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The IAFOR International Conference on Eduaction 2016, Dubai, UAE

Official Conference Proceedings

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An IDE for Java with Multilevel Hints to Develop Debugging Skills in Novices

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The IAFOR International Conference on Education- Dubai 2016
Official Conference Proceedings

Abstract
Novices find it difficult to learn programming. In order to write a program, they have to learn the basic concepts of programming along with the syntax and semantics of a programming language. One of the important tasks in programming is debugging. To become good programmers, novices need to have good debugging skills. Typically it is difficult for novices to understand and rectify the syntax errors from the compiler-generated error messages, which they encounter during the debugging process. Professional Integrated Development Environments (IDEs) are not novice-friendly in debugging. Hence an IDE for novices has been designed and implemented for Java programming. It provides multilevel hints for the compiler-generated error messages, which will make the debugging process easier. A preliminary evaluation of the tool among engineering graduates is promising. This paper explains the design and implementation of this IDE.

Keywords: Java, Compiler error messages, Debugging, Integrated Development Environment, Novice programmer.

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Introduction

Programming is a difficult task especially for novices. For writing programs a novice must acquire the programming concepts, along with syntax and semantics of a programming language. Listening to lectures helps novices to acquire knowledge, but only through practice he/she can succeed in the programming process. Novices face diverse difficulties when they start writing computer programs.

If a novice makes errors in his/her program then on compilation, the compiler generates error messages. So on seeing this error message he/she has to understand what this error message means, what is the reason for this error, how to correct this error, and learn how to avoid this error thereafter [1].

Understanding compiler-generated error messages is one of the main difficulties a novice faces during programming [2]. Because most of the times the compiler generated error messages do not match with the students level of programming ability or knowledge [1].

Different students have different ability in programming. Some students are good in syntax and semantics of programming language but they do not have an ability to solve the problem through a computer program. Some are good in problem solving but they are weak in programming language syntax. Some are average in both and some are weak in both.

A novice makes an error due to many reasons. Most of the errors are due to lack of programming experience and due to misunderstanding of the programming concepts (including syntax and semantics of programming language). Whereas the frequent errors such as, failing to close a pair of parenthesis, quotations, missing semicolon etc. are mainly due to carelessness [3]. Even though the teacher explains the error, the students repeat it. During lab sessions students spend a lot of time to rectify compiler-generated error messages for the programs that are logically correct [2].

Another difficulty faced by novice programmers is in using an Integrated Development Environments (IDEs). Most of the IDEs are developed for professional programmers [4]. Many studies have been carried out in this field to reduce the complexity of IDEs. Professional editors such as Visual Studio, Eclipse, Netbeans etc. are too complex for novices. Due to that reason many pedagogical tools are designed to make it easier for novice programmers [4]. BlueJ is one of the popular IDEs designed for novices for Java programming language [6][7][9]. It helps novices in learning object oriented concepts. In BlueJ packages are automatically created when classes are brought from different directories. Hence students use the 'import' statements very rarely. There is an option to add 'main' function in a class. Its visual environment helps students to interact with already existing classes. This may create a negative impact on students for writing programs of their own. BlueJ claims that they provide support for the compiler error message, but the help provided are not that much useful [7]. Also in this IDE user can see only one error at a time [6]. After correcting the error user has to compile again to see the next error if present, which is tedious. Studies have shown that simplified pedagogical development environments can reduce anxiety and uncertainty that novice programmers have [4].

Analysis

From a novice programmer's point of view, compiler-generated error messages are complicated and difficult to understand [2]. Sometimes these error messages are inadequate and do more harm to the debugging process [3]. For example, suppose a student misspells a variable named 'length' as 'lenght' in a java program "sample5.java", then the Java compiler displays the following error message [3]:

sample5.java:20: cannot find symbol
symbol: variable lenght
Location: class sample5

In this case, the compiler-generated error message creates enough confusion to the beginners; also it does not help them to fix the error. Another issue is that the error message "cannot find symbol" will appear in the following contexts also:

1. The variable is not declared, but is used.
2. The variable is declared, inside a conditional block and is used outside of that conditional block.
3. If there is any mistake in the spelling of the keywords like int, float, String etc.

Consider another Java error message, "sample6.java:3: class, interface, or enum expected". This error message will appear in the following cases:

1. When the programmer misspells the keyword "class".
2. When the programmer misses '}' at the end of program.
3. When there is a mismatch in '{' and '}' braces.
4. When the programmer forget to add 'class' in the program.

Consider another 'javac' error message which is experienced by almost all Java programmers, that is "; expected". This is one of the trouble-free error messages, which can be easily understandable by novice programmers. From this error message, programmer infers that the statement requires ";" at the end of the statement shown along with the error. But the same error message is displayed due to some other problems even if you have already added semicolon at the end of the statement. Some of the reasons, which novices may not be familiar with are given below:

1. If this error is occurring where there should not be a semi-colon (e.g. in the middle of a method declaration), this could be a sign that the previous method does not end properly.
2. If there is any mistake in the main function or if you forget to add '{' after main function.
3. If there is any mistake in the keywords like throws, static, public, private, protected, new, assert, for, while, if etc.
4. If you use keywords as your class name.
5. If you forget to close double quotes in the statement
6. If you forget to open a '(' or there is a mismatch in '(' and ')' in the statement shown with error etc.

This motivated the authors to add hints for the most common compiler-generated error messages in Java to help novices to understand the different reasons for the same error message. Hence, in order to find the most common errors, the authors have conducted a small survey among the 4th semester B.Tech (Information Technology) students of School of Engineering, Cochin University (CUSAT). They were asked in the "Data Structure using Java" lab, to note down the syntax errors each one encounters. After each lab session the lists were collected from the students. Based on the frequency of the same error message, the common error messages are determined.

The most common errors encountered by the students during their java lab classes are:

1. cannot find symbol
2. ;expected
3. class, interface or enum expected
4. illegal start of expression
5. incompatible types
6. invalid method declaration; return type required
7.)expected
8. <identifier> expected
9. reached end of file while parsing
10. }expected
11. not a statement
12. Possible loss of precision
13. unclosed string literal
14. Variable NAME Might Not Have Been Initialized
15. Null Pointer Exception
16. Array Index Out of Bounds Exception
17. file not found
18. Missing return statement
19. malformed floating point literal
20. illegal start of type
21. package system does not exist
22. {expected
23.]expected
24. (expected
25. inconvertible types
26. (or[expected
27. unreported exception java.io.IOException; must be caught or declared to be thrown

The above examples show that the compiler-generated error messages are not very specific and are not helpful for novices. Different studies have been conducted to find out the most common errors students/novices face during the java programming [5][6]. The studies showed that the syntax errors dominate run time and logic errors, in novice programs.

Good error messages help programmers to understand the errors easily and also help them to fix the error. Due to poor error messages, students might misunderstand the error message and lead them to make changes in the source code without

understanding the real cause of the error [1][10]. Good error messages act as learning aid for novices [1]. This motivated the authors to design and develop a better debugging tool for novices.

Design and Implementation

There are many factors to consider when designing an IDE for novices. Simplicity is a significant design consideration. Many pedagogical tools that are already available provide customized error messages, which are different from standard error messages [4]. One drawback of this approach is that students find it difficult when they have to deal with the original compiler error messages. Another issue is that, the professional IDEs like Netbeans, Eclipse etc. provide a lot of options. Typically these are not required for a novice programmer [8]. Some of them even provide coding templates, which may not help the students to learn the programming language syntax.

Figure 1 shows the interface a user sees when he/she selects the option File→New Project in the Netbeans IDE. The figure shows the package declaration, the class declaration and the main function that are automatically available when a user creates a new project. For a novice programmer these code templates create a negative impact that may hinder their learning process [8].
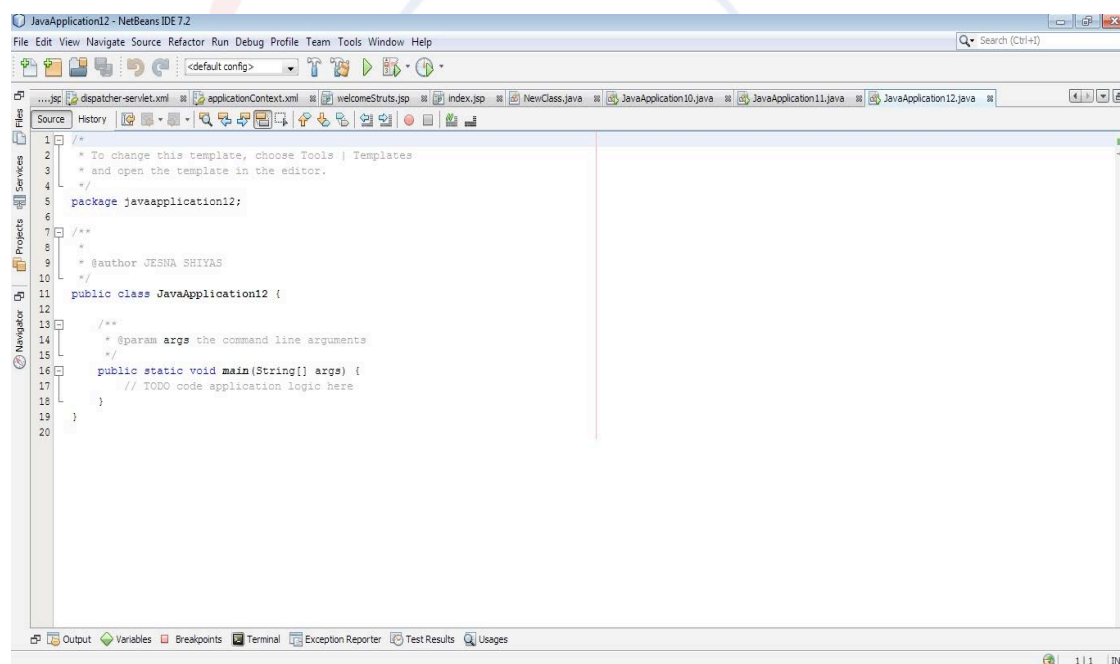
Figure 1: Screenshot1 of NetBeans IDE
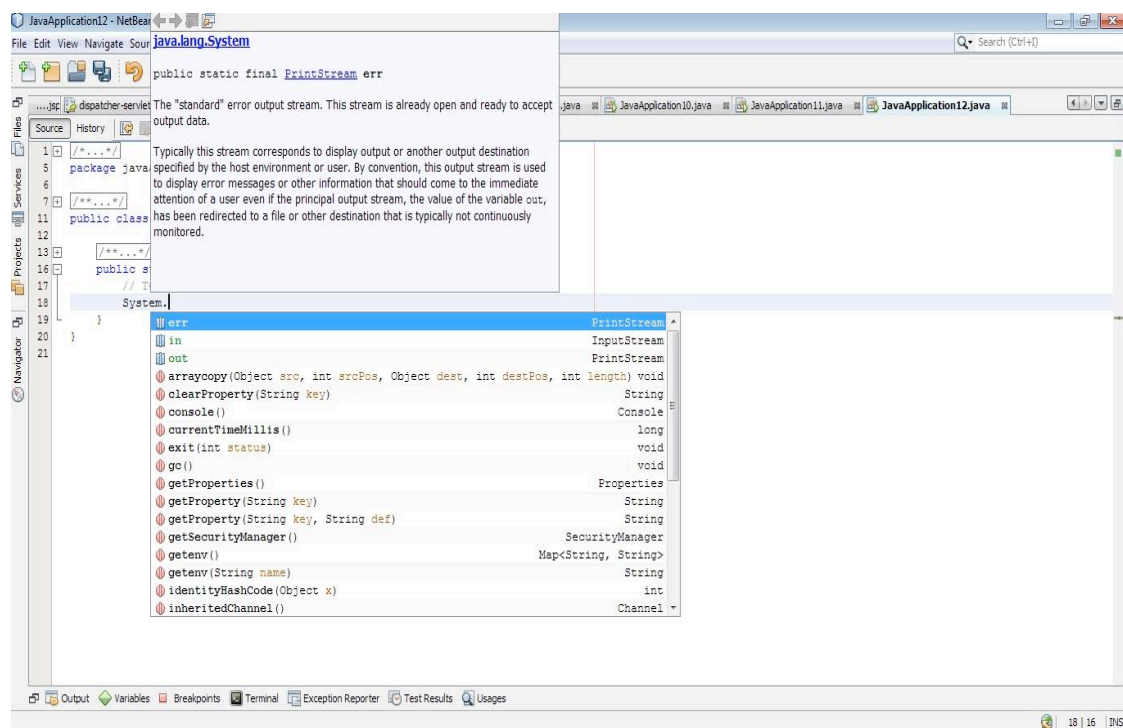
Figure 2: Screenshot2 of NetBeans IDE

Another example is shown in figure 2, which shows the suggestions provided by Netbeans, when a user types a Java program. If the novices use these suggestions blindly then they may not learn to write the program statements themselves. Understanding the syntax and semantics of a language has a central role in the programming language learning process [8]. The code templates and the suggestions provided by the IDEs are extremely useful for professional programmers, but not for novices. These features shall help the professionals to find and correct careless mistakes and develop the applications more quickly [8].

The above facts have been considered in order to design and develop an IDE for novices to do Java programming. The implementation is done using the C#.net. The IDE consists of simple interfaces and menu options to make the learning process easy. There are options for novices to type new programs, to save programs, to open already saved programs, to edit programs, to search a word, to replace a word with another word etc. It uses 'javac' compiler for compilation and a database that stores user-friendly hints for compiler-generated error messages. When a student types a program, the keywords of Java get highlighted. It helps students to check whether they type keywords correctly or not. For each student a separate folder is created in his/her username. So when a student logs in, the programs he/she has already saved will get displayed on the right side panel of the IDE. After typing a Java program, the student can compile the program by clicking on the 'compile' option. If the program contains errors, then the compiler will generate error messages as usual. But, when the student clicks on each error, the corresponding line in the program will get highlighted and a message box will pop up with user-friendly hints for the corresponding error message. If the student is not able to rectify the error with the help of the initial hint, he/she can get the next level of hint. Based on the error, 4 to 5 levels of hints have been provided. The hints will help the novice students to

understand the reasons for the error so that they can easily correct them. The reasons are provided based on the extensive observation of students' experience in the Java programming lab. The error messages and the hints provided in the IDE shall act as a learning aid for novices. On the other hand, if the compilation is successful, the student can run the program through command prompt, which is a panel inside the IDE, as shown in figure 4. The purple color window shows the output of the program.
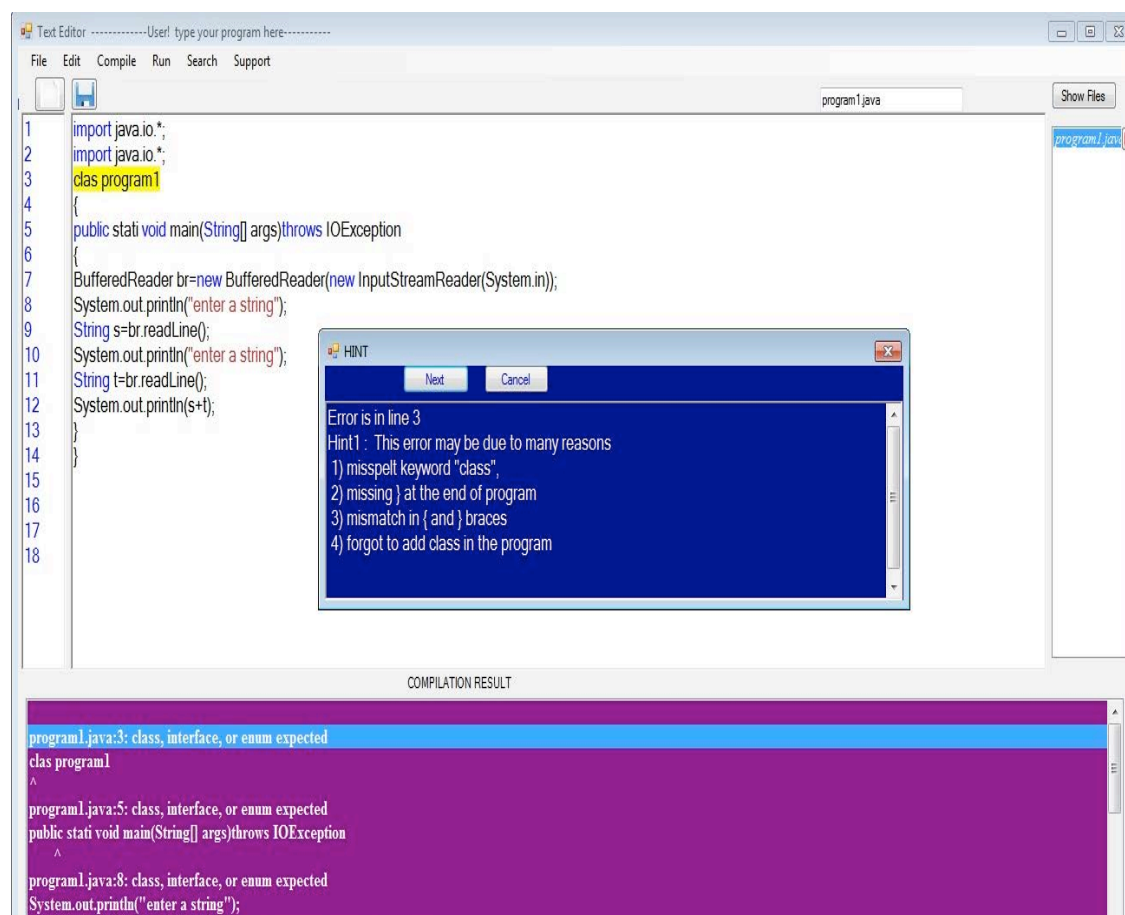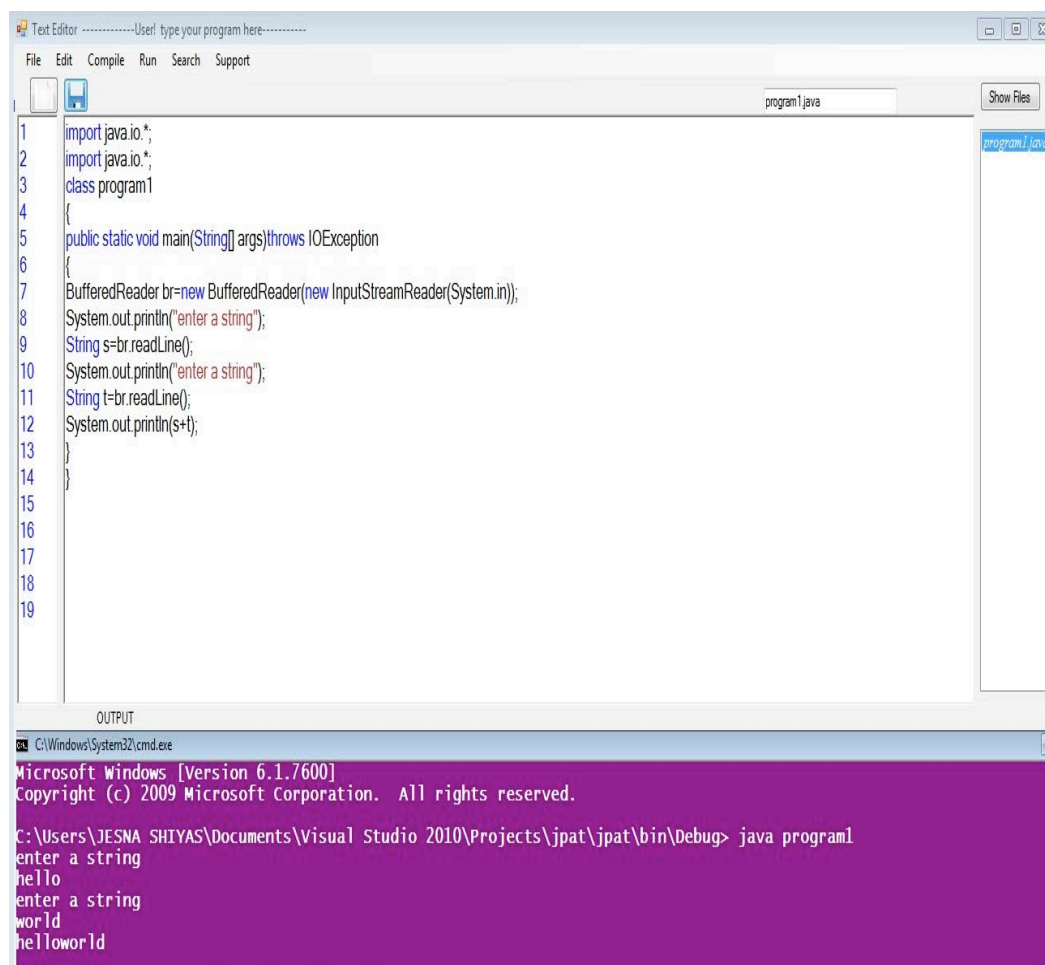
Figure 3: Screenshot of IDE (compiling phase)

Figure 3 shows the IDE interface for the compilation phase. Novices can use them to create, save, edit, compile, debug and run their programs. The yellow color shows the line in which the error occurred. The purple colored area, at the bottom of the IDE shows the original error messages generated by the 'javac' compiler. When a student clicks on each of these error messages, he/she can see the hints, in the blue message box. If the student needs more hints then he/she has to press the Next button in the message box. At the right hand side of the IDE, a list of files already saved by the student is displayed.

In some pedagogical tools, users see only the modified/simplified error messages, instead of the original compiler error messages. But this IDE provides both compiler-generated error messages and additional simple hints to rectify the error.

