English knowledge of class teachers

Another challenges result from the lack of English knowledge of the Turkish class teachers which sometimes hinder communication between the partner teachers as English teacher is supposed to talk in English in the classroom. Head of the foreign language department stated this common problem with these words:

> Class teachers do not know English. Sometimes, they want to tell the class teacher something but they cannot talk in Turkish as the students do not know English teachers can speak Turkish in order not to discourage them to use English. Or when English teacher wants to say something to the class teacher in the classroom, sometimes they do not understand English teacher because of their lack of English knowledge. If the class teachers knew English, the system would be more effective yet in Turkey, it seems impossible to partner the teachers with class teachers who know English well.

Discussion and Conclusion

This study investigated the implication of bilingual teaching based on collaboration of class teachers and English teachers in EFL context and the perceptions of the teachers and administrators related to the programme. To get the data semi-structured interviews were conducted with the teachers and administrators and also, two classes were observed to get information about the teachers' practises. The analysis of the data revealed out information about the implementation of the programme and the teachers' practises, administrators and teachers' perceptions including the benefits of

the collaborative bilingual education and the challenges faced in this. The aim of the programme was reported as enabling the students to be full bilingual to meet the needs of global world. This bilingual education seems in the form of bilingual education in majority languages in which the medium of instruction is both in native language and international language like in Asia, in some schools (Baker, 2001). The aim is to improve learners' English language along with native language.

This bilingual education is carried out through collaboration of class teacher and language teacher in teaching process. In implementation of this programme, what teachers verbalized about their co-teaching process revealed out that they took different co-teaching roles, 'one teach, one observe; one teach, one assist and team-teaching' as defined by Cook and Friend (2004). The role of the teachers as observer and assistant were also observed during the teaching practises of the teachers in two classes participated by the researcher as observer. In one of the classes, while a teacher was leading the main instruction, the other teacher was circulating among the students and helping them. That is good to provide help to the students and to have enough time to meet their needs. On the other hand, it was observed in the second class that one teacher was acting as observer most of the time of the lesson. The teachers explained the reason of this situation as the lesson was Turkish literacy. English teacher was not able to help the students as he is required to talk in English all the time in the classroom. In both models of co-teaching, the amount of planning between the partner teachers was low. That could be the other reason of taking the teachers to take these teaching models, because it was stated both by the administrators and the teachers that the plans of the lessons are sent ready by the central institution. That could be beneficial to provide standardization in bilingual education in all schools of this institution, yet it limits the teachers to develop their own materials for the lesson and to plan their own lesson together with their partners for co-teaching. They could adapt their activities and take more team-teaching roles, which requires high planning time but enable teachers act like a body in the classroom (Cook & Friend, 2004), if they could be more flexible to plan their lessons. However, planning lessons would be time consuming for co-teachers in such an intensive teaching programme. It was stated that there are weekly meetings among the teachers and administrators to discuss the overall implication of the programme and meetings between the partners themselves to negotiate how to apply the plan and materials sent by the central institution. It is thought by the administrators that these meetings that enable them to have good co-ordination are one of the factors determining their success in implicating this collaborative bilingual teaching. Planning is highly important for a successful co- teaching programme (Duke & Mabbott, 2001; Gately & Gately, 2001; Friend, 2004; Honingfeld &Dove, 2008; Honingfeld & Dove, 2010) and administration' support is significant for effective collaboration (Honingfeld &Dove, 2010). It is good that there is an administration support. The meetings are done to provide guidance and support and enable the teachers to negotiate. One another issue in implementing a successful co-teaching is the relationship between the teacher partners. Administrators believe another key factor in implementing this collaborative bilingual teaching is as a result of the correct partner matching. They have stated that they have spent a lot of time to match the suitable teacher partners by taking the teachers' personalities into account. Luckily, the teachers adopted the system very quickly and there is synergy between the teachers who are co-teaching. This confirms the importance of the good relationship between the team partners for a successful bilingual education (Davison, 2006; Honingfeld & Dove, 2008; Fielding,

2016). Resistance and personality clashes could be the possible results of collaborative teaching as each teacher has different backgrounds, teacher identities and beliefs.

On the other hand, partnering class teacher and English language teacher is necessary in countries where English is taught as a foreign or second language for an effective bilingual education. The reason of partnering the class teacher and English language teacher for bilingual education is to benefit from their differentiated skills. When English teacher and class teacher collaborate, this "bridge the gap of their academic knowledge (Honingfeld & Dove, 2010, p.10) and they share their skills about delivering a lesson, meet the challenges, and enjoy the rewards of helping ELLs (p.17). This can be an alternating teaching model to integrate the English language teaching into classroom for the countries where English is taught as a foreign or second language. Teacher and administrators have pointed out that this bilingual education promoted the students' English language in such a short time as this programme have created a bilingual environment where students are highly exposed to English along with their mother tongue. Furthermore, it has been stated that teaching in both languages also fosters the learning in both languages and enables the reinforcement of the lesson topics that leads permanent learning for the students. Teaching the content in mother tongue and then English makes the content comprehensible for the learners.

In addition to the benefits that the bilingual education provides for the students, teachers think that this collaborative bilingual education has some positive effects on them like having a good classroom management. Moreover, it has led some changes in their teaching style, teaching beliefs and their teacher personality and as Roth and Tobin (2004) states, co-teaching is not an easy task, it is a way of changing teaching style.

On the other hand, there are some challenges faced in implementing this collaborative bilingual education resulting from the students' tendency to speak Turkish because of the presence of the Turkish class teacher in the classroom, increased responsibility of the English teachers and lack of English knowledge of the class teachers that may inhibit the communication between the partners occasionally. However, these challenges can be overcome through some future actions. Supporting the teachers through teacher trainings, developing class teachers' English knowledge and providing out of class activities and events can be keys to the success of the programme. Especially, with further teacher training, teachers can better understand the models of the co-teaching, develop better awareness and make effective decisions depending on the lesson goals and students' needs.

There is a limitation of this study that needs to be acknowledged. This qualitative data can be supported through a triangulation data collection design for overall results. In spite of the limitation, it is a significant study that provides an in-depth information about implementation of a bilingual programme based on co-teaching between English language teacher and class teacher in a primary level school in Turkish EFL context.

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Appendix A

Interview Questions

1. What's your name?
2. What's your field of teaching?
3. How long have you been teaching?
4. What's do you think about this bilingual education? What is the reason of this implication of this programme?
5. What are the difficulties and challenges that you face in this collaborative bilingual programme?
6. What are the benefits of this programme?
7. Did you get any training or education on bilingual teaching? (any workshops?)
8. What do you do to improve yourself in this collaborative teaching?
9. How do you think this collaborative bilingual teaching affected your teaching?
10. How do you plan your lessons with your teacher partner?
11. How do you develop materials with your partner?

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