Figure 4: Screenshot of IDE (running phase)

The IDE also provides help for the various java keywords, as shown in figure 5. The green color window shows the help for the keyword which is selected. The following 53 keywords have been included in this IDE:

1. import, 2. static, 3. class, 4. interface, 5. extends, 6. implements, 7. abstract, 8. assert, 9. Boolean, 10. break, 11. case, 12. catch, 13. const, 14. continue, 15. default, 16. do, 17. double, 18. else, 19. enum, 20. final, 21. finally, 22. float, 23. for, 24. if, 25. instanceof, 26. int, 27. long, 28. native, 29. new, 30. package, 31. private 32.protected, 33. public, 34. return, 35. short, 36. strictfp, 37. super, 38. switch, 39. synchronized, 40. this, 41. throw, 42. throws, 43. transient, 44. try, 45. void, 46. volatile, 47. while, 48. false, 49. null, 50. true, 51. goto, 52. char, 53. byte
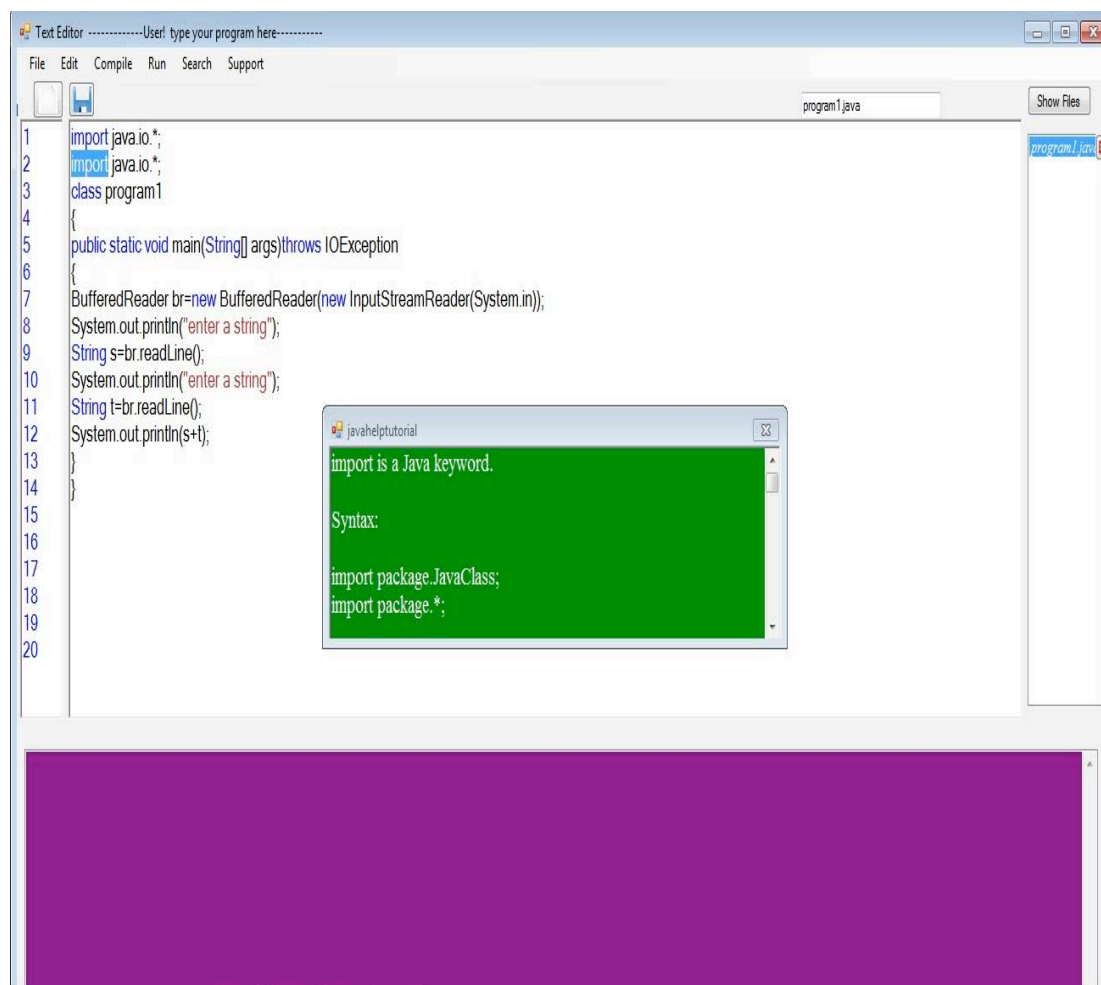
Figure 5: Screenshot of IDE (showing help for the keyword "import").

If the students select a keyword and right click on the mouse button a window pops up with the help for the keyword selected. The help includes, what is the use of the selected keyword, what is the correct syntax of using the keyword, example showing the use of the keyword and a description about the keyword. It helps novices to clear the doubts regarding the keywords used in their Java program.

Figure 6 shows the support the IDE provides for various Java concepts, like polymorphism, inheritance and its types, input/output, and runtime errors. If a student selects inheritance from the list, then a menu with two options will appear which shows what is inheritance and the different types of inheritance in Java. If he/she selects different types of inheritance, then a menu showing single, multiple, multilevel, hierarchical, and hybrid inheritance appears. From the menu if he/she selects 'Hybrid Inheritance', then a window appears with the details of the Hybrid Inheritance, as shown in figure 7.
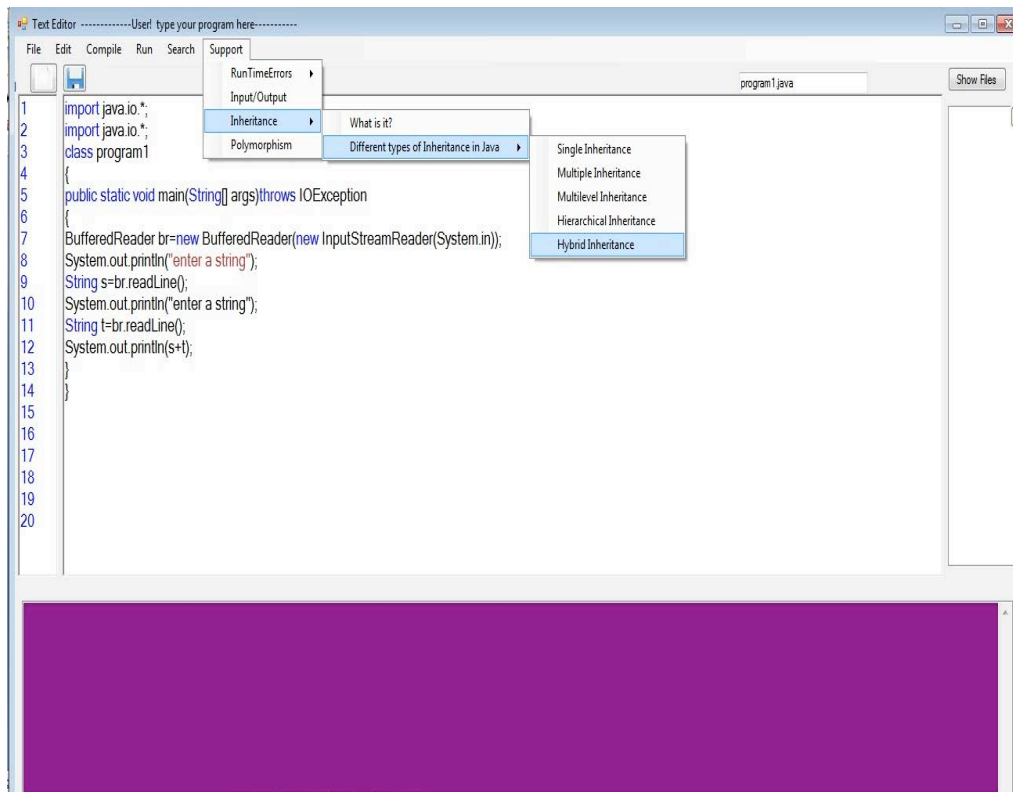
Figure 6: Screenshot of IDE (showing the support option).
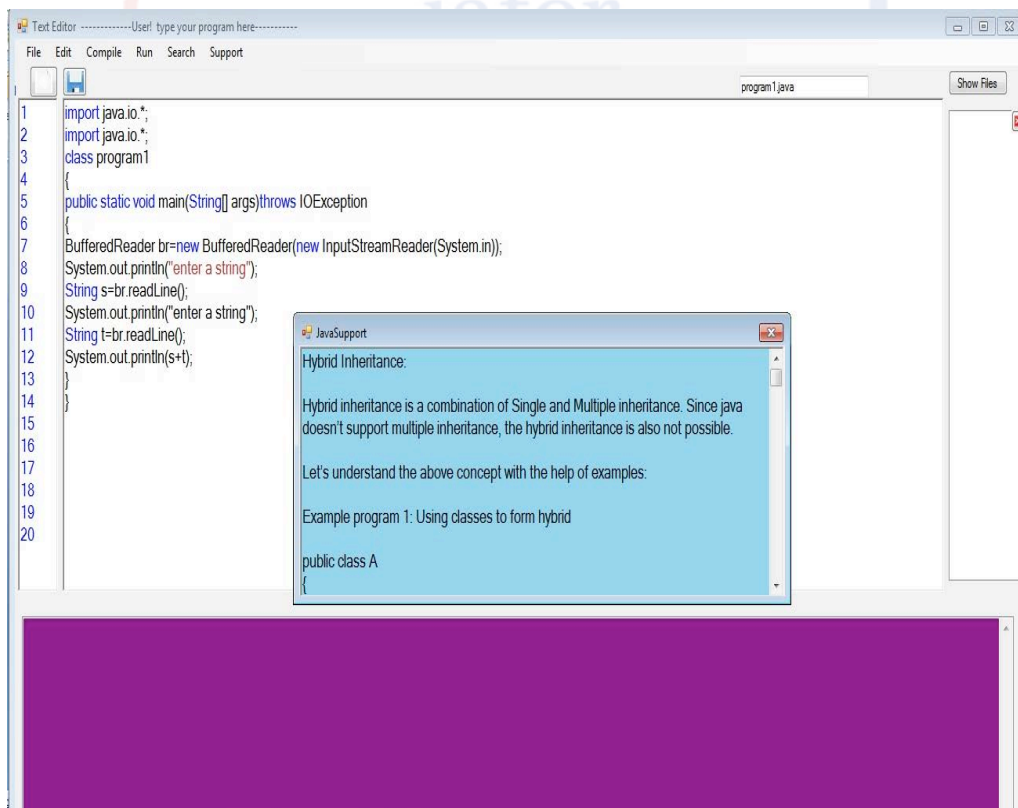
Figure 7: Screenshot of IDE (showing support for Hybrid Inheritance)

An example for the hints for the error message "incompatible types" is shown in Table 1. A database is created to store the error messages and their corresponding hints. Currently it includes 27 common error messages and their hints. The database can be extended with additional error messages when they are encountered.

Table 1. ERROR AND IT HINTS

Error	Hint1	Hint2	Hint3	Hint4
incompatible types	JAVA checks that the type of an expression is compatible with the type of the variable in an assignment statement and this error will result if they are incompatible	This error occurs when there are type issues in your program. It is possible to convert between some kinds of types; for example: you can freely convert a char to an int and vice versa, and you can also convert a double to an int with some typecasting. However, you cannot convert between primitive types and objects such as String.	A variable is being passed a data type that it is not designed to hold. Example: int i = "hello";	Check the return types of any methods you are using. If the message returns an int, for example, make sure that you're not trying to store it in another type of variable, for example String

Result

In order to validate the developed IDE, it has been given to a set of B.Tech 4th semester students in the authors' university. Students were also provided with a feedback form to note down their comments and suggestions about this IDE.

The following are some of the comments from the students:

- Easy to debug errors.
- Much easier to understand and offers better learning experience to beginners.
- Easy to find in which line the error occurs.
- Find and replace options provided help to find out the word easily and to replace the repeated words at the same time.
- Help provided for the java keywords are useful
- Hints provided for error correction is very useful.
- More helpful as it gives us more knowledge about the errors and how to correct them.

These comments warrant a further study about this IDE by allowing more students to use it in the forthcoming semesters.

Conclusion

Understanding the Java compiler error messages is very difficult for a beginner. Hence providing understandable hints to each error message will help novices to recognize the reasons for the errors and to rectify them. This paper discusses the design and implementation of a novice-friendly IDE for java programming. The easily understandable hints provided in the IDE, for the most common javac error messages helped students to overcome the difficulties they experienced before. The comments from a set of students who have used it, confirm the effectiveness of the IDE. The main attraction of this IDE is simplicity. Students can easily use this tool without any training or help.

Acknowledgement

We would like to express our sincere gratitude to the students who have participated in the testing of this IDE.

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Perspectives of the Unseen: Educational Meritocracy and Student Mobility

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1. Context

a) Meritocracy in Singapore

Singapore, an island nation with a about 5.4 million people, classes itself as a meritocratic society with a system that provides equal access and equal opportunity to everyone (Lim, 2013; Moore, 2000; Tremewan, 1994). 'Meritocracy' is widely accepted in educational systems across the world (Saito, 2011). There are many debates surrounding meritocracy, including the proposed ideal benefit of meritocracy which is to provide equal opportunity for everyone regardless of background, wealth and place in society. It is based on the idea that everyone should have the same chance at success as everyone else who has the same level of intelligence, and who puts in equal effort. In general, meritocracy means rewarding an individual based on his or her merits. In the utilitarian perspective, meritocracy is a system which efficiently fits individuals into leadership positions to "maximize the average level of well-being in a society" (Lim, 2013, p. 3) through fierce competition. Those who have made significant contributions to the success of society and economy will receive the great rewards of meritocracy (Bellows, 2009; Krauze and Slomczynski, 1985) which include better educational qualifications and resources, social status, career ranks, better incomes, recognition and prestige (Lim, 2013; Jencks, 1988).

Meritocracy was formally introduced in 1966, just one year after Singapore gained independence. It started with a one-size-fit-all structure (Tremewan, 1994). Most of the schools were brought together under the newly established Ministry of Education for the purpose of integration and unification (Lim, 2002). About 20 years into this system, the government noticed that they were not able to accommodate to the different needs of the students. Dropout rates were high and literacy level was low. In a bid to solve this problem, the government introduced the streaming system under the 'Education for All' policy in 1980 (Lim, 2002). The Education Study Team in Singapore recommended this system to enable students to progress according to their proficiency and academic levels (Singapore Press Holdings, 1998).

b) Revamp of the Education System

In October 2012, the Deputy Prime Minister, Tharman Shanmugaratnam, who is also the former education minister from 2003 – 2008, agreed that more studies can be done on the "fine-grain differentiation" at a young age, and how secondary schools can be made to be more diversified (The Straits Times, 2012). Following this, in November 2012, the Education Minister Heng Swee Keat made an announcement that the Primary School Leaving Examination (PSLE) is undergoing a review. Since then, several changes within the education system have been made.

c) Policies vs. Reality

In spite of the new policies that have been put in place, the effect the system has had on the general society has been deeply ingrained. A large part of what is accepted as the "truth" has been socially construct through decades of policy implementation. The attempts to reverse these "truths", while not futile, do face many challenges.

A simple Google search will show that many websites, forums and blogs, such as http://sg.theasianparent.com and http://www.kiasuparents.com, do an unofficial ranking of schools according to academic achievements. These sites are usually set up by parents and tuition agencies who wish to make use of Singaporean parents'

"kiasu-ness". "Kiasu" is a Hokkien Chinese Dialect word which means "afraid of losing out". The term "kiasu" is synonymous with Singaporeans, who are in general afraid to lose out to anything, and this can be seen in the parents' attitude towards enrolling their children in schools, from pre-school to kindergarten all the way to tertiary levels. This competitive attitude has at times resulted in ugly situations, an outcome of an education system that has been criticised as "elitist".

One such ugly situation showcasing the "elitist" attitude was reported in the local news article (Toh, 2012) "Are Singapore's Parents 'Renting' Their Way to Popular Schools?" It was reported that affluent parents were renting private properties in areas near prestigious schools. This is to ensure their children's placements in these schools. However, it is a phenomenon heavily criticised by many as the average Singaporeans do not have capacity and means to rent another flat or house.

In July 2012, a local Singapore newspaper published an article titled "They just want the best for their kids" (Koh, 2012). The article highlights the extreme lengths parents and family from the less advantaged group will go through to enrol their children in esteemed schools. However, in spite of the tremendous efforts put in by the lower income families, 60% of students in top primary schools live in private properties (Goh, 2012). Private properties are an indication of their high socio-economic status as more than 80% of Singaporeans live in public housing (Housing Development Board Singapore). A study on meritocracy and elite institutions admissions in Britain reports a similar phenomenon whereby while only 40% of the population in Britain is from the advantaged group, they make up 60% of the university's population (Warikoo & Fuhr, 2013). Middle and lower class Singaporean parents believe that by entering these schools, their children will too have a chance of success, and be "upgraded" to a higher class (Koh, 2012). In an interview by the local paper, a certain Mr Goh commented that "it will take some time before the ingrained academic-oriented mind-sets of parents change" (Ng, 2012).

2. Research Focus and Questions

The first phase of the research focuses on participants' perspectives of their experiences and journey in school, correlate them with their life course circumstances now. The aim of this phase is to comprehend participants' understanding of their past experiences and how it has shaped their current opportunities. It studies the interpretation of their current opportunities and how that has shaped their interpretation of their past experiences. Participants were asked for their perspectives on their schooling experiences, their perception of opportunities related to schooling, the opportunity outcome based on "advice" from educators and their family background. Participants were also asked to look forward and give their opinions of their life chances and their aspirations for their children's future. Additionally, the participants were asked if any of their family members, friends, acquaintances and/or educators will be interested to partake in the study.

The second phase of the study focuses on using the data from the first phase and developing different learning approaches for children between the ages of 4 and 7 from underprivileged households. The curriculum and methods of teaching are revised every quarter year, moving from traditional teacher-centered approach to alternative approaches such as cooperative learning and self-evaluation. The students

are observed for changes in their behavior and the success or failure of the approaches. The aim of this phase is to find out how different students react in different environments, and if changes in learning environment have any effect on the students' learning outcomes.

The objective of this study is to examine and understand some of the present day effects of Singapore's 50 years of Lee Kuan Yew's meritocratic educational system via the perspectives of students who were streamed. It also hopes that the findings will shed light and provide answers to the following question:

> After about 50 years of a "meritocratic" system, why does the government find the need to declare that "every school is a good school"? If every school is indeed as good as the other – what are the outcomes of students who come into the schools at different starting points and are there possible alternatives to maximise well-being of the economy, society, as well as, the students?

3. Findings and Discussion

a) Is Every School a Good School?

Schools have a standard curriculum for all students across all levels up to primary 4 (10 years old). However, primary schools which demonstrate strong performance in school based and co-curricular activities are given additional grants to provide a more holistic education for the students through niche programmes and additional skill building activities on top of the normal academic curriculum (Ministry of Education, Singapore, 2005). This has given certain schools an advantage over others as they churn out students with excellent academic and co-curricular activities record (Kiasuparents, 2009) making these schools highly sought after. However, priority placing is given to students who have relatives in the school (Ministry of Education, 2014) which often means that after the first few phases, there rarely is a place for other students who do not have any affiliations to the school. Many of the parents who are non-alumni choose to volunteer their time to the school in a bid to gain admission for their child.

> Researcher: What role do you think social class (wealth), and background of yourself and your parents (family) have played in your educational opportunities and current outcome?
> Interviewee: I managed to enter into a prestigious primary school because my parents volunteered. It definitely made an impact. My primary school has better quality teachers and better facilities.
> (Interview with a 28 years old graduate from Express Stream who succeeded into entering into a reputable junior college and subsequently the prestigious National University of Singapore.)

In a move to increase the diversity in these highly reputable and popular schools, the Ministry of Education has announced that they will ensure that there are at least 40 places left for Phase 2C onwards (Today, 2013).

Aside from the primary one admissions exercise, the streaming exercise for 12 years old primary school students, also known as Primary School Leaving Examination (PSLE), has drawn much criticism. One of the point of concerns is that it is causing the lack of student diversity in secondary schools (Chew & Davie, 2012) as it places students into one of the four streams (Special, Express, Normal Academic and Normal

Technical) and into a particular secondary school. The stream of the students, and the ranking and reputation of the school pave the way for future outcomes.

Admission to reputable schools puts students in an advantageous position with better future prospects. Most of the prestigious schools do not admit students from the lower streams and cater solely to the Special and Express streams students. Some critics like Lim (2013) have labelled these moves as socio-political and elitist. News media reports in Singapore have described how it is "well- known" amongst the locals that those who end up in prestigious tertiary institutions are "top" students from "good schools" (higher ranked schools). A majority of these prestigious schools only take in the high ability students from the top stream, and even within this pool, they may only accept a student based on academic excellence or excellence in co-curricular activities such as sports or performing arts.

> Interviewee: Let's say you are from Broadrick (a lower status neighbourhood school) and I see someone from Raffles (the top elite school in Singapore), they will be like… their nose up in the air so high.
> (Interview with a 28 year graduate from Express stream)

Students who are streamed into the lower streams are often considered "not good enough" and thus have to be segregated into lower status "neighbourhood schools" with other students who are similar to them (Lim, 2013; Ng, 2004, 2009). They are likely to end up in vocational or technical institutions or worse still, discontinue their studies (Koh, 2012).

> Researcher: Okay now that you have left school right, tell me more about what happened after? Like experiences in trying to find a job. You are currently still trying to find a new job right? And you are sending out job applications and so on. So what are your experiences?
> Interviewee: I can say it's really hard. After N.S. I got a job then basically just freelance part time and then I realise that *nak cari susah gila, susah gila* (it's really really difficult! Crazy difficult!). Even though I have an ITE cert but my ITE cert is not in demand. So *kerja* (work), and then I got my current job.
> Researcher: How?
> Interviewee: I just sent application and then they interviewed me and I got the job.
> Researcher: Does your current job have anything to do with your ITE cert?
> Interviewee: No. So *dah dapat kerja* (I got a job) and then currently right now I want to find a new job. I just find that education is important. Because before that I try to find a job but my resume is like shit actually. Education is really important.
> (Interview conducted with a 27 year old graduate from the Normal Technical Stream)

Both streaming and subject based banding have been criticized for "grouping" and "labelling" students, and limiting their learning capacity (Abadzi, 1984, 1985; Callahan, 2005; Gamoran, 1992; Horn et. al, 2006; Lucas, 2001; Mickelson, 2003; Ng, 2004; Ono, 2001; Worthy, 2010). There are possible negative impacts such as isolation of students who are not able to perform academically well. These students may be labelled as "slower" than the rest and viewed as "failures" without taking into consideration other debilitating factors such as environment and background.

> Interviewee: … we were streamed according to how well we did by our marks. Express, Normal Acad (Academic) and Technical and mainly there was a… how do you call it… ah grouping. So like Express don't mix with Normal Tech but we can mix with Academic. And Technical you can't speak to them at all like you know… way below you. Hahaha. You speak to them you are like… loser!
> (Interview with a 28 year old graduate from the Express Stream)

Mr. Pushparani Nadarajah, the vice-principal of a low ranking school in Singapore, responded to the discussions of making every school a good school at the with, "How many of our leaders and top officers who say that every school is a good school put their children in ordinary schools near their home? (Only) until they actually do so are parents going to buy (it),"(Ang, 21st November 2013). Mr. Nadarajah made an important observation of the current status quo situation in Singapore, and his concerns are valid. While the government is trying to sell the idea that all schools are the same and are equally "good", the actions of some government officials suggest otherwise.

b) Meritocracy and Educational Capital
Though various themes have emerged from the data collected, there is a strong relationship between the meritocratic educational system and financial inequality, and how the cycle "repeats" itself. An interview with the aunt of 3 underprivileged children shed some light on the lack of awareness of underprivileged parents. The participant, Mia (names have been changed to protect identity), 22, mentioned that her sister, 29, has never brought her children to library, neither does she know that reading to and with her children is important for their literacy and cognitive development.

> Interviewee: I think even if she (interviewee's sister) goes to the library, she wouldn't know what to look for and how to navigate around the library. So she just uses the Ipad and they learn from there. She really doesn't know.
> (22 year old interviewee who graduated from the Normal Technical Stream and comes from an underprivileged background)

Prior to this statement, Mia mentioned how she herself was not able to read until she reached the age of 8. By then, she was already in Primary 2, the second year of compulsory education. Looking back retrospectively, she stated that her lack of English literacy skills affected her other subjects such as Maths and Science. Mia, who was then streamed into the Normal Technical stream, understood that with five children, her parents did not have the financial capacity to send her for enrichment classes.

In spite of various challenges that she went through, Mia managed to score really well in her Normal Technical examinations. However, due to the stream that she was in, she was still channelled to an Institute of Technical Education. With her determination to help her parents, Mia received a perfect GPA and landed a place in a local polytechnic where she was in the Director's list for the whole 3 academic years and graduated with accolades. However, Mia feels that she severely lacks in many areas of general knowledge. Looking back to her secondary school years, she realised that she was not given the opportunity to understand history, geography and other humanities subjects. This has caused her not to have skills in certain areas such as

critical thinking and analysis. Recently scouted due to her excellent expertise in design, Mia conceded that without determination and motivation to "break the cycle of poverty", she would have ended up like her siblings or her peers.

When probed further, Mia explained that many of her peers had "bad attitude" and did not find the need to "excel" in their studies. Her peers usually had other problems, family and financial being the most pertinent ones. While Mia might be a success story of meritocracy, her last statement gives an overall view of the reality for many students in the lower stream. Mia is an exception. This interview has given a better understanding of the lives of the underprivileged children and the lack of opportunities to engage in educational development. In a meritocratic educational system where all children start compulsory education at the age of 7, it then brings to question the fair chances of underprivileged children "competing in the race" when their starting line is further behind.

c)   Meritocracy, Eugenics and Social Class Replication

In his book, Hard Truths to Keep Singapore Going (Lee, 2011), the late Lee Kuan Yew, first prime minister of Singapore said:

> There are many sons of doctors who have married doctors. Those who married spouses who are not as bright are tearing their hair out because their children can't make it. I have lived long enough to see all this play out. So when the graduate man does not want to marry a graduate woman, I tell him he's a fool, stupid. You marry a non-graduate, you're going to have problems, some children bright, some not bright. You'll be tearing your hair out. you can't miss. It's like two dice. One is Jack, Queen, King, Ace, other also Jack, Queen, King, Ace. You throw a Jack, Queen, King, Ace against dice two, three, four, five, six, what do you get? You can't get high pairs, let alone a full flush. (Lee, 2011)

The late Prime Minister Lee Kuan Yew is an English educated Chinese man - in a country where the spoken languages of the masses were Malay and Chinese (Mandarin and dialects). Policies and measures introduced during this period and the period following the nation's independence ensure that an individual's social position was determined by his or her grasp of the English language (Tremewan, 1994). English was then the language of the upper class Chinese and Indians. The replication of the Chinese/Malay/Tamil-speaking industrial working class, formation of an English-speaking capitalist class, and eventually, the introduction of a "meritocratic" education system that was in favour of the English language, created class divisions, wealth gap and division that are continuously growing (Tremewan, 1994).

The government managed to bring most schools under state control (Tremewan, 1994), while schools that still insist on a religious or racial base curriculum, such as madrasahs, are cut off or receive minimal funding and support from government. The exception being the Special Assisted Plan (SAP) schools which catered to the Chinese which are still funded under the Ministry of Education.

Critics of the Special Assisted Plan (SAP) schools have warned of ethnic and social segregation. Students from SAP schools might not be able to connect with those from other races. Even within their own racial group, they will not be able to connect with those who are considered non-elites (Lim, 2013). This segregation has already been

reported in local news articles such as Top schools' students tend to have friends like themselves: Poll (Yong & Zaccheus, 2012) and PSLE the cause of lacking student diversity (Davie & Chew, 2012).

Good schools have better facilities, better teachers, better teaching methodologies etc. and most importantly, good schools have proven track records of academic achievements and carry with it a reputable name (Kiasuparents, 2009; Ng, 2009). These give students from these schools an unfair advantage, leaving behind their peers who didn't meet the standards required. In a survey done by a local Singapore newspaper, it has been discovered that most students from highly reputable schools are inclined to have friends similar to themselves i.e. they are most likely to be of the same race, from the same academic stream and similar socio-economic background (Yong and Zaccheus, 2012). This then brings us to this question: "Is the meritocratic education system a system based on eugenics' beliefs?"

In a related observation, students' in advantaged positions observed positive post-secondary school behaviours such as involvement in various activities such as politics, and the positions they hold in organizations indicate that they have higher self-esteem and confidence due to the skills and knowledge they gained through additional activities and the environment in the school (Jerrim et al. 2012). These contribute to their success later in life (Jerrim et al., 2012).

> Interviewee: Maybe they shouldn't differentiate like better one is here… as in the bad one and the good one.
> Researcher: Do you feel that it actually groups people into… when they grow older at work, do you think it actually group people into more *atas* (elite) people and so on?
> Interviewee: Yes. Because they will think wah… this one Normal Tech. Maybe don't want to mix around with them, something like that, because "I'm Express"… ya. So once they out from school right, maybe somehow will affect them lah.
>
> Researcher: So it's the mind-set. So this mind-set… do you think it (can be seen in) a lot (of) Singaporeans?
> Interviewee: Ya actually yes.
> Researcher: So and it started from school?
> Interviewee: Ya.
> (Interview conducted with a 29 year old graduate from the Normal Academic Stream)

As highlighted by the participant above, academic grouping in Singapore leads to future segregation in adulthood. The participant's views are not unique. Another participant who was from the Express stream mentioned that the "Express students do not mix around with those from the Normal Stream" for fear of being branded a loser, whereas a participant who was from the lowest stream, the Normal Technical stream, mentioned that while he looked up and admired the students from the Express stream for their discipline in school, he did not consider making friends with them.

d) Meritocracy and Deficit Thinking
A majority of the participants in the research group mentioned "self-responsibility" when asked about lack of achievements with regards to outcomes. The demographics

of the participants are mostly lower middle income to low income households. None of the participants cited the system, their circumstances or their peers as a contributing factor to their lack of achievement. There is a strong sense of personal responsibility and pride, and the refusal to seek external help is in line with the recent research findings on low income Malay households in Singapore (Brassard, 2015; Mathews, 2015). It also highlights the value of "self-reliance" that the Singapore government has emphasised since independence. Singapore is non-welfare country and there are various self-help organisations in line with the ideals of "meritocracy". Most of the autonomous or independent self-help organisations are set up and segregated according to racial and/or religious groups (Tremewan, 1994) while the government has a few in place such as the Family Service Centre, and the most recent one being the Social Service Office (MSF, 2014).

Meritocracy focuses on individualistic features such as effort, merit and competence without taking into account social factors such as environment and culture. An educational system based on the ideals of meritocracy favours students whose micro environment matches well with the system (Bourdieu, 1990). The system itself is controlled by the dominant group who determines what is valuable and what is not, discarding any that they feel is not in line with their beliefs and agenda (Ratner, 2000; Valencia & Black, 2002; Applebaum, 2005). Their views are accepted as standard and impartial (Luke, 2005).

This has resulted in "deficit thinking" whereby the system holds the individual responsible for his own outcome and that the system is not to be blamed (Valencia, 2010; Yosso, 2005). Social and ethnic inequalities are justified through the principle of meritocracy (Augoushnos et al, 2005; Fassetiwarren, 2007; Hirtt et. al. 2007). In schools, teachers are expected to curtail the effects of socio-ethnic inequalities, while focusing on the individuals' fundamental characteristics.

Deficit thinking has then led to systemic bias whereby any individuals or groups whose environment, beliefs, circumstances and values are not aligned with the system are viewed as "abnormal". One of the resulting consequence of this is cultural and ethnic bias which influences actions and performances of those in the minority groups, leading to "internalized racism" or "internalized discrimination". Some members of the group legitimize these representations to some extent and act upon them as they believe that this is "who they are".

> Researcher: So you say you looked up to the express students. Why didn't you be like them? I mean you saw them. They were in the same school as you. Why didn't you be like them since you looked up to them? Or follow their lead. Yeah that's more like it. Follow their lead.
> Interviewee: Because I think I can't be like them because they are like too smart for me. So during that time I just be me lah and enjoy. Peer pressure… peer pressure ah. I mean the gangs I hang out with. I don't usually hang out with express students. Yah.
> (Interview with a 27 year old graduate from the Normal Technical Stream)

Various evidence from current literature has supported this theory. Many low income households also tend to have at least a member of the household who is of working age but unemployed and/or have been or are incarcerated (Brassard, 2015; Mathews, 2015). Many of the youths and children in the household have also been reported to

have behavioural problems, both at home and in school. A majority of the participants from the lower stream and/or who were from neighbourhood schools (lower ranked, non-elite schools) revealed that their immediate peers in school had behavioural problems too, and while none of their peers was the "head", everyone acted in the same negative manner.

What is even more disenfranchising for minorities facing systemic bias, is the view they have of others in the same racial group as them who did not manage to break out of the cycle. This is highlighted in the following interview with one of the participants, who is also Malay and was himself from one of the lower streams.

> Researcher: Do you think being a Malay has affected you in any way in school especially? In terms of your opportunity?
> Interviewee: Okay. Actually… sorry to say this eh. But I don't like Malays. Haha.
> Researcher: Why do you not like Malays?
> Interviewee: Why I don't like Malay? Just (that) Malays like to pick on others. They like to pick on others while they themselves are lazy. Haha. Ya. So like...
> Researcher: Do you think society has this perception that a lot of Malays are actually lazy?
> Interviewee: Not all. Ya.
> Researcher: So a number of them *lah*?
> Interviewee: A number of them
> (Interview with a 29 year old graduate from the Normal Technical Stream)

Former Prime Minister Goh Chok Tong justified the growing wealth gap, social class divisions and inadequate rewards as necessary means to an end – the end being a successful economy. He argued that they serve as incentives to motivate people to give their best in terms of contribution to the economy. Those who are not well paid should not be resentful of those who earn more, after all high wages are the "big prizes in the free market" (Kang, 2005, p. 3). Singaporeans have come to accept this as being a part of life in Singapore.

e)   Towards Equity
The second phase of this study gave birth to a non-profit organisation, Literacy Initiative For Equity (LIFE) SG, which is spearheaded by this researcher. LIFE reaches out to pockets of society that established organisations may have missed out and focuses on underprivileged pre-school and early primary school children. Through extensive networking and intensive groundwork, this researcher and her team have learnt more about the needs of these families. It is discovered that most of their children of all ages have lower literacy levels than expected as compared to their peers of the age group.

LIFE introduces different approaches to learning (Figure 2). While the programme started on a traditional teacher-centered approach for the purpose of having a control set of data, the students were introduced to various approaches such as active learning, cooperative learning and self-evaluation. The dynamic and holistic programme includes a variety of activities such as speech and drama, arts and design, sport activities, teambuilding activities, and excursions. The aim of these activities is to ensure that the children have a positive attitude towards education, and help them learn ways to channel negative emotions and energy in a healthy and fun manner.

The activities have been carefully thought out to complement whatever they may have learned in kindergarten. The belief is that by focusing on the children's essential needs and engaging these needs through healthy and fun activities, it would further develop their cognitive abilities and social skills. Students are observed, and results are recorded (Figure 1). This phase hopes to find ways to help children who are usually left behind, to achieve a fair chance at success, believe in their abilities, and have confidence to take on the world. LIFE has a strong desire to transform not only the lives of the children and the parents, but the mind set of society towards poverty and those experiencing it.

Level	Approach & Activities	Observed Results
1	Traditional Teacher centred approach ➢ students sit and write, listen to stories, memorise alphabets ➢ 75% "low-key" activities – sit and study, not learn ➢ "high-key" activities (e.g. Martial Arts or Art and Design) only once in a month	➢ High Absentee and Dropout rate ➢ Behavioural problems ➢ Not engaged and motivated except during high key activities
2	Incorporation of Kinaesthetic Activities and Active Learning ➢ Move towards student centred approach ➢ High key activities embedded across all the lessons ➢ Students are taught through "play" and hands on activities ➢ Group work	➢ Students more motivated and engaged ➢ Higher attention rate ➢ Less behavioural problems ➢ Higher attendance rate
3	Introduction of "Dynamic & Phenomenal" Education ➢ Kinesthetic activities still embedded ➢ Some aspects cooperative learning introduced ➢ Values and social emotional skills are embedded into lessons ➢ Given responsibilities and roles ➢ Phenomenal education - students do not learn through subjects, they learn through a topic where different skills and subjects are incorporated within the particular topic	➢ Attendance stabilised - Students look forward to coming to class ➢ Parents formed a community ➢ Improved behaviour - better able to understand the consequences of their action ➢ Increased motivation and engagement – no longer hiding ➢ Displayed initiative, e.g. leading in performances and training other students ➢ Students displayed care and concerns for others, e.g. helping other students, motivating other students, helping teachers, etc.
4	Introduce Self-evaluation and Cooperative Learning (upcoming) ➢ Students to assess their own learning and behaviour ➢ Full aspects of cooperative learning ➢ Ongoing assessment and improvement	(Upcoming)

Figure 1

4. Conclusion: Changing the Narrative

Studies reveal that the egalitarian idea of "equality of opportunity" behind the theory of meritocracy remains an ideal rather than the normal practice (Goldthorpe, 2003; Lim, 2013). Equality does not translate to equity. Social class, cultural and educational capital, family background etc. may give some students an advantage over others but the extent of actual social mobility is questionable. Students from advantaged backgrounds have better access to educational and cultural resources which give them a head start (Berliner, 2013; Lim, 2013). This puts them ahead of the "race" even before it begins, therefore, displacing the classless idea of meritocracy (Berliner, 2013; Feinstein, 2002, 2003, 2004; Feinstein, Duckworth & Sabates, 2008; Lim, 2013). Thus, it seems that the notion of meritocracy has been used to mask a system of "reproduction" (Young, 1958). Social class and hierarchy are replicated, and inequality is maintained through the justifications and supposed success stories of "meritocracy" (Warikoo & Fuhr, 2013; Young, 1958).

According to the Economist Intelligence Unit, Singapore is the world's sixth most expensive city and has the highest number of millionaires per capita than any other country in the world. However, behind the rich and glamourous infrastructure lies an unfortunate truth that will put this high Gross Domestic Output (GDP) nation to shame. Singapore also has one of the biggest wealth gaps amongst developed nations.

The Ministry of Social and Family Development refuses to establish a national poverty line and unlike many western nations, Singapore does not have a welfare system, citing reasons such as "tailoring… depending on their needs and circumstances" (MSF, 2011). Although poverty is not something one can blatantly see in Singapore, it is estimated that 26% of Singaporeans are considered to be living under the poverty line. Efforts by the government have proven to have minimal impact due to globalisation and the high influx of foreign labour which has caused income to stagnate. Aside from that, the general society in Singapore has accepted meritocracy as a way of life, and a mind-set change would take a long time to come into effect.

> Researcher: What do you think society thinks success and failure is?
> Interviewee: I think they perceive success as someone having a degree. Right now… Last time it was Diploma. Now it's Degree. And failure is like ITE. But I know the Ministry of Education is doing something to change that ITE perspective but it's not really helping at all. Haha.
> Researcher: Is it… Do you think it's because of the years of…
> Interviewee: Brainwashing. Ya.
> (Interview with a 28 years old graduate from the Express Stream who entered Institute of Technical Education)

Nominated Member of Parliament, Laurence Lien, mentioned in an interview with BBC (2014) that Singapore's national identity is part of the reason why Singapore is resistant to social changes.

> "This society has been founded on the basis of meritocracy… if you have been successful, it's because of your own efforts, if you're not, it's your fault," he said.
>
> "But we need to change that narrative because people have got different opportunities and different conditions that could impede their ability to move out of that poverty trap."

The government has announced changes, policies and reviews to help more Singaporeans in need such as the Kindergarten Financial Assistance Scheme (MSF, 2014) and review of high stakes testing and streaming. However, provision of welfare assistance is not readily accepted by society as it is seen as destabilizing the work ethos Singapore prides itself for, which may in turn affect the economic success the nation has managed to garner in a short period of time (BBC, 2014).

> "It's an abiding fear of becoming enervated by a poor work ethos where welfare becomes a crutch." (Eugene Tan in an interview with BBC, 2014)

The changes will take time as proper consideration and in depth research needs to be done due to the complication of balancing the economic needs of Singapore, the humanitarian needs and rights of every person, and the mind-set change that is required from the general society. Research studies have shown the harm inequality has on youth and society such as school and housing segregation; racial segregation; social mobility; imprisonment rates; drug use; and mental illness (Berliner, 2013) thus, it is imperative for the government to implement more inclusive and compassionate policies to ensure that Singapore remains harmonious and socially cohesive.

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Deixis in the Language of Nursing

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The IAFOR International Conference on Education – Dubai 2016
Official Conference Proceedings

Abstract

This paper outlines semantic and pragmatic phenomenon which is called "Deixis". Deixis is a technical term (from Greek) for one of the most basic things we do with utterances. It means 'pointing' via language and the linguistic form is called a deictic expression. (Yule 1996: 9). Deictic expressions, such as 'this, that, here, there' are typically used for information and even for education in relation to the indexical ground of utterance context.

In order to determine the conventional meanings of deictics in language, deictic expressions will be analysed in certain English nursing texts and what influences they may have on the interpretation of the texts. Deictic expressions in English nursing texts depend on the contents and the formulations of nursing texts.

This paper will focus on the use of deixis in nursing texts. By analysing the deictic expressions in a number of case sudies taking from a nursing book called "Communication for Nurses" (2009), it will show how these pragmatic features are used in relation to different contexts. That is to say, how the expressions may be used in a way, where their reference is determined in relation to the point of the origin of the utterance in which they occur.

Keywords: Pragmatics, Deixis, Language of Nursing.

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The Notion of Pragmatics
Pragmatics is the study of the relationship between linguistic forms and their users. According to Levinson (1983: 3) pragmatics is the study of the relationship between language and the context, which is a basis in understanding the meaning of language. Referring to the statements, pragmatics is the study of the aspect of the relationship between language and context that are relevant to the writing of grammar (i.e. it deals with language use and the relationship between language form and language usage.
Kreidler (1998: 18) states that pragmatics is another branch of linguistics that is concerned with meaning. While Peccei (1999: 5) and Yule (1996: 5) state that pragmatics concentrates on the aspect of meaning that could not be predicted by linguistic knowledge alone and take into account our knowledge about the physical and social world. The focus of pragmatic analysis is on the meaning of words or sentence. The theory of deixis is part of pragmatics and part of what have been called linguistic performance.

From the definitions above, it is concluded that pragmatics is the study of meaning conveyed by the speaker or writer and interpreted by listener or reader. From the speaker view, pragmatics is an analysis of meaning of the speaker utterance rather than the meaning of a word or phrase that is used themselves. From the contextual point of view, pragmatics is the interpretation of the meaning of a person in a particular context and the influence of context to his or her statement. So, pragmatics is an approach used to explore the way of listener to infer an utterance that is uttered by the speaker in order to arrive at an interpretation of the speaker's intended meaning.

The Concept of Deixis
In all languages there are many words and expressions whose reference relies entirely on the circumstances of the utterance and can only be understood in the light of these circumstances. The phenomenon of deixis is considered the most obvious and direct linguistic reflection of the relationship between language and context. (Levinson 1983: 54). This phenomenon of deixis constitutes the singlemost obvious way in which the relationship between language and context is reflected in the structure of languages themselves.

The term " Deixis" originates in the notion of gestural reference: that is, in the identification of the referent by means of some bodily gesture on the part of the speaker. (Deixis means "pointing" or "showing" in Greek). (Lyons 1995: 303 and Verschuren 1999: 18).

The most primitive way of referring to something is to point to it. Of course, this kind of reference can only be accomplished with people and concrete things in one's immediate environment. Some words actually point to the entity that they refer to. If the referring expression points to the referent in the context, it is known as deixis. Therefore, deixis means reference to different things and different people. (Kreider 1998: 144, Cruse 2000: 319, and Cutting 2002: 7).

Deixis has a referring function where the context is important. It deals with the words and expressions whose reference relies entirely on the circumstances of the utterance. For that reason these special expressions and their meaning in discourse can only be understood in the light of these circumstances. Deixis is the linguistic property which

forges the link between a sentence or utterance, and its context. (Thornborrow and Wareing 1998: 197). Any linguistic form used to accomplish "pointing" is called a *deictic expression*. (also known *indexicals)*.

Deictic Expressions

Deixis appears to be best accounted for in pragmatics. Within pragmatics, deixis concerns the use of certain linguistic expressions, called *deictic expressions*. Deictic expressions are meaningful contextually as the speaker and listner have to share the same context. Speakers and writers use deictic expressions to situate their words or their texts within a particular context, and the meaning of these expressions can not be fully recovered from the text itself, but from contextual elements outside the text.

In English, such deictic expressions typically include first, second, and third person pronouns, demonstratives, tense, certain place and time adverbials and some verbs such as, "come, go, bring, take, and fetch". Such deictic expressions encode specific aspects of the speech event and can not be interpreted unless contextual parameters are taken into account. (Marmaridou 2000: 65 and Grundy 2000: 272).

Deictic expression is one that has an indexical use, that is, a literal use to refer to something in virtue of its relation to the actual physical utterance.

In other words, deictic expressions pick out their referents like pointers, that is, in virtue of some relation to the context of utterance. They are unlike names, which are given to persons, places, and things, and unlike definite descriptions (the+ noun), which refer by describing their referents.

Finally, deictic expressions are slots, place –holders for referring expressions which in turn are provided by the context, that is by the situation, previous discourse, and pointing.

Kinds of Deixis

Deixis is the reflection of the situational knowledge in the words and grammar of a language. Culture often plays a significant role in specifying the types of deixis available within a language.

In English, Deixis makes considerable use of pro- forms, such as pronouns, but it can also make deictic use of certain syntactic categories. The categories of deixis in all languages are *person deixis*, *place deixis*, and *time deixis.* These clearly relate to the discourse participants and to the setting. (Chimombo and Roseberry 1998: 106). Levinson (1983: 62) identified five major types of deictic markers: *person deixis, place deixis, time deixis, discourse deixis, and social deixis*.

Person Deixis

Person Deixis means the use of expressions to point to a person, with the personal pronouns "*I, you*, *he, she, it, we,* and *they*". e.g.

> *We* are not assumed.
> So *you* went to Arram.
> *We* got back.
> *They* were like this.
> *He* feels so weak and ill. (Cutting 2002: 7)

In other words, person deixis involves basically the speaker, known as the *first person*, the addressee, known as the *second person*, and other significant participants in the speech situation, neither speaker nor hearer these are known as *third person*. There is a kind of dominance relation holding among the terms: first person dominates second and third, and second person dominates third (Cruse 2000: 319- 20).

Pronouns

- Grammatical category of a person: Personal pronouns.
- All languages have personal pronouns or at least words, that refer to the participants of the speech act.
- The pronouns of the first (I, my, mine) and second person (you, your, yours) are deictic:
- Reference to the speaking person.
- It is also possible to have deictic pronouns for the third person.
- Definite and specific pronouns: *this, that, those, these.*
- Indefinite and specific pronouns: *somebody, something, who, that, what.*
- Indefinite and non- specific pronouns: *someone, something, nobody, nothing.*
- Honorofics: *your majesty, sir.*

Spatial/ Place/ Space Deixis

Spatial deixis is words used to point to a location, the place where an entity is in the context, as in the form of demonstrative adverbs, "There", "Here", and demonstrative determiners and adjectives such as "This, that, these, those".

> (1) They were like *this*.
> (2) *That* was great.

In other words, *Place deixis* concerns the locations relative to points in the speech event (speaker= center). There are two basic ways referring to objects: by describing or naming them and by locating them. Locations can be specified relative to other objects:

 (1) The station is *two hundred yards from   the college*.

 Locations can be specified relative to the location of participants:
(1) It's *two hundreds yards away*.

English has a relatively impoverished spatial deictic system, with only two terms, usually labelled *proximal* and *distal*.
The proximal term *here* means something like "region relatively close to the speaker", and *there* means "relatively distant from the speaker". *Here* may represent an area less than the sequare metre on which the speaker is standing, or it could be something much vaster, such as:

(1) *Here* in our local galaxy cluster
(Cruse 2000: 320- 1 and Cutting 2002: 8).

In other words, place deixis stems from two facts: *first*, given egocentricity of dexis in general, a speaker is an entity in space and, as such, his utterances are produced in that space. Thus, participants roles, their social identification and their construction in and through discourse are inscribed in space. *Second,* to the extent that the speaker's

location may be different at different times, place deixis automatically incorporates a temporal aspect of the speech event. The importance of space in utterances is made obvious by the ways in which languages refer to objects: either by naming or describing them, or by locating them in space.

There is an obvious parallelism between *time deixis* and *place deixis*. In the same way that "*now*" and "*then*" may be paraphrased as *at this time* and *at that time* respectively, "*here*" and "*there*" may be paraphrased as *at this place* and *at that place*, respectively. Hence, *this* and *that*, which are primarily construed as place deictic terms, in that they typically express *proximity to*, or *distance from*, the speaker, can also be used to indicate time deixis: a temporal span including or excluding coding time.

Place deixis is relational rather than absolute. Rather than specifying the location of objects or places in terms of latitude and longitude absolute measures, we locate them in terms of each other and the speaker, as in (1) and (2) below:
> (1) The post office is two kilometres from the school.
> (2) The post office is 500 metres away.

The understanding of (2) crucially involves the location of the speaker at coding time. In the same way, the time deictics "*now*" and "*then*" may make reference to exact points of the timescale or longer time spans, the deictics "*here*" and "*there*" may refer to specific points by the location of the speaker or away from her, or pragmatically specified space that includes, or does not include, the location of the speaker at coding time verbs "*go*" and "*come*" are also categorized as place deixis. The verb "*come*" as movement close to the location of speaker and verb "*go*" as movement away to the location of speaker.

Based on the definition above, place deixis is the words which refer to the location of speech events, and deal with the distance either proximal or distal of speaker's location.

Temporal/ Time Deixis

Temporal deictics function to locate points or intervals on the time axis, using the moment of utterance as a reference point. Time deixis makes reference to the ways participants of particular cultures conceptualize and measure time (Marmaridou 2000: 82). There are thus three major divisions of time axis: (1) before the moment of utterance, (2) at the time of utterance, (3) after the time of utterance. The most basic temporal deictics in English are *now* and *then*.

The most basic expressions in encoding time deixis in English are the adverbs "*now*" and "*then*", also "*soon*" and "*recently*" and verb tenses. When time deixis interacts with calendrical units of time, words like "*today*", "*tomorrow*" and "*yesterday*" are used to locate an utterance relative to time. However, the use of these terms is flexible in that it can indicate the entire time span specified or just a relevant part of it, as in the following examples:
> (1) *Today* is a holiday.
> (2) Johnny broke his plate *today*.

The understanding of either option seems to depend on a variety of contextual paprameters including sociocultural knowledge. The following examples illustrate this point:

1- Turn around *now*.
2- She is in the office *now*.
3- She is a Deputy Director *now*.

Now in (1) is interpreted as referring to coding time because it is part of an order with a particular content, so that to comply with the order involves immediate action. In (2) and (3) the adverbial is interpreted against wider concentric cycles because it is part of our cultural knowledge that if one is in an office, she is likely to be there for some time, whereas being a Deputy Director spans over a period of time and is not a momentary property of an individual.

The adverb "*then*" indicates distance from the deictic centre either towards the future or towards the past, and it has been claimed that it is really an anaphoric element to a span of time that has been previously established in discourse, as in the example below:

(1) I'll see her *tomorrow* and I'll ask
her *then*.

Apparently, "*tomorrow*" is time deictic, and "*then*" refers back to the time span that *tomorrow* established as a referent.

(1) I was just a kid *then*.

It is claimed that it is part of the meaning of *then* that it is a relational term in that it takes its value from a previously established reference to a point, or period, in time, and as such, it is also used anaphorically. In the above example, *then* refers to the same period. Like *now*, *today* can make reference to more mediate or wider time spans away from the deictic centre, as in (1) and (2) below:

1- *Today* is pay- day
2- *Today* youngesters
behave strangely sometimes.

In (1) coding time is within the 24 hours span, whereas in (2) coding time is within a wider and indefinite time span. Similarily, with "*tomorrow*" and "*yesterday*": "*tomorrow*" may be glossed as "in the future with respect to coding time" and "*yesterday*" as "in the past with respect to coding time".

Apart from the adverbials, time deixis is often expressed with adjectives such as "*next*" and "*last*" and the demonstratives "*this*" and "*that*" when attached to specific time cycles and their names, as in "*next week*", "*last Monday*", "*this month*", "*that December*" (Marmaridou 2000:84).

According to the above time expressions, it is important to note that their collocation with calendrical or non- calendrical renderings of time yields culturally significant results. For example, "*this year*" might mean the space of time between 1st January and 31st of December, or the space time, starting from the day including coding time, which is the calendrical rendering of the expression, or the space of time, starting from the day including coding time and ending after 365 days, that is, the non-calendrical rendering of the expression. More importantly, "*this year*" might refer to

the time between 1ˢᵗ September and 31ˢᵗ August including coding time in an academic context, or it might refer to the time between 1ˢᵗ April and 31ˢᵗ March including coding time in a British annual revenue context. Similarily, "*this week*" or "*this month*" refers to the week or month including coding time. Furthermore, "*this December*" refers to the December of the calender year including coding time, but preferably when this December lies in the future of coding time rather than the past. Interestingly, in day time spans "*this morning/ afternoon/ evening*" make future or past reference to a larger unit, that of the 24- hour day.

Language of Nursing

According to Crystal (2006: 470), the field of medicine, more than any other, forces a confrontation between scientific and everyday language.

In general, language is the medium by which communication is both conveyed and received. Language provides our human life style with a rich tapestry of ways to communicate meaning and understanding within our present day society. Communication is a universal word with many meanings. Many definitions describe it as a transfer of information between a source and a receiver. In nursing, communication is a sharing of health- related information between a patient and a nurse, with both participants as sources and receivers of information. Communication occurs in many ways and may be verbal or nonverbal, written or spoken, personal or impersonal, issue specific, or even relationship oriented. It also occurs on two levels: the relationship level and the content level . The relationship level refers to how the two participants are bound to each other. The content level refers to the words, language, and information that are exchanged by the participants (Sheldon 2009: 5).
In nursing, language is used to facilitate quality care and inform and educate recipients of that care. It is essential that what is transmitted is commonly interpreted by nurses and patients alike. Questions are posed relating to an elitist language for nurses and its placement for communicating with other health care professionals.
Language develops as communication and conveys meaning and understanding within a framework of practical application, commonality of understanding, and professional nursing accountability (Allen 2007: 47- 51).

Communication is defined as the imparting or interchange of thoughts, opinions, or information by speech, writing or signs. It is an essential component of profssional nursing having relevance to currency of care for each individual patient. The language contained in the documentation must be commonly understood by all nurses. Communication therefore is not only required to be succinct, relevant, and current, but must convey meaning and understanding to all nurses irrespective of where they are working; this is evidenced by nursing being accepted as a global occupation (Johnstone 2004: 20).

Words alone can be meaningless; it is through the characterization of words that meaning and understanding is conveyed. Language imparts knowledge for professional nurses to share thus guiding practice through a commonality of understanding and meaning.

The Analytical Framework:
The data of this research include case studies from a book entitled; 'Communication for Nurses' (2009). The collected data are analysed to explain pragmatically how deixis; place, time, and person deixis operate in the language of nursing. Communication through dexis is very important in referring to what is tied to the nurse and the patient sharing the same context.

In analysing the data, a descriptive method is used to frame the research. It covers four main points of the research, namely, (1) Type of the study, (2) Object, Data, and Source of data, (3) Method of data collection, and (4) Technique of data analysis.

Type of the study
The qualitative research is employed in analysing the data. Qualitative research is a research, which has a result of descriptive data in the form of written or oral form observing people or behaviour. Then the steps of conducting this qualitative research are: (1) determining the object of the research, (2) determining the source of data, (3) determining the method of data collection, (4) determining the technique of data analysis.

Object of the Study, Data, and Data Source.
The object of the research is deixis; the data are kinds of deixis: person deixis, time deixis, place deixis while the source of data is " Communication for Nurses" book.

Method of Data Collection.
1- Reading and observing the case studies in the book.
2- Analysing the data and finding the three types of deixis.
3- Displaying the data.

Technique of Data Analysis.
The data are analysed through classifying the three types of deixis; person deixis,

Analysis of Deixis in the Language of Nursing.
Person Deixis
Person deixis is a word that functions as personal pronoun. It is related with personal pronoun and can be used with reference to the context of situation.
The criteria of personal deixis are the actor in the event, such as first person, second person, and third person. In this case, the first person refers to the speaker, and second person refers to the audience or addressee and the third person refers to someone or something else. For example;
"Good Morning, **Mrs. T. My** *name is* **Jay Kennedy,** *and* **I** *will be* **your** *nurse today.*
We *have a full day today with some tests.*
How about getting washed up now? Is it all right to call **you Mrs. T***.?*
In the above example, the utterance is uttered by the nurse "Jay Kennedy" who is the speaker to the patient " Mrs. T." That is the listener. The deictic words "*I, My,* and *We*" refer to personal pronouns and the referent is "Jay Kennedy". The type of deixis is the first personal pronouns. "*I* and *We*" are the subjective case, while "*My*" is the possessive case. The deictic words "*Your* and *You*" refer to second personal pronouns and the referent is Mrs. T. "You" is the subjective case while "Your" is the possessive case. The deictic word "*Mrs.*" refers to honorofics which is a category of personal pronouns.

*Nurse: "Mrs. R. **I am Laurie Snow**, and **I** will be the nurse working with **you** today. What do **you** like to be called?"*
*Patient: " Hello. Call **me Sue**; that's what **everyone** else calls **me**. This is **my** husband, **Andrew**."*
*Nurse: (**She** shakes hands with the patient and **her** husband.) "it's nice to meet both of **you**. Sue, **I**'d like to explain what's going to happen today, ask **you** a few questions, and answer any questions that **you** may have about **your** surgery."*

In the above example, Laurie Snow is the nurse who is the speaker and the patient is Mrs. R or Sue. Who is the listener. The deictic words "*I am, I, me, my*" refer to personal pronouns and the referent is the nurse " Laurie Snow". The type of deixis is the first personal pronouns. While "*you* and *your*" are the type of deixis which refer to the second personal pronoun to address the listener/ listeners.

" *You*" is the subjective case while "*your*" is the possessive case. "*She, her, it*" are another deictic words which are the third personal pronoun. "*She* and *it*" are the subjective case while "*her*" is the possessive case. "*Everyone*" is a deictic word which is indefinite and non- specific pronoun.

Place Deixis
Place deixis is a deictic reference to a location relative to the location of a participant in the speech event, typically the speaker. E.g.

*It is her second day **in the hospital** after developing a fever and cough.*

In the above example, "*in the hospital*" refers to place dexis which is the location of speech event.

*When he **comes** in to bring her morning medications, he says "Mrs. T., I have your medications."*

In the above example, the verb "*comes*" is categorized as place deixis. The verb "*come*" is a movement close to the location of speaker.

*Nurse: "How long have you had **these** problems?"*
*Mrs. S.: " Since my husband died, but I feel worse since I raked the lawn **this** morning."*

In the above example, place dexis can be seen from the use of demonstrative pronouns such as: "*these* and *this*". Demonstrative pronoun "*This*" can mean an object close to the speaker's event. While "*these*" is a plural form of "*this*" that have the same concept.

*Nurse: "It is common to feel nervous about surgery. My goal is to help you through today. I will explain everything as we **go** along and answer any questions you and Andrew may have."*

*Patient: "I am glad that you will be **there**. May my husband **come** with me?"*
Nurse: "Of course."

In the above example, place deixis is used through the use of distal term "*there*" which means "relatively distant from the speaker. Also the use of two verbs "*go*" and "*come*" which refer to the movement close or away from the speaker during the speech event.

Based on the examples above, place dexis is the words which refer to the location of speech events, and deal with the distance either proximal or distal of speaker's location.

Time Deixis

According to Levinson (1983: 217) time deixis refers to the time which is relative to the time of speaking or an utterance spoken. While Hatch (1992: 217) states that time deixis refers to time relative to time of speaking. E.g.

*Nurse: "Hello, Mrs. S. I am Laurie Gardiner, and I am the nurse Who will be taking care of you. How are you feeling **tonight**?"*

In the above example, the word "*tonight*" can not be categorized as time lexeme. It is caused by the planet position in the earth toward with the position of sun. Time lexeme can be deixis if the speaker is the standard of utterance.

*Nurse: "**Good morning**, Mrs. R. Are you ready to get started?"*
Mrs. R. : "Ready? What good does this do for me? You think I want to have this?"
*Nurse: "You sound upset **today**.*
In the example above, time deixis is refered to through the use of calendrical units such as "*Good morning*". The word "*today*" is used to locate the utterance of the nurse which is relative to the time of speaking.

*"what am I supposed to do, take those **now** just because you say so?"*

Now, he is recovering from a below- the- knee amputation.

In the above example, "*Now*" marks proximal time. It reflects an interminable time period within the relevant span.
 Time deixis is an adverbial of time that its reference always changes in response to the time of speaking.

The Results.

Deixis refers to the phenomenon wherein understanding the meaning of certain words and phrases in an utterance requires contextual information. The frequency of deixis in nursing texts is 270.

Peson deixis concerns itself with persons involved in the utterance and it is considered a distinctive feature since it has 217 occurrences of all types of deixis which constitutes 80. 37%. Place deixis refers to the locations relevant to an utterance. It has 25 occurrences which represents 9. 25% of all types of deixis.

Time deixis refers to various times involved in and referred to in an utterance. It has the frequency of 28 which makes up 10. 37% of all types of deixis.

Conclusion and Suggestion.

In this paper deixis in nurse- patient interaction has been analysed. Some words or phrases are said to be deictic. These words and phrases have a fixed semantic meaning, but their exact meaning depends on the context of situation. Some also describe these words or phrases as ones that change according to "time, person, or place", but the underlying idea is that additional contextual speech determines the exact meaning of deictic utterances. Such terms may contribute both properties and relations to the propositions in which they occur.

Based on the data analysis and discussion, it is concluded that there are three types of deixis that are used in the nursing texts; person, place, and time deixis.

From this study, it is implied that all types of deixis can be applied to nursing texts. It is observed that person deixis is predominant in the interaction while place deixis seldom occurs.

The function is to find out the participants' roles in the language of nursing. Furthermore, by using deixis it will make the patients understand the message easier. It is also useful to provide the phsycological support that the parient needs by developing a close relationship to the nurse.

Based on the implications, it is suggested that all kinds of medical communication, e.g. doctor- doctor, doctor- nurse, nurse- nurse desrve special study for a better understanding of their respective characteristics and of the roles of language in medical communication in general. Communication through language forms an integral part of conveying meaning and understanding for nurses.

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Entrepreneurship Education and Women Graduates Productivity in Ondo State Nigeria: Available Option in Lifelong Skills Approach

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Abstract

Education has revolved from long established systems to the needs of students and the society. Due to this, nations have tried to tailor their societal needs to the goals and objectives of the education policy especially, with the current global economic, social and environmental change, the transition to a knowledge-based society and demographic pressures from population increase. All these attest to the introduction of Entrepreneurship Education in Nigerian tertiary institutions. However, this paper asserts that the lifelong learning skills approach is capable of enhancing the productivity of women through entrepreneurship. This paper seeks to find out the specific skills of women graduates acquired during the course of taking Entrepreneurship education and lifelong learning in their respective institutions, the extent to which they have been able to utilize entrepreneurship education and lifelong learning skills for productivity, whether entrepreneurship education and lifelong learning skills could enhance the women's socio – economic development. These questions and others were answered through survey research of a combination of quantitative and qualitative approach from 243 women graduates in Ondo State. Findings revealed that the combination of entrepreneurship education and lifelong learning skills enhanced women's entrepreneurial productivity for their socio-economic development F-ratio of 205.875 is significant at 0.05 levels. Lessons from these findings are that lifelong learning skills could be used to enhance women's productivity in Nigeria. This is crucial to boost productivity, reduce unemployment, poverty and achieve socio economic development of the women**.**

Keywords: Entrepreneurship education, Lifelong learning skills, women graduates' productivity and socio economic development.

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Introduction

The traditional Nigerian Education system is distinctive although, she has borrowed from international standards as no nation can reach the lofty height of development without borrowing from other cultures but, she has revolved from long established system of indigenous education of learning by doing, character training and community participation to the present system and the introduction of Entrepreneurship Education in the nation's educational curriculum.

Religion and western culture brought about formal education into Nigeria. Educational activities was operated majorly by Christian missions in Nigeria between 1842 and 1882 with a meagre financial support from the colonial administration thus, the utilitarian goal of education was emphasized such that the colonial period and early years of independence witnessed the white-collar job syndrome by Nigerians. However, in 1969 there was a review of the education system Adaralegbe (1972) and in 1982 the emergence of the 6-3-3-4 system of education in Nigeria which provided the content of the system through functionalism and education for self reliance.

The curriculum emphasised the needs of youths and adults, the socio-economic needs, values, aspirations and development of the society (Babafemi, 1990). The 6-3-3-4 would have yielded great impact on the Nigerian youth and adult but for the missing link between curriculum planning and implementation thus, the objectives of the 6-3-3-4 system were not met. Graduates of institutions still seek salaried jobs.

Unemployment in Nigeria stands at 23.9 percent, The Punch April 23 (2014) and Alese (2015); the increase looms. The growing incidence of graduate unemployment and skill shortages in the face of population increase has culminated in high poverty level, underdevelopment and rising rate of social vices and insecurity. One is apt to say that previous formal education policy of Nigeria did not meet the needs of her people. Women were the worst hit as the few that were opportuned to receive formal education early enough had the Victorian style of education to function as 'good wives'.

In order to reduce the level of unemployment among graduates of tertiary institutions, entrepreneurship education was introduced into the tertiary system as a means to instil self reliance through the building of entrepreneurial spirit among Nigerian graduates and reduce the high rate of unemployment among youths, of which women graduates are more vulnerable. Presently, students in secondary schools are also mandated to offer vocational education as a means to build entrepreneurship practice and self employment. Graduates of institutions are also devising coping strategies by attending both private and public lifelong learning institutions. Again, a salient issue is the funding of education in Nigeria. Over the years, a token had always been allotted to education in the nation's budget which had resulted in under implementation of policies in educational units and strata. Adult education, despite the potential had received so much neglect, one wonders why policies written down in blueprint are implemented haphazardly and not adequately funded.

Despite, UNESCO's recommendation of a twenty-six percent nation's budgetary allocation to education yearly; education is largely underfunded in Nigeria while adult and non-formal education, a potential tool for national development had received near to nothing.

Lifelong learning, a salient component of adult education is defined as all learning activity undertaken throughout life, with the aim of improving knowledge, skills, and competence, within a personal, civic, social and/or employment related perspective. This millennium witnessed transition to a knowledge-based society globally where the resources of a nation without adequate knowledge and skills may not take her anywhere in the global market. The concept of lifelong learning is paramount to competitiveness of the knowledge economy that applies to all levels of education and training at all stages of life involving all forms of apprenticeship.

Entrepreneurship Education should be particularly lifelong since it is the training that emphasises the acquisition and development of appropriate knowledge and skills that would enable individuals to maximise resources around them and within their capabilities. Entrepreneurship education is a desideratum in the context of lifelong learning for national development.

It becomes imperative to bring to fore the link between Entrepreneurship education and lifelong learning in adult education as a tool to boost entrepreneurial productivity of institutions graduates and particularly women graduates because of the definite ability of imbuing in graduates/individuals the urge and drive for creativity and self-sustainability. Lifelong learning in adult education that is change-characterised, relevant, situational, relatively planned and organised to develop, create, increase and update people's knowledge irrespective of age for real-life tasks is a continuing education system and instrument for achieving a developed egalitarian society with relatively better productivity of all her citizenry irrespective of sex and age and which is the main thrust of this paper.

Women graduates in this study are adult females, who have completed their studies from secondary schools to tertiary institutions. In essence, they are graduates from secondary schools, advanced teachers colleges, polytechnics and universities.

Statement of the Problem

The level of development of a nation is predicated upon the level of productivity of her human resources irrespective of sex through appropriate quality and level of skills, education, and training. Whereas, functional education involves entrenching requisite skills to make the people self dependent and co-contributors to national development; anything short of these create problems and a lacuna in the total development of the citizenry and the nation at large. There is therefore, the need to appraise the present hands on formal system of education to putting all institutions in place for a more flexible, adaptive and proactive knowledge. Could Lifelong learning side by side entrepreneurship education enhance productivity and stem labour surplus among female graduates for their socio economic development and that of the nation at large? The study provides answer to this as we read on.

Objectives of the Study
The study sought to find out:

1. The specific skills women graduates acquired during the course of taking Entrepreneurship education and lifelong learning in their respective institutions.
2. The extent to which they have been able to utilise entrepreneurship education skills for productivity.
3. The extent to which they have been able to utilise lifelong learning skills for productivity.
4. Whether entrepreneurship education and lifelong learning skills could enhance the women's socio – economic development

Research Questions
The following questions guided the study:

1. What are the specific skills women graduates acquired in their respective institutions?
2. To what extent has entrepreneurship education skills enhanced women graduates' productivity?
3. To what extent has lifelong learning skills enhanced women graduates' productivity?
4. To what extent has entrepreneurship education and lifelong learning skills enhance the women's productivity for their socio – economic development?

Literature

Entrepreneurship Education
Entrepreneurship education in Nigerian tertiary institution's curriculum has come to stay. For over a decade now, the quest for self-reliance and solution to unemployment and poverty has made the nation to seek better productivity through entrepreneurship education. According to Ifegbo (2000) entrepreneurship education is the training that emphasises the acquisition and development of appropriate knowledge and skills that will enable an individual to maximise the resources around him/her within the limits of his/her capability. Also, Osuala (2004) opined that entrepreneurship education is a specialised training in which one acquires skills, ideas and management abilities necessary for self-reliance.

Meanwhile, Okoye (2004) says entrepreneurship education consists of ideas, information and facts that assist learners to develop competencies needed for firm career commitments like setting up business, marketing services or being productive employees of organisations. Abiona and Alese (2009) averred that entrepreneurship education enables students to be better equipped to cope with dynamic change as it shows concretely how cultural values, social institutions, economic policies and legal practices interrelate to shape human behaviour. This offers the opportunities of identifying and responding to societal needs.

Entrepreneurship Education, Adult Education, Lifelong Education and Lifelong Learning: The Interconnectivity.

Adult Education is conceptualised as an educational activity relatively planned and purposefully organised for people, irrespective of their age, location and socio-economic background, those who desire to learn in order to cope more satisfyingly with real life problems. (Nyerere, 2006 and Egunyomi, 2015). Adult Education covers a variety of activities. It enhances creativity, innovativeness, novelty, survival of the people and sustainable development. The scope of Adult Education is represented in the tree below:
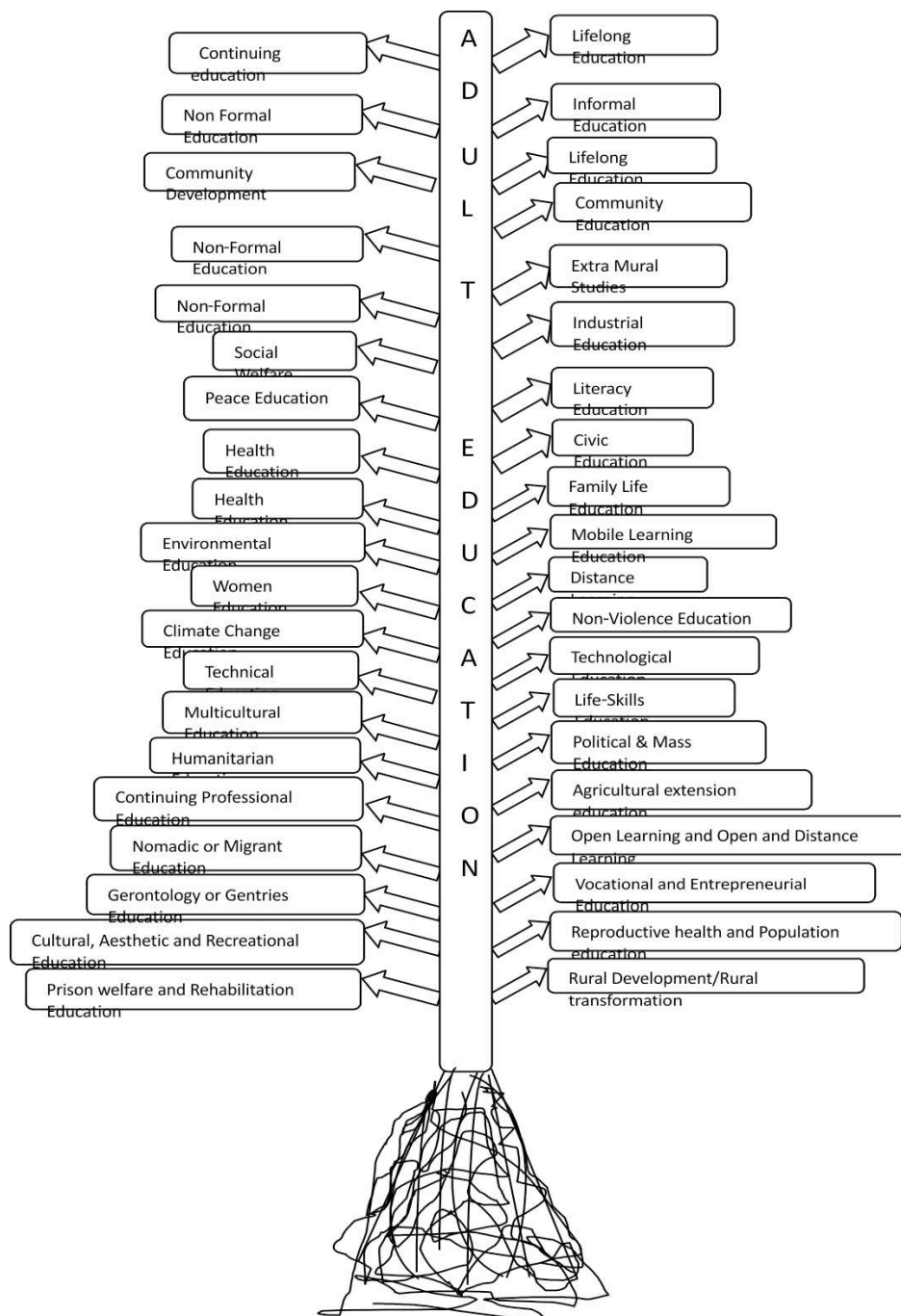
The salient characteristics of Adult Education are the richness, comprehensiveness, wideness, multidisciplinary and interdisciplinary scope. Perhaps the reason why it was re-conceptualised in Hamburg in 1997 as:

> *The key to twenty-first century: Both a consequence of active citizenship and condition for full participation in society. A powerful concept for fostering sustainable development, for promoting democracy, justice, gender equity and scientific, social and economic development, and for building a world in which violent conflict is replaced by a dialogue and a culture of peace based on justice.... (Hamburg Declaration paragraph. 2)*

Lifelong Education emphasises continuous and never completed education. It is all levels of formal and out-of-school education that are merged without a break and into a continuum uninterrupted by final qualifications (Knoll, 2004). Nyerere once said that adult education must be a part of life, integrated with life and inseparable from it to contribute to development. In essence, adult education encompasses the whole of life which must build upon what already exists (Nyerere in Adult Education and Development IIZ/DVV 2006). This is Lifelong Education. Lifelong learning is about acquiring and updating all kinds of abilities, interest, knowledge and qualifications from pre-school years to post-retirement, promoting the development of knowledge and competencies to enable citizens adapt to the knowledge based society.

Entrepreneurship is empowering. A deep view of its context reveals the empowering nature. For instance, Essien (2006) defined entrepreneurship as the totality of self-asserting attributes that enables a person to identify latent business opportunities together with the capacity to organise needed resources with which to profitably take advantage of such opportunities in the face of calculated risks and uncertainty. Similarly, Abimbola et al (2007) define entrepreneurship as a process which involves identification and exploitation of opportunities in a social context for the purpose of innovative and increased production, which ultimately translate to economic development and enhance quality of life. A good view of these concepts revealed the connectivity and there is none of them that could not enhance the other. The combination of which will promote the type of lifelong education that a nation desires.

Entrepreneurship and Women's Productivity

Women's contribution to national development cannot be underestimated. According to the United Nations Development Fund for Women (1995) Seventy percent of small scale enterprises are run by women in developing countries. African rural women are engaged in different levels of business activities ranging from micro to cottage enterprises. Former president Babangida of Nigeria remarked that Nigerian women have a history of engaging in productive activities on the farm and in their various cottage industries across the country. Again, Awe and Alese (2010) asserted that Nigerian women produce about eighty percent of the national food output. Corroborating women's productivity Terpase(2013) reiterated that women's involvement in small scale businesses have grown significantly. The female share of entrepreneurial activities in Sub-Saharan Africa accounts for 44.3% in agriculture, 28.2% in industry and 46.9% in services in 1996. In 2004 the figures were 43.8%, 27.0% and 46.2% respectively. Again, in 2005 they were 43.7%, 26.4% and 46.1%. (ILO, 2007 in Alese, 2013).

Lifelong Learning Skills and Women's Productivity
Lifelong learning skills are productive skills. The Nigerian government had embarked on some lifelong skills approach earlier to enhance the people's productivity in which women had benefited. Programmes such as the Better Life for Rural Women Dwellers, Family Support Programmes and the Capacity Acquisition Programme of the National Poverty Eradication Programme are good examples (Alese, 2010).

Similarly, International agencies have been assisting developing countries to empower their citizens through lifelong skills. According to Oladapo (2006) the UNDP launched a programme to enhance the status of women in Nigeria through income generating activities for urban, semi-urban and rural women. Again, DVV international of the German government is implementing development projects in developing countries. For instance, in Afghanistan, it is contributing in an outstanding way to ensuring that women in particular have both literacy and lifelong learning skills. (DVV,2014).

Why Lifelong Learning Skills in Tertiary Institutions in Nigeria?
According to Bamiro (2015), there is an apparent disconnect between acquired skills of the product of the university system and the requirements of the Nigerian industry as the system still operate the curriculum laid down by the colonisers. whereas the World Bank (2009) posits that tertiary education in general is fundamental to the construction of knowledge, economy and society in all nations. Again, Alese (2013), Onyesom and Uwaifo (2013) and Bamiro (2015) posit that it behoves on the nation to restructure the education policies and delivery so that the curriculum will be tailored towards the acquisition of entrepreneurial skills that drives the empowerment of the people for sustainable development and articulate for each discipline the required skills set for the graduates to thrive in the nation's economy.

Similarly, Oloide (2000) affirmed that the absence of a functional entrepreneurship curriculum is an impediment to sustainable development. However, Adult Education stands to remedy this problem as a ready response to human limitations at the individual, community and societal levels. It also fosters a renewed town and gown relationship. This is corroborated by (Sarumi, 2011). Adult Education programmes are usually problem-solving and situationally relevant to the needs of the society. Because of the non-formal nature, it stands to achieve better result where entrepreneurship education is incapacitated for being too formal in nature. It also permeates all discipline. Perhaps the reason Sarumi (2011) affirmed that

> *probably no other discipline that the university has helped to contribute to its growth and acceptability than adult and non-formal education and no other discipline in the university that has tremendous impact on the society than adult education.(p.128)*

Nigerians need to borrow a leaf from German's philosophy of education as her policy is guided by the principles of holistic lifelong learning in the form of education from early childhood through primary and secondary school-vocational education, higher education and further education and training. This is academic learning and above all non-formal education which DVV international implements (DVV, 2014).

Challenges of Entrepreneurship Education

There is no doubt that Nigeria had always tried to correct her errors and imbalances in her educational policies, she had always bought into developmental issues through diffusion but, the problem had always been a gap between policy formulation and implementation. For instance, the 6-3-3-4 system of education of the 80ˢ would have corrected the anomaly of colonisation and a solid foundation for entrepreneurship education but for poor implementation. The 6-3-3-4 system was a local breed that laid emphasis on functionalism and education for self-reliance but was not allowed to thrive.

Meanwhile, The teaching and learning process of entrepreneurship education is too formal. Also, rather than making use of local text to address local needs; foreign texts that are not synonymous with local needs are made use of. According to Alese (2013 and 2015). Oyetakin (2015) Onyesom and Uwaifo (2013). There is the need to bridge the theory – practice gap and the missing link between curriculum planning and implementation.

Again, the poor knowledge of basic science and technology poses threat to entrepreneurship development. Nigeria has refused to develop her technology. In cases where some people initate indigenous technology, incentives and motivations are lacking to drive the creativity and innovation. According to Oyetakin (2015) there is lack of strong patent law even to protect local entrepreneurs such that products will not be exposed to piracy and local goods need to be encouraged. The high cost of Operating business and the collapsed infrastructural facilities hinder entrepreneurs from maximising their potentials. Equally, the 'get rich quick syndrome' as a result of the oil boom has impacted negatively on our attitude to work.

Funding of quality education generally in Nigeria is not encouraging. According to Alese (2015a) the budgetary allocation for education generally falls short of UNESCO's recommendation. The present Buhari administration's budget has just been passed and education received 365.6 billion. Inadequate funding has affected the implementation of education curricula generally in Nigeria.

Challenges of Adult Education and Lifelong Learning

According to Sarumi (1998) Adult education makes use of initial skills, changes wrong values and attitudes, updates knowledge and offers people lifelong learning through its multidisciplinary component. Adult Education in the context of lifelong learning provides opportunities for change in individuals, communities, societies and nations. It assists in the acquisition and renewal of skills to make a living but despite these benefits, the society and government gives little or no priority and recognition to adult education.

The nomenclature – adult education has attracted global discourse which makes the people to have a wrong perception of its content. No wonder many universities in Nigeria are yet to embrace the discipline. Also, collaboration among cognate Faculties and Departments in universities that float programmes in adult education is lacking some Faculties and Departments are ignorant of the value adult education could add to their programmes as such they underrate it as a discipline.

A well developed adult education and training system provides a variety of programmes and courses that respond to personal and national development needs (Nnazor, 2005, Sarumi, 2011, Egunyomi, 2015 and Igbo, 2016).

Again, Sarumi (2011) asserts that adult education need to re-examine itself and reflect on the courses on offer , the tools of analysis used, relevance to its goals, quality of research output and the way the discipline is responding to global challenges, as it behoves on lifelong learning to redress the challenges of globalisation, the digital divide, armed conflict, insurgency, industrial unrest, peace building, poverty reduction, gender parity and the Millennium Development Goals.

Funding of all levels and strata of education is a big challenge in Nigeria. Individuals, government, philanthropists should rise up to the challenge and fund education generally and adult education in particular in order to meet up with the lost of period and neglect.

The body anchoring adult education practitioners in Nigeria are not up to the task of coordinating the Nigeria National Council for Adult and Non – formal Education (NNCAE) properly. All known professionals come together always to address issues concerning their profession but the NNCAE organises its annual conference at will.

Theoretical Framework

Constructivist theory of learning
The study employs Constructivist theory of learning to presents how learning occur. Constructivism is a cluster of related views among which is the social constructivism, radical constructivism and social cultural approach premising on the assumption that learning is a social, personal and active process of constructing meaning and transforming understanding (Schulze, 2003 in Geduld, 2014). As propounded by Dewey, Piaget and Vigotsky, they opined that knowledge is constructed from real life experiences, prior knowledge and the activities students engage in as they learn (Bartos, 2007 in Geduld 2014).

This theory states that students learn with greater understanding when they share ideas through conversation, debate and negotiation. Again, that learning should be situated in realistic settings while testing should be integrated with the task and not a separate activity and sometimes peer review to be set up to encourage further thinking (Bartos, 2007 in Geduld, 2014). This is quite relevant to entrepreneurship education and lifelong skills as they provoke knowledge and enhance creativity and innovation which are essential for the knowledge economy.

Although constructivism has its weaknesses, for instance, it has been criticised for its subjectivity in downplaying the role of individual students while emphasising social interaction and collaborative learning and that student are evenly responsible, self directed and posses the skills to control their own learning Geduld(2014) yet the theory is quite adaptable.

Methodology

The Study adopted a descriptive survey research design which enhanced the research process. A sample of women from a selected lifelong learning Skills/Entrepreneurial skills:RQ1_ Bag making, shoe making, cosmetology, photography/ event recording, poultry keeping and fishery were chosen because of women's prevalence in the skills. Participants of the study were two hundred and fifty (250) women. Participants in four skills RQ1 Bag making, shoe making, cosmetology and photography/event recording were drawn on equal basis of forty – two (42) participants each from the purposefully selected skills; employing the stratified and simple random sampling techniques while the two other skills: poultry keeping and fishery had forty – one (41) participants each.

The participants' age range from twenty – eight years (28) to forty – five (45) years. Out of the two hundred and fifty participants, one hundred and sixty – two (64.8%) are married while eight – eight (35.2%) are not married. None of the participants are widowed. All the participants are literates. Their literacy rate range from the Senior Secondary School to University level. All the participants had a taste of entrepreneurship education while they were in School. They decided to go for the practical in lifelong learning centres when they graduated since they did not have the opportunity while at school.

The study covered the three senatorial districts picking two major cities each where lifelong learning centres were operational in Ondo State, Nigeria. They are Akure, Ondo, Ileoluji, Okitipupa, Owo, and Akungba. Apart from the fact that the cities represent the three senatorial districts, they also house formal institutions from primary schools to tertiary institutions where the respondents graduated from. A thirty item self – structured questionnaire tagged Women Entrepreneurship Education/Lifelong Learning Skills Indices and Productivity Scale (WEELLLPS) based on Lickert scale format with a reliability coefficient of r = 0.79 was used as the main instrument to elicit responses from the participants.

Out of 250 questionnaires that were administered 245 were returned while 243 were adequate for data processing. While the 243 questionnaires formed the basis of data analysis of the study. The Focus Group Discussion (FGD) was used to capture information that may have been omitted by both the researcher and respondents in writing. A total of six FGD sessions were conducted with the participants from six selected skills – Cosmetology 42, Bag making 42, Photography 42, Shoe making 42, Poultry 41 and Fishery 41

Result and Discussion of Findings

Research Question 2. To what extent has entrepreneurship education enhanced women graduates' productivity?
Hypothesis 1: Would there be no significant relationship between Entrepreneurship education and Women productivity?

Table 1

Variable	Mean	Std. Dev.	N	R	P	Remark
Entrepreneurship Education	71.9506	14.2735	243	-.422**	.001	Sig.
Women Graduates' Productivity	24.6872	3.8345				

It is shown above that there was a negative significant relationship between Entrepreneurship Education and Women Graduates' Productivity (r = -.422**, N= 243, P < .01).

The reason is not farfetched. Although, entrepreneurship education is found to enhance productivity; the women graduates were exposed to a non explicit and theoretical curriculum while in school. This agrees with (Alese, 2010, 2013 and 2015b; Onyesom and Uwaifo 2013, Agbim et al and Ojeifo 2013)
Hypothesis 2: Would there be no significant relationship between lifelong learning and women's productivity?

Table 2

Variable	Mean	Std. Dev.	N	R	P	Remark
Lifelong Learning	71.9506	14.2735	243	.221**	.001	Sig.
Women's Productivity	32.2305	5.3556				

Also, table 2 shows that there was significant relationship between lifelong learning and Women's Productivity (r = .221**, N= 243, P < .01).

This corresponds with Figel (2006) Alese (2013) Sarumi (2011); Egunyomi (2015) and Igbo (2016).

Hypothesis 3: Would there be no significant relationship between entrepreneurship education and lifelong learning for Women's socio – economic development?

Table 3: Joint contribution of the independent variables (Women's socio-economic development) on Entrepreneurship Education and Lifelong Learning Skills.

R	R Square		Adjusted R Square	Std. Error of the Estimate
.522	.272		.271	12.2442

A N O V A						
Model	Sum of Squares	DF	Mean Square	F	Sig.	Remark
Regression	61729.336	2	30864.668	205.875	.001	Sig.
Residual	165211.15	1102	149.919			
Total	226940.49	1104				

Table 3 shows that the joint effect of the independent variables **(**Women**'s** Socio Economic Development**)** to the prediction of the dependent variables.

i.e Entrepreneurship Education and Lifelong Learning Skills were significant. The table also shows a coefficient of multiple correlation (R = .522 and a multiple R^2 of .272. This means that 27.2% of the variance was accounted for by the predictor variables when taken together. The significance of the composite contribution was tested at P < .05. The table also shows that the analysis of variance (ANOVA) for the regression yielded a F-ratio of 205.875 (significant at 0.05 level). This implies that the joint contribution of the independent variables to the dependent variable was significant.

Lifelong learning component in Adult education is enhancing. This supports (Sarumi, 2011, Egunyomi, 2015 and Igbo 2016). Lifelong learning has assisted in providing the missing link in entrepreneurship education by providing practical link between the women's needs and their society. Thus enhancing their socio – economic development and assisting in solving real societal problem.

These findings corroborate the Focus Group Discussion session with the participants. For instance, The Bag making session was summarised thus:

> *We learnt entrepreneurship education in school but was too theoretical. Some of us that are tertiary institutions degree holders were exposed to a week practicals of the skills we are interested in learning at the National Youth Service Corps Camp in Nigeria. After this, we went to lifelong learning skill centres where we had pure practicals. Ma, there is a big difference between theory and practice although we paid for the training; we are satisfied because we are able to practice. We take our products to schools, markets, churches and the like. Even, during festive seasons we make more money; see! I cannot sit in any office to be pushed around, wait for thirty solid days before receiving salaries which is not even regular these days. Our apprentices are here. So what else do I want?*

The above is corroborated by Ojeifo (2013),Bamiro (2015) and Alese (2015b) that there is an apparent disconnect between the universities and industry which calls for university – industry partnership. Alese (2010, 2013 and 2015) further complemented the creativity of women in their different engagements. Also, the shoe makers corroborated the opinion of the bag makers.

> *We patronised lifelong learning skill centres in order to be skilled in our chosen engagement. You can see that this has actually counted us among manufacturers. Personally, I don't even want to be engaged in salaried profession. Here, I exhibit my creativity and innovative skills and it's worth the while. Aunty, people wear shoes every day*!

The above affirmed (Sarumi, 2011; Egunyomi, 2015 and Igbo, 2016). Lifelong learning engages the people by meeting them at the point of need. Again, the Cosmetologists had this to say:

> *Have you seen people, especially women who do not like to look good? Yeah! We make people look grea! If we make up for you, your husband will love you the more. We learnt this skill when we left school. Nigerians love throwing parties. There is no day, especially weekends that we are not engaged. The unique head gears on politicians are also done by us. Abeg this business, na good one!*

This agrees with Machando (2000) Oyetakin (2015) and Nyerere (2006). Education and training for the need of the society is important.
Meanwhile the event coverage/photography session enthusiastically said:

> *We give real meanings to programmes and events. During programmes, events and parties, we cover and record such events and people dote on us because of our expertise. Sister, this business earns us good living. Despite our certificates; none of us is thinking of picking up a white collar job.*

This is in agreement with (Machando, 2000; Bamiro 2015 and Alese 2015b).
The poultry and fishing sessions are summarised thus:

> *Poultry and fishery businesses are good. Most of us engage in the two as you can use poultry waste to feed your fish. At school we learnt these skills too but there is nothing like practical experience. The experience gained with farmers in our locality was put together with the one acquired during entrepreneurship education at school. Let's be sincere with you Ma, government is wasting resources by not investing extensively in farming.*

This agrees with (Agbim et al 2013,Ojeifo, Onyesom and Uwaifo 2013, and Onyetakin, 2015).

Conclusion

It was established in this study that Entrepreneurship education side by side lifelong learning is a right move towards enhancing women graduates' productivity in Ondo State, Nigeria. Given, the high rate of unemployment, and poverty among the citizenry and the movement towards knowledge based competitiveness internationally; the present curriculum of Entrepreneurship education in tertiary institutions and the way it is taught may not be able to address the needs of the learner, the Nigerian industry and society at large. Lifelong learning through adult education is capable of harnessing the potential of the discipline towards bridging this lacuna since it is a ready response to human problems at the individual and society levels.

Recommendations

Based on the findings of the study, it is necessary to recommend the following:

- There is the need to review all tertiary institutions curricula in order to make provision for the required skills of the Nigerian industry to avoid a disconnect between the acquired skills of the product and the requirements of industries.
- There is the need for collaboration between cognate faculties and departments of institutions in building a curriculum that involves community participation for all discipline. Also, no discipline should see itself as being superior to the other but partners in progress.
- Entrepreneurship education curriculum in tertiary institutions should be made more practical to address local content.
- There should be a well developed lifelong learning and training system that respond to both personal and national development needs.
- This is the right time for all universities to create a separate department for adult education in universities and other tertiary institutions.
- The NNCAE need to rise to the challenge faced by adult education in the society. There is a dire need to protect and enhance the image of the discipline in Nigeria.
- Funding is salient to the success of any programme embarked up. The time is right for the government to give the funding of all units of education a pride of place in the nation's budgetary allocation if anything is to be achieved.
- Government, political leaders and philanthropists need to fund good business plans of graduates of institutions. This way, they must have impacted better on the society.
- It is high time majority of students take their studies more seriously and move away from the stage of complacency to a more problem – solving and solution driving stage. Attitude to work should change from an atmosphere of uncertainty of the oil boom, and the get rich quick syndrome to an attitude that promotes knowledge, creativity, innovation and entrepreneurship.

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Fig 1: Pictures showing a woman cosmetologist at work

Fig 3: Picture showing researcher during an interview session with skilled women in a lifelong learning centre

Fig 4: Poultry and feed mill owned by a young female graduate

Fig 5: Pictures showing fish pond natural aquatic and artificial habitat

Fig 6: Picture showing photo village and research assistant during an interview session with a young female graduate photographer.

Dramatic Tools as a Vehicle Towards Teaching Igbo Language in Primary Schools in South West Nigeria

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The IAFOR International Conference on Education- Dubai 2016
Official Conference Proceedings

Abstract

This paper examines the pedagogical shift from conventional teaching strategies to a dramatic mode in the Igbo class in primary schools in South Western Nigeria. The study utilizes the quasi-experimental design involving 25 primary schools in a senatorial zone that are foreign to the Igbo language. The population consists of 250 subjects randomly selected from the schools. The subjects were distributed into control and experimental groups. Each group was exposed to four weeks intensive teaching and later exposed to teaching using the conventional teaching strategies while the experimental group was exposed to the dramatic mode using theatre props and so on. The group were later post-tested and results of the pre-test and post-test were used as data for the finding from the study. The level of significance was 0.5. The findings revealed that subjects in the experimental group performed better than the subjects in the control group due to many factors. Recommendations were made after the research was concluded.

Keywords: Pedagogical shift, Igbo dramatic device, Primary school.

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Introduction

The use of drama and dramatic devices in foreign and second languages (such as Igbo language L_2) teaching is not new. It has lasted for as long as when teaching Igbo in primary schools to second language learners is commenced. However, this aspect of language teaching is neglected here in Nigeria by Igbo language teachers, curriculum developers and course book writers. The inclusion of drama based activities in language teaching is not so evident in current Igbo language teaching course books, resource books, supplementary teaching materials and teacher training courses. Dramatic activities offer students a wide range of opportunities to enhance their communication skills, motivation, confidence, problem solving skills and so on. Teachers need practical guidance on how to incorporate drama and dramatic activities into their teaching. Chukueggu (2012). It has been observed in education that quality learning happens when knowledgeable, caring teachers use sound and appropiate pedagogy.

Definition of terms
Meaning of dramatic devices
A dramatic device is a convention used in drama as a substitution for reality that the audience accepts as real although they know them to be false. These techniques give the audience information they could not get from straightforward presentation of action.

Drama and Dramatic Devices/Activities
Drama is a unique tool to explore and express human feelings. Holden (1982), defined drama as a kind of activity, in which students portray themselves in an imaginary situation. Drama is an essential form of behavior in all cultures, It is a fundamental human activity. Drama has the potential, as a diverse medium to enhance cognitive, affective and psycho-motor development of a child. Drama is also a tool which is flexible, versatile and applicable among all areas of curriculum. Through its application as a tool in the primary classroom, drama can be experienced by all children. In drama a high degree of thinking, feeling and moving is involved and subsequently, aids in the development of skills for all other learning within and outside of schools (transfer of learning) (www.sacsa.sa edu.au). A dramatic device is any "trick" used by a playwright to add interest to his work or create a particular impression or effect on the audience. Dramatic devices includes irony (Ogharaokwu), paradox (igbuduokwu), aside (nzupuuka), mime (miim), role play (Oruagwa), soliloquy (Ntakwu) and dramatic pause (Nkwusituejije).

Why Dramatic Activities should be used in Igbo language Teaching
There are a number of reasons why the use of drama is a powerful tool in the language classroom. Desialova (2009) outlines some of the reasons for introducing language learners to drama. They are listed below:

- Drama is an ideal way to encourage learners to communicate for real-life purposes.
- To make language learning an active motivating experience.
- To help learners gain the confidence and self esteem needed to use the language spontaneously.
- To bring the real world into the classroom.
- To make language learning memorable through direct experience.
- To stimulate learner' intellect, imagination, and creativity.
- To develop students' ability to empathize with others and thus become better communicators.
  All of the above are very essential to Igbo language learners.

Benefits of Dramatic Devices
Godfrey (2010), stated that using drama in a language course provides active, stimulating, and creative environment in which students can develop their language learning potentials. The use of drama enables students to explore their imagination and creativity as well as express themselves through Language and other forms of communicative activities, such as actions, movement. Dramatic activities help students to improve themselves in the following aspects:

- Positive motivation and self confidence.
- Oral and communication skills
- Authentic language use
- Accuracy and fluency of expression
- Proper pronunciation
- Multisensory and whole-personality learning.
- Learner-centered approach to hearing.
-

Positive motivation and self-confidence: participation in dramatic activities fosters self-awareness of others. It enhances one self-esteem and confidence which in turn boosts motivation.

Oral and communication skills: Dramatic activities integrate language skills in a natural way. It involves careful listening and spontaneous verbal expression. Some of them requires reading and writing.

Authentic language use: Through the use of drama, students engage in authentic language use. It becomes a means of practicing real-life language in the classroom. Drama puts language into context and gives the students experience in real life situations.

Accuracy and fluency of expression: Drama creates ample opportunities for conversational use of language which promotes fluency of expression. For instance, while students are practicing a play, they are encouraged to repeat words, phrases and sentences several times, by so doing the become fluent in using such expression.

Multisensory and whole-personality learning: Dramatic activities provide opportunities for students to involve their whole personality and use all their senses (sight, hearing, feeling, smell etc). Dramatic activities also involve the whole personality and not only the mental process.

Learner-centered approach to Learning: Dramatic activities make it possible for students to take charge of their learning. It enables students to test out various situations, registers and vocabularies.

Proper pronunciation: Godwin (2001) stated that drama is particularly effective for teaching pronunciation because various components of communicative competence can be practiced in an integrated way. Some of these components are discourse, intonation, pragmatic awareness, non-verbal communication etc. There are several research studies that support the benefits of drama in teaching second and foreign language learning (Brumfit, 1991; Richard, 1987; Marley and Duff, 2001). All these researchers agree that dramatic activities are useful in helping students to develop oral communication skills. They also help students to communicate in any language at all. From the foregoing therefore, several researchers have confirmed that the use of drama in teaching of foreign and second language is of great benefit. Therefore there is need to find out if such a thing exists in the use of drama to teach Igbo to second language learner's. Thus, the purpose of this study is to find out the difference in the level of performance of students taught with the conventional method and those taught using dramatic methods.

Statement of problem:
Most primary school students exhibit gross deficiency in learning Igbo language in the South-west of Nigeria. Scholars have attributed this phenomenon to certain factors on the part of the teachers and students. Hence, this paper examines teacher's interest, teachers' method of teaching and students' interest in drama as the major problems hindering the study of Igbo language by the second language learners.

Research question:
This study attempts to provide answers to the following research questions

- Is there any significant difference in performance between students taught using dramatic method and those taught using conventional method?
- Is there any significant relative effect of teachers' interest on dramatic method of teaching Igbo?
- Is there any significant relative effect on students' interest on dramatic method of learning Igbo language?

Hypotheses:
HO_1 There is no significant difference in performance between students taught with dramatic method and those taught with conventional method.

HO_2 There is no significant difference in teachers' interest on dramatic method of teaching Igbo Language.

HO_3 There is no significant difference in students' interest on dramatic method of learning Igbo language.

Population: 250 students were used out of the 25 schools selected. Ten students (10) each were selected from each of the selected schools.

Sample and Sampling Technique: The research was carried out in twenty-five (25) primary schools in Ekiti State, Southern Nigeria. This is because the researcher wants to use none Igbo speakers from that part of the country, bearing in mind the number of students in each primary school. Random sampling approach was used to select two hundred and fifty primary school students.

Procedure

Permissions were sought from the head-teachers of the schools to administer the questionnaires to the respondents. The guidance and counselor, the teachers of each school were of great help, including the researcher in the administration/distribution of the questionnaires. This was achieved within the space of two weeks.

The two hundred and fifty (250) copies of the questionnaires were all collected and found useful for the research and data analysis.

Data Analysis and Results.

The researcher chose the chi-square technique for the data analysis. This enabled the researcher to find out the relationship between the variables.

HYPOTHESIS I (HO_1): There is no significant difference in the performance of students taught with dramatic methods and those taught using conventional method.

Table one for hypothesis I

	SA	A	D	SD	TOTAL
Teaching second language learners with dramatic helps to achieve the stated objectives.	182(182)	20 (24)	35(27)	10 (18)	250
Dramatizing the lesson makes the students get involved	194(182)	25(24)	10(27)	21(18)	250
Students taught using dramatic methods internalized what they learnt	171(182)	31 (24)	26(27)	22(18)	250
The learning environment would be active with drama for Students	181(182)	19(24)	31(27)	19(18)	250
TOTAL	728	95	105	72	1000

Calculated value of x^2 = 26.07

In the above table for hypothesis I, the calculated value of 26.07 is greater than the table value of 7.815. Hence the hypothesis is rejected. This implies that, there is a significant difference in performance between students taught using dramatic method and those taught using conventional method.

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HYPTHESIS II (HO$_2$)
There is no significant relative effect in teachers' interest on dramatic method of teachers Igbo language

Table II for hypothesis II

	SA	A	D	SD	TOTAL
Teachers of dramatic methods are more productive than teachers of conventional methods	192(183)	23 (20)	18(24)	17 (24)	250
Teachers with good knowledge of the subject matter "Igbo" like dramatizing their lesson	179(183)	10(20)	31(24)	30(24)	250
Dramatized class is more active and interesting than the conventional methods	185(183)	21 (20)	22(24)	22(24)	250
Igbo as a language is best taught using the dramatic methods especially when teaching second language learners	174(183)	27(20)	24(24)	25(24)	250

Total=   730   81   95   94   1000
Calculated value of X^2 = 16.78

The above table revealed that the calculated x^2 value of 16.78 is greater than the x^2 table of 7.815. Hence the hypothesis is rejected. This implies that there is a significant relative effect in teacher' interest on dramatic method of teaching Igbo language.

HYPOTHESIS III (HO$_3$)
There is no significant relative effect in students' interest on dramatic methods of learning Igbo language as a second language learners (L$_2$)

Table III for hypothesis III

	SA	A	D	SD	TOTAL
Students of dramatic class are more productive than Students of conventional Igbo class.	181(171)	32 (35)	17(23)	20 (21)	250
Students acquire better knowledge of Igbo language when dramatized	160(171)	48(35)	31(23)	11(21)	250
Students love the dramatic Igbo class than the Conventional class	191(171)	10 (35)	19(23)	30(21)	250
Dramatized Igbo classes arouse students' interest the Igbo language as second language learners	152(171)	51(35)	26(23)	21(21)	250

Total=   684   141   93   82   1000
Calculated value of X^2 50.11

The table above revealed that x^2 calculated value which is 50.11 is greater than the table value of

7.815. Hence the hypothesis is rejected. This indicates that there is significant relative effect in students' interest on dramatic method of learning Igbo language.

Conclusion:

This study was carried out to examine the pedagogical shift from conventional teaching strategies to a dramatic teaching mode in the Igbo language class in primary schools. Based 0n the findings of the study, there is a significant difference in the performance of students taught using conventional method and those taught using dramatic method. The finding also shows that there is a significant relative effect on both teachers' and students' interest on dramatic method of teaching and learning Igbo language to second language learners of the language. Drama is an indispensable tool in language teaching. Therefore Teachers should capitalize on the opportunities and resources that are available through drama and use it more often in the Igbo language classroom in line with the position of Chukueggu (2012).

Recommendations:

In the light of the findings in this study, the following are hereby recommended to improve dramatic methods of teaching Igbo language in primary schools.

- Igbo language teachers should adopt effective teaching and learning environment that would enable the students have interest in their teaching method at all times.
- Teachers on their own should have interest in their profession and be ready to give out their best to the students at all times.
- Government at all levels should be interested in the study of the language and help to train and re-train the teachers by making provision for seminars and workshops for teachers from time to time.
- Teachers should always allow the students to take active part in the class. This will make the students to have sense of belonging in the class.
- Students should be assigned to dramatize one of the drama text book on their own. The teacher should always be ready to assist them as the need arises.

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The Role of Art Education Teacher's in Developing Designs of Traditional Crafts in Oman: A Field Study

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The IAFOR International Conference on Education- Dubai 2016
Official Conference Proceedings

Abstract
This paper is devoted to a review of the literature that covers all the topics related to the role of art education's teacher in developing designs of traditional crafts in Oman. These topics can be mostly grouped into two main parts. The first part explores the most significant stages in crafts enterprises' historical developments including the Art and Craft Movement, the Bauhaus and developments in crafts enterprises after the Second World War (post-war period). The historical contexts of these movements will help in identifying the challenges facing developing crafts designs and this in turn can help to reflect on the particular challenges for Omani crafts enterprises within a historical background. The second part of this paper will be dedicated to evaluating the PACI's crafts designs in this research on one hand and the role of art education teacher in developing designs of traditional crafts in Oman as a major objective.

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Part One: Crafts Enterprises and Objects Designs: Historical Background:
In this part of the literature review the researcher will highlight the most significant stations in crafts enterprises' historical developments to pave the way for the next part, which will be focused on an Omani craft enterprise represented in the PACI particularly. Consequently**,** this part of the research will investigate the Art and Craft Movement, because it was the first movement that dealt with the challenges and weaknesses of crafts in general and craft theories in particular, where the founders of the movement established the movement to face the negative consequences that affected western societies (especially Britain) as a result of the Industrial Revolution in the second half of the 19th century (Cumming & Kaplan, 2004). Also, this part will discuss the Bauhaus Movement and its influence on crafts theory and enterprise developments where its influence remained until the 1950s in the USA. The Bauhaus' new concepts at that time caused changes in the crafts areas creative industry, especially in training/education, machine involvement and elevating crafts to be on the same level as other visual arts in society. Finally, this part will cover the most important developments in crafts (and craft enterprise) after the Second World War in the West, where thoughts, movements, theories, craftsmen groups, craft education and schools became uncountable and so very hard to be fully documented.

Arts and Crafts Movement:
There is a large volume of published studies describing the role of William Morris in establishing the Arts and Crafts Movement. But it is important to understand that the movement had other originating sources (Naylor. G, 1980). In his book *The Arts and Crafts Movement,* Gillian Naylor dedicated a part in his work to explaining the sources that helped to establish the movement in the second half of the 19th century (p.11). Naylor emphasised that the architect Augustus Welby Northmore Pugin (1812 –1852) and his work '*True Principles of Christian Architecture'*, was one of the works that smoothed the way for the movement to emerge. Also, the 1835 Committee, which was concerned with industry standards, was another step toward the creation of the movement (ibid, p.15). Then Naylor considered the endeavours of Henry Cole, in the Felix Summerly venture, as another step towards creating the Arts and Crafts Movement, in this venture Henry Cole specialised in making industrial designs which went into production later, such as children's books, tea-pots and other items (ibid, p.18). The last of the sources, according to Naylor, is that organising the 'Great Exhibition' in the middle of the 19th century (other references specified 1851), and that the exhibition's real value came about because it "was first international exhibition ever to be held, and it enabled the British to measure their achievements against those of other nations" (p.20). After all these previous actions, the path was smoothed for the emergence of the Arts and Crafts Movement (ibid, p.22).

The Guild can provide a hidden objection against the impact of the industrial age in England, and it may also provide a theoretical background for the practicing artists and craftsmen to express their protest as well, but through their art and crafts production. This is actually what happened when William Morris converted Ruskin's utopian thoughts into his company later. In fact, Bruce Metcalf (1999) emphasised that William Morris's real contribution to modern crafts, rests on his suggestion that craft is supposed to have entered the world of theory as a result of his being influenced by the writings of John Ruskin. Also, Morris was not only influenced by Ruskin's theoretical writing on labour dignity, but he practiced them in his studio. In other words, Morris "broke an important barrier, for he made it possible for his many followers to engage in the work that had previously been reserved for the lower classes" (ibid, p.3). (Bruce Metcalf recorded his first protest against propaganda which placed crafts and craftsmen in lower positions, compared with art and artists in his article *"Crafts:*

Second Class Citizens?" (pp.1-4) in 1980). The above brief historical background regarding the ACM showed how social and cultural changes in any society can influence craft industries in general and crafts enterprises in particular.

Studying the challenges for crafts enterprises required deep understanding of the Arts and Craft Movement, as a craft movement that was established to face its periods crafts' challenges. This view is supported by Gabriel Craig (2008) in his work *'Craft and Culture Reform'*, when he suggested that "to understand the resurgence in hand production in the first decade of the 21st century, it is helpful to understand the role that hand production played in earlier industrial reform movements" (p.1). He also asserts that before the Industrial Revolution (mid-18th century) everything was made by hand, and in the late 19th century labour reform joined other reform movements such as the reforms suggested by Karl Marx and William Morris. The most distinguished crafts historian and reformer, William Morris, placed what he called 'Modern Crafts' in a larger social context, including labour issues, social justice and consumerism (Metcalf. B, 1999). This led craft to be treated as a tangible product accompanied by a wider subject matter (intangible heritage). This wider discourse, was not only about utilitarian objects to be used on certain occasions (ibid). Perhaps one of the most serious weaknesses regarding Omani traditional craft (represented in the PACI crafts enterprises) industries, is ignoring intangible cultural and traditional heritage expressions, which sometimes are considered as a subject matter of crafts as part of broader material cultural assets. In fact, the PACI crafts enterprises stresses the importance of function, and dissimilar to fine art (e.g. painting, sculpture), 'function' in crafts making is considered as the 'subject matter' as Howard Risatti (2007) asserted in his work *'A Theory of Craft: Function and Aesthetic Expression'* (pp.448-452). But this cannot be an excuse to ignore social and cultural contexts by the authority in its enterprises, where these contexts also form craft's subject matter.

Until the first decade of the 20th century, the Arts and Crafts Movement continued to be a movement which raised debates (e.g. fighting machines predominance, preserving craftsman skills, honesty in of use materials, protecting craftsman status etc) , especially when Europeans started to be involved in the movement in Great Britain (Naylor, 1980, p.184). Similar to this movement, the above debatable issues exist in the PACI crafts enterprises' contemporary discussions. It is worth remembering that a strong relationship exists between the ACM (debatable issues) and the PACI (challenges), but it is also important to consider that investigating each of them has to be within its social and cultural contexts.

To sum up, the Arts and Crafts Movement appeared to investigate fundamental issues (e.g. fighting machines predominance, preserving craftsman skills, honesty in use of materials, protecting the craftsman's status etc). These issues for crafts are still also investigated locally in Oman, especially in the Public Authority of Crafts Industries. Similar to the Art and Crafts Movement, the PACI fights for traditional crafts and protecting craftsman's status in both the enterprise and society. Also, the PACI stands against ugliness, mass production and machine domination.

The Bauhaus:
The challenges of Omani crafts cultural enterprises, regarding training in craftsmanship (including professionalism and specialization), and investigating the craftsperson's social status (in comparison with artists) are considered to be the most important issues which are relevant to the Bauhaus. So, it was important to invoke the Bauhaus movement's artistic and technical perspectives as will be shown in this part.

Beside the Arts and Crafts Movement, the Bauhaus was considered as another movement which was established to give crafts a high position alongside all other creative industries. As demonstrated in previous discussions, the Arts and Crafts Movement's most notable rejection in their firms was not using machines due to their negative impact on craftsmen. In fact this rejection was to change with the Bauhaus in the beginning of the 20th century (Scheidig. W, 1967, p.9).

In the Bauhaus declaration of 1919, Walter Gropius asserted that the major goal of the new enterprise was in making a combination of art, design, craft, sculpture and architecture "into a single creative expression" (Winton. A, 2007). In fact, crafts dominated the Bauhaus' main activities where students were required to attend pottery, metalwork, weaving and typography more than fine art classes (ibid). In her book *'Bauhaus Culture: from Weimar to the Cold War'*, Kathleen James (2006) stressed that the Bauhaus contributed in elevating craftsmen and put them in a distinguished position among artists when Gropius gathered art masters with craftsmen to give artists some technical experience (p. XV). Furthermore, Gropius' first aim, basically was to unify "the arts through crafts" (Winton. A, 2007), so it seemed that crafts took the centre position in the process. But in 1923 the goal took another direction, when the Bauhaus stressed "the importance of designing for mass production" and adopting the slogan's "Art into Industry" paradigm (Winton. A, 2007). But we still understand that in the Bauhaus, it was the first time to witness the attachment of craft objects to concept, style and modernity (Naylor.G, 1980). The above history shows how policies changed within a single enterprise (Weimar School), and this can communicate a message to enterprises and training centres (including the PACI) that there is no constant strategy or policy that is supposed to be used at all times. Mass production of art and craft as a strategy in the Bauhaus, for example, was rejected in the beginning of the movement, but it became necessary later, as asserted by Winton.

Crafts After the Post-war Period:
Crafts in general and crafts enterprises witnessed different themes, forms, theories, perspectives and knowledge after the post-war period. Tanya Harrod (1999), in her book '*The Crafts in Britain in the 20th Century'*, described the main improvements of this period's crafts, when she said that this stage had a new audience, new practitioners, new patronage, and shifted from private to public (p.244). Technically, she believed that this period also witnessed creative reaction in opposition to inter-war crafts "traditions", especially in terms of using new materials for the first time in craftsmanship, such as polystyrene and aluminum (ibid, p.254).

The table (1) below shows the aforementioned crafts movements and their shared arguments/developments with the PACI and Omani crafts:

The share features and arguments between crafts movements and the Omani crafts		
Art and Crafts Movement	**The Bauhaus**	**Post- War**
Mass production	Craftsman in factories and manufacturing firms	Creativity instead of traditions because of new materials
Capitalism	Craftsman similar to artist in the society	Completed merging between crafts and art (e.g. Picasso)
Machines domination	Art and craft in one firm	Governmental financial support
Protecting craftsman status	Developing crafts schools and training enterprises in very organised forms	Computer design influence (CAD)
Ugliness (in production)		Small Enterprises (SE)
		Consumerism

Table (1) showed aforementioned crafts movements and their shared arguments with the PACI and Omani crafts.

The table (1) summarised the chronology of crafts in general and crafts enterprises historical changes, in particular in the Art and Crafts Movement, the Bauhaus and Post- War period. Regardless of the time of any of these movements, some of the challenges which faced the Art and Craft Movement, more than a century ago, are still investigated in Omani crafts enterprises today. To illustrate, the arguments about 'mass production', 'machines domination', 'capitalism' (seeking profits) and 'ugliness' as the result of machines prototyping, can be found today in crafts enterprises (PACI) in Oman. Also the table shows the Bauhaus additions to crafts enterprises, such as elevating craftspeople's status, when they combined fine art with crafts, by gathering artists and craftsmen in one enterprise, developing organised training programs, and transferring the individual craftsman workshops to factories.

The Bauhaus additions are directly relevant today in Omani crafts enterprises, through the challenges of training, developing skills and designs, and the status of the craftsman compared with artists, as will be shown in Omani crafts, artistic and technical challenges. Some teaching methods used in the Bauhaus schools and training centres (e.g. studying materials, drawing basic skills etc) are imitated by the PACI in its crafts centres on one hand, and also the design department at the headquarters of the PACI. The training environment (e.g. dividing time between classes and workshops, inviting artists to present their experiences, etc) became other examples that showed mutual methods between the Bauhaus and the more recent training centres of the PACI. The table also, presented the Post-War era's developments especially consumerism, new materials used in crafts industries, and design creativity. This era's developments and associated arguments for these developments will investigated through studying Omani crafts artistic, marketing and consumption

challenges where the challenges relating to the demand for crafts', materials matters, and the PACI designer will be investigated in depth through the research. In other words, all these movements and their developments will be considered as a mirror image for the Omani crafts enterprise investigation in this research.

Field Data : Traditional and Developed Crafts in Oman:
Studying the development of traditional art and crafts within one community, was a subject investigated through social and anthropological studies, such as Robert Layton's (1994) study '*Traditional and Contemporary Art of Aboriginal'* which explored Australian traditional and contemporary art and crafts. Creating traditional or developed crafts, became an essential matter in the PACI crafts enterprises. In the Design Department, in the PACI, this issue is still unresolved as designers are divided, between supporters and non-supporters, of developing Omani crafts designs and their traditional themes (PACI, 2010). Abigail S. McGowan (2005) provided a deep study on how colonial India's craftspeople faced westernisation of their traditional crafts between 1851 and 1903, in her article, '*All that is Rare, Characteristic or Beautiful'*, in this study the author demonstrated the possibility of gathering together traditional and contemporary designs and ornaments. (pp.263-284). The author, for example, indicated that silver craftsmen in 1900, in Bombay, could make progress through mixing contemporary designs that came from Great Britain with Indian traditional ornaments when he said that "As those artisans began working side by side, they developed a hybrid style, combining European forms with decorative patterns amalgamated from Kutch, Bangalore, Burma, Srinagar and elsewhere" (p.271).

It is very significant to start this part with a quote from Neil Richardson and Marcia Dorr; "In many cases Omani crafts have remained essentially unchanged in form, process and decorative detail for centuries, if not millennia" (p.8). The authors used some examples to assert this perspective, such as the large storage jar found in the Yanqul site (north of Oman) dated to the Iron Age, which is similar to a large jar produced in Bahla (north of Oman) today, an item which continues to be used today (ibid). Their justification for unchanging crafts (forms and decorative patterns) is that Omani craftsmen's skills are passed down, from parents to their children, and the children have to preserve their parents' qualities and techniques (ibid, p.27). Neil Richardson and Marcia Dorr's justification made "skills" (professionalism) the main reason for the undeveloped form's and designs of Omani crafts, but this is not acceptable for many reasons. First, the skills pertaining to some crafts, are similar between craftsmen from different territories in Oman, also craftsmen from all over the world have similar skills (the throwing wheel technique of potters is still used today by craftsmen, but their products are very different from each other and fully developed). Second, if skills are responsible for the underdevelopment of Omani crafts, why did they (craftsmen) not use their skills, to put into practice developed forms and designs created by independent designers?

However, all the previously mentioned arguments suffer from some serious weaknesses. First, even when the authors mentioned, that in some cases Omani crafts have remained essentially unchanged for millennia, they concentrated in investigating traditional Omani crafts, but they did not explore the developed cases of Omani crafts. Second, Richardson and Dorr's project of documenting Omani crafts was published in 2003, before the establishment of the PACI, so all their arguments about developing Omani crafts came as personal suggestions from the authors, at a time when all the PACI research papers, conferences and recommendations, regarding developing crafts had not yet occurred (PACI, 2005). Third, the descriptive theme of Richardson and Dorr's book, did not contribute to investigating the issue of developing

crafts to satisfy consumers' demands, and according to the PACI, consumerism is considered as main factor to be accounted for in order to investigate developing crafts.

The experimental data from the industrial field of craft and art education teachers' experiments are rather controversial, and there is no general agreement about the way to develop Omani traditional crafts. In this research, more than 40 art education teachers worked in the SQU ceramic workshop to develop Omani traditional pottery within 4 months. In the end of the working period they presented a piece of paper associated with their art works (ceramic pieces) explaining their ideas and suggestions to develop pottery industry in Oman. Also, each art work was evaluated by another teacher by using a special rubric sheet prepared by the researcher. The images (1 & 2) below showed two examples (out of forty) of participants' contributions in this research:

Crafts' Design in Crafts Enterprise:
As established in data part, participated art education teachers views and arguments, secondary data and collected statistics supported 'developing' Omani crafts and pottery rather than imitating traditional styles, and they considered that developing crafts and pottery will not succeed without developing craftsmen's and potters' contemporary skills, and improving the design unit (Department of Design), at the PACI aiming towards achieving the goal of modernising Omani crafts and pottery designs and themes.

Investigating 'applying multi-themes' (developed and traditional) in craft making as creative industries, led to discussing 'craft design' in particular, which is different to other design areas. The theorist J. Christopher Johns, classified crafts designs as the lowest type of designs, among other design fields, such as architecture and graphic design (McGee, 1999). He claimed that crafts do not need design and craftsmen usually make objects by trial and error and they usually do not use drawings and sketches before making their objects (ibid). Moreover, he thought that in craft areas, there is no separation of designer from maker, and craftsmen must use the cheapest possible materials to reduce costs as a result of the usual errors and inaccuracies (ibid). In a contemporary contribution, Maurice Barnwell (2011), in his book '*Design Creativity and Culture',* partly supported J. Christopher Johns view, when he presented an example under the subtitle "*At Home in a Hot Climate*", which showed that Bedouin (man of the tent) in Arabian desert black tent constructs made from animals' hair were "responding to a different set of cultural controls" as a result of unselfconscious designs, made by tribal men in this area of the world (pp.24-25). Crafts' traditional forms

(design) in the past, rest on the same nomadic mentalities that unconsciously craftsmen build their crafts production, following their own environment's needs. In fact, as Maurice Barnwell mentioned:

"do not assume that the unselfconscious design process means old, outdated or inefficient. The design process is a natural activity of all humankind" (p.25). If truth be told, Maurice Barnwell asserted that "tradition is the enemy of progress" and "progress is the enemy of tradition" (ibid). Indeed, their claims about crafts designs were rejected by David McGee (1999) in his distinguished article '*From Craftsmanship to Draftsmanship*' (p.3), where McGee argued that according to J. Christopher, all complicated crafts objects such as wooden ships will not be considered as crafts because they were made with fully drawn and sketched designs. Even given that Johns' description of a crafts' designer was very old, according to the researcher's field data collection, many of his thoughts about crafts' design still exist in Omani crafts enterprises (including the PACI).

The challenge of 'developing traditional crafts' to meet consumers' demands in Oman required a concrete solution, and according to all aforementioned discussions and data discovered from the field, the solution can only occur by appointing a group of designers to achieve this goal, as an alternative of giving this design mission to not fully qualified and academically prepared designers. It is expected that the designers must be prepared to create 3D designs and to have full experience in the types of raw materials used in Omani crafts in the PACI centres. According to the collected data (Part5), Omani designers who worked in the Department of Design at the PACI have a 'lack of specialisation' in designing, while the majority of them have a general education or graphic design backgrounds only.

Choosing 'appointing professional designers' as a concrete solution will play a role in crafts enterprises (PACI centres), more than individual crafts projects, because those final crafts products in enterprises are usually evaluated in terms of success of failure in the marketing stages, and in contrast individual craftsmen, have less concern about marketing. Professional designers in crafts enterprises must be connected with craftsmen in the field, rather than staying in the authority offices, but the interviews showed that designers' interaction with crafts workshops and craftspeople was very low. Because 'appointing professional designers' has been suggested as a solution towards creating developed traditional crafts, it is very important to define the 'professional designer within traditional craft enterprise' and the definition itself should be clearly understandable in order to be used easily in the authority's enterprises.

The designer should be qualified to design tangible objects (3D), have complete knowledge of raw materials of produced crafts objects, have absolute understanding of the nation's cultural identity and heritage so as to be used as tools to develop traditional crafts, and finally have good understanding of marketing and the consumer mechanisms. To define a 'qualified designer' in craft enterprise, it is very important to refer to the Victor Margolin (2002) study '*The Designer as Producer*', when he identifies the characteristics of 'designer/entrepreneurs' in crafts enterprises. Victor Margolin stated that "Today, designer/entrepreneurs can do more than challenge the system of industrial production; they can establish their own niches in it.

In *Bahla* Pottery and Ceramics Training and Producing Centre (BPCTPC) production is divided between traditional and developed designs, as shown in the PACI publications and field data collection (visits and interviews). According to the supervisor of the centre, it

stopped making some types of traditional pots because of lower demand. And according to the centre's glaze maker (from the Philippines), Omani pottery needs radical development in decoration and firing techniques. Both claims show that pottery designs became the main issue in terms of developing this type of crafts. Furthermore, designs of developed pots came from the Department of Design (PACI), and according to the researcher's notes, models of production and published photographs, they only develop a few forms of Omani traditional pottery and there was less development in pot surface decoration.

As mentioned before, the Department of Design in the authority's headquarters is responsible for designing all the developed crafts in the PACI and that means there is no concentration on any type of product, including pottery. According to collected data, especially from (BPCTPC), this department's designers were not prepared enough to design ceramic and pottery objects, as they have no intensive experience in mould making, firing techniques, developing glaze recipes, clay types and temperature ranking, knowledge about availability of materials in Oman(clays, glaze natural materials) and even basic 3D design skills. This in fact asserted Victor Margolin's definition of 'designer/entrepreneurs' when he mentioned that the designer has to be in direct contact with craftspeople, materials, and have all the making skills that can help him/her to imagine final products and outcomes (2002). The designers lack of field experience in making pottery and ceramics' glazes, for example, will make it hard for him to design pottery and ceramics pots with special affects and surface decorations, such as crystalline, salt and raku glazes and slips.

Designers also face another challenge, which is not only are they unprepared for the aforementioned skills, but they also lack the ability of interpreting the heritage and cultural themes to transfer them to pottery production (colours, glaze textures, modifying pots' functionality, interring Arabian calligraphy, focusing on showing pottery in open spaces, contribution of pottery in architectural purposes etc.). As explained in the literature the importance of using cultural and heritage themes, ornaments and textures in making crafts in general and pottery in particular in Oman, was asserted by Richardson and Dorr (2003), in a complete partin their documentation study '*The Crafts Heritage of Oman'* (pp.32-56). In that part of their study, they connected the uniqueness of Omani crafts (including pottery) with special elements of designs, patterns of construction, Islamic ornaments, colours and tones related to Omani landscapes, geometric and symmetry forms, manipulation of texture, calligraphy using energetic letters forms, complex patterns of geometric motifs and interlocking circles (Richardson and Dorr ,2003, pp. 32-56). Abigail S. McGowan (2005) stressed on the importance of each society's cultural, social and heritage uniqueness to be invested through crafts industry, in her work '*All that is Rare, Characteristic or Beautiful',* and she claimed that the uniqueness of a society's traditional characteristics, is a central factor to developing the traditional crafts industry. In order to identify Indian crafts design special characteristics, among other societies unique design values, she stated that "critics identified colour harmony and judicious use of ornament as the distinctive contributions of Indian design, offering the most important lessons to British industry" (p.268).

Investment of cultural, heritage and artistic characteristics of any society in the crafts industry, in reality, can help to safeguard the intangible heritage of skills and knowledge of *Traditional Craftsmanship*, as was recommended by UNESCO. For instance, a project nominated in 2009, and accepted in the UNESCO intangible heritage list, traditional design and practices for building Chinese wooden arch bridges in Fujian Province, and the south-western part of Zhejiang Province in China in 2009 (UNESCO, 2009) can be used as a complete example to reflect the importance of gathering together 'specialisation in design',

' involvement of unique handwork (craftsmanship) techniques', 'involvement of intangible heritage and cultural elements', and the 'importance of intervention of new technologies' in a crafted masterpiece.

Furthermore, the PACI designers showed less understanding of pottery and ceramic marketing and consumption issues locally (purpose and functionality of pots today, weight of pots for tourists, home internal decoration styles etc.) which will be discussed in depth in the marketing and consumption part in this chapter. The diagram (2) showed craft enterprise designer's qualities:
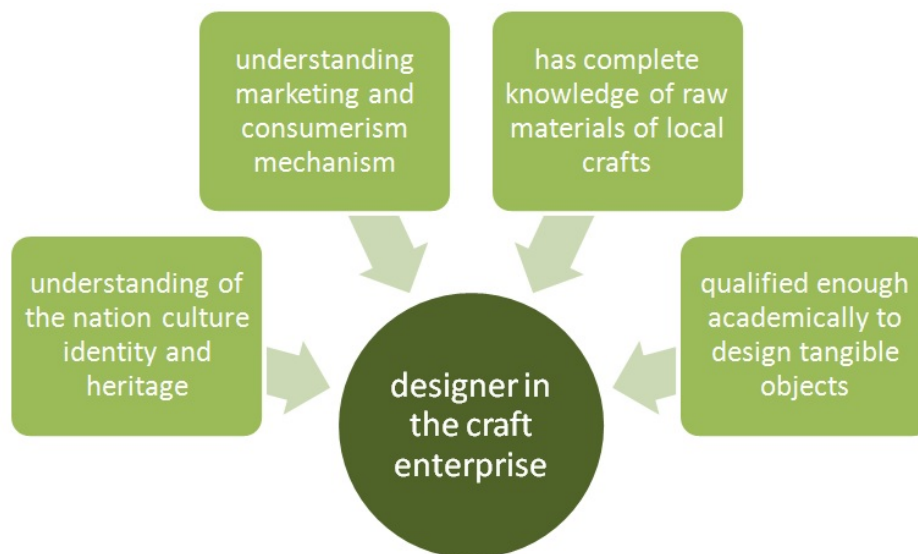

Diagram (2) craft enterprise designer's qualities

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It was the 15th of December

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The IAFOR International Conference on Education – Dubai 2016
Official Conference Proceedings

Abstract

A reflection on the merits of an a priori poeto-epistemology in relation to tacitly held assumptions about the a fortiori validity of computational logic to transcend the limits of contradiction and infinite regression and establish a valid ontology.

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"IT WAS THE 15th OF DECEMBER, 11 am, just got out of bed… ahhh… ordered myself an espresso… there's this beautiful waitress, with enormous sunglasses — it's still good, it's still good weather… Smoke cigarette—as I said I ordered my breakfast; I wait, and I wait, and after about three quarters of an hour, there is no, breakfast yet… in some kind of urge I just get up from my chair, walk to the waitress, take off her sunglasses, and I realize this is—like—at the verge of sexual harassment, so I put her sunglasses back on, retrieve myself to my chair, and wait see what happens…

"To my astonishment, the breakfast comes, but with it, the waitress comes, although she's working she's sitting next to me, and she stays there, she stays put… I don't know what to do! I just eat my breakfast, and all of a sudden I just—because I have to say something because she stays sitting there… I say, listen, I just back from Chicago, last night I met my redhead Jewish friend who was this sort of like, big real-estate broker… you know, this hotel, the Maritime Hotel, since it's the Maritime Hotel, has circular windows, and maybe, my friend and I, want to buy this place, and then, all the windows will be square…" **†**

—— Luc Tuymans, Belgian artist

The above prelude is meant not to describe the contents of this paper — which, like the breakfast, are yet to come — but as a signal to draw our attention to a type of proto-logic that conditions everything that comes after it, whether it be (non-) sequitors in an infinite regression of contractions looping back to a non-starter or something that genuinely does begin, like a breakfast with a pretty de-spectacled waitress who now sees clearly the complexity of an artist struggling to 'de-calculus' a porthole into a square in downtown Chicago with the aid of a big Jewish redhead real-estate broker who ostensibly would be adept at 'brokering' a continuity of rotund symbols into block abstractions from the vantage of an Archimedean point somewhere near sky-lab…

[3, 032 words: Universals, contradiction, paradox, Parmenides, Bertrand Russell, R. D. Laing, Bergsonian duration, quantum mechanics, relativity theory, nominalism, essentialism, necessity, nature, vacuum, infinitesimal mathematics, Wittgenstein, language games, Pythagorean numbers, sublimation, incarnation, chunks.]

It was the fifteenth of December and I was sitting at the counter of a lovely cafeteria in a downtown Woolworths not too far from the University of Chicago which had closed suddenly due to a fatal shooting of a student who perhaps may have disagreed with an illustrious professor from the Committee of ('Black Sheep') Thought — from the fifteenth chapter of his fifteenth book no doubt, which made it such an ominous day in the annals of academia, which perhaps had its origin in another fateful day on the shores of the Mediterranean where a man, a writer of constitutions — no less — gave a fateful lecture on the way of Truth versus Opinions to an audience which included a twelve year old boy well before his stature would be assured as one of history's greatest practitioners of a now defunct art of dialectical reasoning at the service of something called 'universals' with a capital U. And in the case of both the constitution writer and the young disciple, these Universals issued from the mouths of women, the first a goddess whose name has remained unknown, and the second someone named Diotima whose reference remains unknown to history…

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† https://youtu.be/kGBPJNtK0Sw

All of this to pose the question of whether (Pythagorean) numbers don't exist in the same manner that lexical universals don't exist according to the hoi polloi. And could this be extended to include (Jungian) archetypes, Orphic notes, Jewish letters, Christian logoi and so on…

It appears that for a long time people have been discussing 'things' that don't exist. And perhaps with good reason because we ourselves now in our judiciary cannot do without universals, even though in the academy we may deny them. For example, what is a human Right, ontologically speaking? And if Bertrand Russell solved the problem by medievally drawing a distinction to get out of the contradiction (i.e. subsistence to replace existence) is not the same trick applicable to all the other universals including God?

That would mean that 'subsistence' is more of a predicate than existence, especially if we are embarking on a true 'starter' instead of defaulting back into an infinite regress of terms adopted simply for the psychological comfort of avoiding a contradiction. In this case, the true enquiry here would be to unpack the nature of contradiction itself (which might be the starting point for a different sort of logic that could well lead to the 'ontos' of Right and Wrong — or as Parmenides put it, thinking in Black and White (categories) which are the same and not the same (probably at the same and not the same times).

However, how would anyone unpack a contradiction unless it was not purely an abstraction? I'm not sure if the term 'concrete contradiction' has ever been used in the history of philosophy (to accompany concrete universal?) but it must have surely befuddled and bedeviled anyone who ever tried to engage with it 'concretely', not least of which, the characters in R. D. Laing's Knots. (It also did quite an asylum number to some of those who tried it in the abstract, like Cantor.)

Squaring windows or rounding squares in abstracto to calculate a perfect arch in the concrete is safe fair, but who would of thought of unpacking a concrete contradiction as the road to bergsonian duration? And why?

If saving our dignity by proving that Rights really exist isn't enough, we could also add " … a bridge from the method of techno-science to the method of museo-history…" For example, at the frontiers of our normal spacio-temporal framework, we all know, since Einstein, that the classical laws of physics had to be radically extended to include phenomenae beyond its boundaries in the para-normal skies and in the sub-atomic fields. Everything else inside the framework can be faithfully re-peated, but the skies are contaminated by the time it takes for light to travel to us (the past) and sub-atoms are contaminated by spooky relations at a distance that are not loyal to any principles of non-contradiction, excluded middles or locality (substances that are not only invisible but also in-consistent). The first contaminant led to relativity theory and the second to quantum mechanics. And we have yet to discuss the contaminant of the (non-epiphenomenic) Mind, which we have now discovered thanks to Dr. Bruce Greyson;[*] and the laboratory of (open-source) Nature; Which begs the question of what it is that repeatable experiments actually confirm.

How much of the universe is amenable to isolation in controlled conditions long enough to confirm the sort of hypothesis that would be hypothesisable by someone obsessed with 'stealing' Nature's thunder (the light of understanding?) rather than becoming her disciple?

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[*] https://youtu.be/9kUyFeSizr0

The former's modus operandi in discovering the cause of the superior longevity of women over men the world over, would be to pour over statistical data: men do more dangerous jobs, live with more stress, smoke and drink more, etc… The latter's modus operandi? You can't test a hypothesis that you have yet to conceive, nor can any test of the above statistically derived hypotheses prove definitive (they may only be supporting factors). And what if the postulation of the 'correct-to-be' hypothesis coincides (by necessity, not accident) with a eureka moment of insight that is-to-be true by necessity (i.e. women outlive men by virtue of their contact with children)?

But it behoves us now to explain what is necessity and why is it necessary even if it is at the antipodes of an epistemology that includes at the opposite end of the boxing ring a technology qua science that bases itself on reproducing 'accidents' and elevating them to the rule (without ever looking to the law of which they in turn are the exception which proves the latter).

(And what kind of language accompanies the former to the latter?)

The latter to the former? Can a nomenclature associated with naming sensible things and events elevate itself to include the naming of universals which are not as empty shells but something beyond nominalism? If nobody knows for sure what the thoughts in their head really are, substantively, how can they know the inner workings of universals — should they ever encounter one — outside a church? Do (unapplied) numbers exist?

If the techno-scientist names things and events and in-visible phenomenae (either directly or indirectly) then universals, I respectfully submit to you, may name themselves through their own "channel" usually identified with spontaneously combustible fire or transfigured light — and for very good reason…

(Because necessity abhors a vacuum.)

2.

Likewise with something like the converse: nihilism disdains obligation. How difficult is it for western educated youth to accept the platonic wisdom that you don't really know anything if action doesn't follow from it (because, to their way of thinking, it pre-empts the privilege of choosing to do it, which seems on the surface to be a more valuable power than the obligation to do what you now 'know').

The issue here is framed as a freedom of choice vs. an obligation to act. The former is perceived as a power (liberty) and the latter as an impower (pre-destiny) — at least for youth and for those who wish to exploit these values for their manipulative power over the population.

However, the converse may also be true: random ex-nihilo choices based on a hidden pre-conditioned facticité may be masquerading as freedoms; And knee-jerk reactions in times of crisis may be masquerading as real power. All of this pivots on the nature of the prior blank slate 'emptiness' that is necessary for true freedom and the fullness of our dignified ideas that are a pre-requisite for convincing action. The former escapes the blind conditioning of our animal nature and the latter escapes the impotence of abstractions on the part of a self-programmed man — at least that was the hope of modern science.

But in order to maintain the Enlightenment's illusion of success a novel jiu-jitsu had to be created here to bypass the contradictory-redundancy that Wo-Man had already to be free (a priori) to properly discover the truth of her freedom; concomitant to the paradox of (Augustinian) theology that had to scale the problem of a sin that is based on a lack. It seems that everyone has had a problem with finding or escaping 'substance' when they needed to.

Furthermore, according to physicists who are in agreement with Blaise Pascal, "Nature (also) abhors a vacuum." So wo-man is hit with a double wammy: both the spiritual and physical realms seem to conspire against her in making 'substances' appear and disappear, both when they are needed and not needed, and / or vice-versa, depending on the observer's frame of mind, if s-he has one, either at the same or different times, at the same time or at different times… ad infinitum.

Of course, all of this, I respectfully submit to the reader, is based on the 'illusion' that 'mental' abstractions concomitantly exist empirically in an 'exoteric' 'physical' world. In other words, a number really exists — not in the pythagorean sense, but in the technologist's sense.

Likewise with events: they really happened 'discretely' without any contradiction between movement and existence, not unlike the way a film strip made up of discrete frames can be used to produce a fluid reality in a movie theatre. And any contradictions that arise (if we were to slow down the projector) can be smoothed over by an infinitesimal mathematics that itself is not prone to the same contradictions (outside the padded room hotel).

The ultimate metaphysical question here then becomes: "How do you truly begin (with action that is not a re-peat — the very opposite value of techno-science) and how do you truly know whether your knowledge bears any (non-arbitrary) substance?"

Technology cannot solve this metaphysical and existential problem (of epistemology). The methods of techno-science do not, and can not, address it. It rests entirely outside its domain. And in fact, the answer here is reducible to simply "I am that I am." No questions needed. "What is, is." "It is good." "Yes!" But I'm getting ahead of myself here.

3.

The great challenge for the thinking man's doctor is to explain, regardless of whether we take a bottoms up (evolutionary) or top down (confessional) approach, how we get a world if the vocabulary of both the doctors of the church and the polytechnical academy issues out of the mouths of nominalists (of both the dancing on the head of a medieval pin, or of the post-Wittgensteinian players of language games, variety).

(How do we get a world without content to begin with? Or with only content to begin with?)

To give a more modern example of the former, if the 'contents' were only cyphers, as many statisticians believe and many, if not all, our western school children are taught to believe, how do you get a unique individual?

This problem was underscored in recent memory when a quintessential Canadian writer named Pierre Burton, for the sake of an official event, was asked — purely as a formality — to prove that he was a Canadian; to which he steadfastly refused, since to the popular

Canadian psyche, one can say that Pierre Burton is not an example of Canadiana, but its defining standard. This was an extraordinary example of old world essentialism vs. technocratic nominalism, though the philosophico-historical context was lost on the 'semilliterate' (if the reader would kindly excuse my double-entendre) media.

And now to give a more modern example of the latter, if the 'contents' were only concrete individuals, like sheep that don't need to be counted because the shepherd only knows each of them individually so that he would be obliged to count on his fingers and toes if ever it came to that; how would you get an abstraction if you needed one? For example how would you derive a total price for (some of) the herd, especially if some sheep — if that was even possible — were 'worth' more than others to you?

It would be difficult to do if you only had one number that had to be used over and over by counting on your fingers, toes, etc… (the very very ancient Greeks conceived of using 'match sticks'). In this way, a whole continent could be sold or bought for some ridiculously low price…

Traditionally, the problem of the former was the mystery of incarnation and that of the latter the mystery of ascension — perhaps by 'spiritual' sublimation, each involving an inverse movement of change in the opposite direction. Perhaps for this reason, the word sublimation has acquired both meanings referring to movements towards higher supra-consciousness and lower sub-consciousness.

4.

Now it is not only the apotheosis of number that causes a problem for an animal after he evolves into an ensouled or enthused wo-man, but also the apotheosis of words: i.e. Justice, Love, Right, Courage, Beauty, Fidelity… ad infinitum.

Somewhere in media res between beast and gods, both the concrete referent and the ideal universal got lost (forever)… Replaced by a label, icon, logo, reified, opaque, stained-glass-bullet-proof-stereotyped-diabolical-blood-fined CHUNK! What can we call the present day wo-man raised on gross images and fully brainwashed by industrialised schools, televised ministries super hyberbolised techno-babble and super-sentimentalised music in an ultra-monde that has gone super-nova! (Will a transgender pope from Mars one day apologise to cave men for desecrating their earthly cave paintings?)

The CHUNK in media res is a by-product, I respectfully submit to the reader, of the unpacked concrete contradiction I wrote of earlier. It is as much a simulacrum as any cinematic image and as much a counterfeit as money without a standard. It only commands belief because men and women cannot live without it: (being half spiritual and half natural they also abhor vacuums). — Even the great Guy Debord survived his brand of critical theory nihilism through alcoholism until he blew out is chest with a shotgun.

It is only by-product because an inverse product is produced esoterically to balance the exoteric projection. And here this subtle movement — which defies normal awareness — splits (as with 'sublimation') the meaning of the word daimon / daemon / demon into a valedictory and a notorious meaning as with 'genius' in the former and 'demonic' in the latter ('genius' being the Latin translation of the Greek word that made it into English).

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Challenges That English Language Learners at College Level Encounter When Studying Mathematics

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Abstract

A number of students who are non-native speakers of English are expected to undertake the two-fold task of simultaneously learning a new language and content area. The issue becomes critical and challenging when these students have only started learning the language at a later stage of their educational journey, like in college level. They are supposed to study a mathematics course in English at the same time. The purpose of this pilot study is to identify the challenges that English Language Learners encounter when studying a content area of mathematics. It also aims to identify similarities between teaching Math and English, and finally examines the possibilities of collaboration between English and Mathematics teachers to support the learners. A pre-teaching knowledge assessment was run in class for a number of students, before start teaching mathematics. It aimed to explore what math vocabulary the students already knew before start learning the subject in English for the first time in their whole years of academic studies. The results of the assessment showed a lack of basic math vocabulary amongst the learners. On the other hand, a survey was conducted amongst both Faculty, math and English to collect their opinions about challenges that ELLs encounter, to explore the similarities between teaching math and English, and then to find out the possibilities of collaboration between both faculties to support the learners. The results suggest Faculty realizes that students encounter a challenge in learning English and math simultaneously, and they are willing to collaborate.

Keywords: Collaboration, Mathematics, English, Language, ELLs, IELTS, Limitations, Barriers, Challenges, Difficulties.

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Introduction

English Language Learners at College *Foundations* level learn mathematics as well, which is mediated through English. The limitations of English language lead to limitations of learning mathematical concepts especially when ELLs are expected to be eventually able to understand and solve real-world exercises and problems. This paper argues that (1) ELLs encounter challenges when studying a subject content, (2) that teaching Math is similar to teaching English, and (3) that collaboration between teachers would support ELLs. A pilot study was conducted for that purpose. A group of non-native speakers of English who are students of College Foundations program is given a brief initial pre-teaching assessment. The aim was to find out whether they were able to identify math vocabulary, expressions, and symbols in English. The results will help the teacher well plan the assigned math course that these students will study during the semester. On the other hand, English and Math Faculty responded to an online survey. The purpose was to probe their opinions about the challenges that ELLs encounter when studying mathematics, and how to support them through a collaborative effort from all concerned teachers. The small-scale pilot study focused on four major issues:

● Identifying the challenges & difficulties that ELLs face at College Foundations level.
● Identifying the importance and benefits of collaboration between English and content teachers.
● Identifying barriers to collaboration
● Proposing ways of collaboration.

Literature review

 "Mathematics can be particularly challenging to ELL students because mathematical knowledge consists of three components: linguistic knowledge, conceptual knowledge, and procedural knowledge." (Moore-Harris, 2005). Learners come with a limited number of necessary mathematical vocabulary. They may get confused when they realize that the "addition" operation, for example, may appear in a variety of different terms.
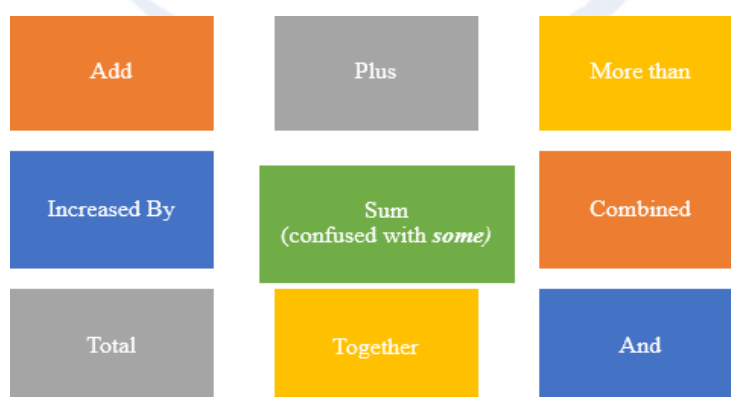
They also discover that some terms do not always translate as should, like in the case of using "Some" and "Sum." The content course may also introduce examples, exercises, and word problems that may not be relevant to learners' lives. The students also find it difficult to understand what may appear as an abstract concept to them. According to Haynes (2009), "Problem solving is not just language but a thought process." Consider the following real-world problem:

A pancake recipe requires two and one quarter cups of milk to one cup of flour. If three and three quarter cups of milk are used, what quantity of flour will be needed, according to the recipe?

In this word problem, learners need to understand the meaning of a fractional amount, and how to mathematically write it, need to figure out the syntax, and above all they should know key vocabulary. They should also be able to create a relationship between different variables, and finally, come out with a way to solve it. Unfortunately, some English language learners may resort to what one may call a surface learning by reading an explanation of how to solve such a problem, and then "imitate" the solution by only manipulating or replacing the given numbers, which is a rote learning of math. There are three dimensions of word problems that students should pay attention to- the genre (language), mathematical structure, and personal experience (life). The three aspects are interrelated as shown in the figure below. (Bryant, 2014)

The culture differences may also not help the students to adopt the correct procedures when solving a math question. This matter may include, for example, reading and writing from right to left, mixing up between using commas and points, and being familiar with certain systems of measurement and not another such as Metric System. There is a misconception amongst some students and educators that Mathematics is just arithmetic. It is not! (Haynes, 2009). Teachers should be aware of the fact that the learners must acquire sufficient lingual abilities and skills in the language of the medium in a way that would qualify them to learn the subject matter. In the absence of such qualifications, the learners will be receiving a rote learning that has no meaning and does not relate to real life. Lack of English language knowledge may also result in low self-confidence. Texas State University System (TSUS) and Texas Education Agency (TEA) collaboratively produced The Teachers Guide to Teaching Mathematics for English Language Learners (2005).

The guide argues that ELLs sometimes have reservations about participating and interacting in class, asking questions, attempting a task, showing work, and explaining answers, due to limited vocabulary and language proficiency. There is then, a need for collaboration between English teachers and subject teachers to support these ELLs. The collaboration will help and support all the stakeholders. It will enable the learners to comprehend better the mathematical concepts that they are learning, and at the same time develop their language communication skills. It will give the subject teacher the opportunity to introduce more real-life word problems, which stands as a core learning objective. Finally, English teachers will be able to add more mathematical terms, words, and expressions to enrich their course. The collaboration should be seen as an easy process because there are so many commonalities between English and math. Both are learned through structures: Math through rules, and

English through Grammar. Both follow up a building-up process i.e. an accumulation of knowledge. Both are taught through visualizations and illustrations. Gough (2007) suggests that "mathematics is not a natural language but a formal language, artificially constructed, using our everyday natural language in teaching the mathematical language." (Leshem & Markovits, 2013). But, is the translation from English to mathematics similar to translation from English to French for example?
Consider the following question found in most mathematics courses:

Translate *the sentence into an equation.*
Use x as a variable
"Eight times the sum of a number and 6 equals 10".
The question starts with the term "Translate" which is a process taking place between two "*Languages*", yet this a different kind of translation, because mathematics language has its own nature. Barwell (2002) states that "Mathematical discourse has a number of distinctive features, including some aspects which are particular to mathematics classrooms." He describes these features as mathematics disclosures, and list them as the "mathematical vocabulary, the mathematics specialist syntax, the mathematical symbols, the specialized mathematics ways of talking, and finally the social dimension." It is the responsibility of the teachers to create situations in class where learners can practice translation to mathematics through these five features.

Method
Collins Dictionary defines a pilot study as a "small-scale experiment or set of observations undertaken to decide how and whether to launch a full-scale project." It stands as a crucial element of a good study design (Teijlingen and Hundley, 2001). (Crossman, 2016) argues that pilot studies are useful because they help the researcher to "identify or refine a research question, identify or refine a hypothesis or set of hypotheses, identify and evaluate a sample population, test research instruments like a survey or a questionnaire, and assess and decide upon research methods." This pilot small-scale study was conducted in one college only. The participants were merely a small population of Foundations students and their respective teachers. If it proved feasible and advantageous, then it would be extended it to a full-scale study to include much larger number of participants, and in more than one college. It was both, quantitative and qualitative. Quantitative, because it includes a survey and a questionnaire. On the other hand, it is a qualitative one, because it describes a problem that ELLs, and teachers of Math and English are trying to deal with. (Teijlingen and Hundley, 2001) argue that "One of the advantages of conducting a pilot study is that it may give advance warning about where the main research project could fail, where research protocols may not be followed, or whether proposed methods or instruments are inappropriate or too complicated". However, pilot studies have their own disadvantages and limitations. These include the possibility of making inaccurate predictions or assumptions on the basis of pilot data; problems arising from contamination; and problems related to funding. (Crossman, 2016). The participants of this pilot study will not be part of the full-scale study, and the data produced will not be used as well. This kind of arrangement will eliminate the possibility of contamination. It will also render a more valid and reliable study.

Study design

A)   Pre-teaching assessment

High-school graduates, who are Arabic native speakers, join the Foundations program at the college before starting a specialized program. These newcomers have spent twelve years of schooling in a non-English medium. They arrive at college with a feeble English language if any, and so they will have to join an intensive English program. Alongside the intensive English course, they must learn two courses of mathematics in a non-native language. The Foundations program is a one-year duration, at the end of which learners sit for an IELTS, The International English Language Testing System to determine whether they have the ability to complete their course of study where the medium is English. They should score an overall band of 5 or more. Also, the learners will have to pass the Math One and Math Two successfully. As part of the pilot study, initial pre-teaching mathematics assessment was produced, but in English. The aim was to find out, and before start teaching the designated math course, what students knew about English math vocabulary, symbols, expressions, etc…

Since new knowledge and skill is dependent on pre-existing knowledge and skill, knowing what students know and can do when they come into the classroom or before they begin a new topic of study, can help us craft instructional activities that build off of student strengths and acknowledge and address their weaknesses.(The Simon initiative, 2008)

A small population of fifteen students was asked to take this test on the first day of their first college semester. There were no written instructions on the test paper as shown below, because they will simply be hard to understand and follow. Besides, this was like a chance for them to write what comes to their mind without being restricted to follow specific directions. The students were merely told to fill in the column on the right- hand with whatever they knew about each of the symbols, numbers or sentences that appeared in the left-hand column, but in English. They were given thirty minutes to complete this task.

1	+	
2	-	
3	÷	
4	x	
5	<	
6	≥	
7	=	
8	*One million ten thousand*	
9	*Seven thousand five hundred nine*	
10	29	
11	1025	
12	3520	
13	3.5	
14	Give one even number	
15	$\frac{1}{9}$	

Analysis of results of the pre-teaching assessment.
[Correct answers with spelling mistakes. were accepted]

	Percentage of correct/acceptable answers	Samples of answers and comments
+	**71%**	add, (plas), plus, (Give one and more one), (Give more number), (place), (plast), and, (pluse)
-	**57%**	Minus, (minas), (mines),(minic),(mince),(maines)
÷	**7%**	(divid)
X	**7%**	(time)
<	**7%**	(big number in right)
≥	**14%**	(big number in left)
=	**7%**	(same)
One million ten thousand	**0%**	(100100), (1,10,000)
Seven thousand five hundred nine	**42%**	(7059),(7500)
29	**78%**	(towinty nine),(two nine), (twenty nigh)
1025	**50%**	(ten twenty five)
3520	**43%**	(one thousand fivete tow)
3.5	**43%**	(three million five), (three boint five)
Give one even number	**0%**	The students who responded to this part gave odd numbers instead
$\frac{1}{9}$	**43%**	(one and nigh), (one on nine), (one ÷ nine)

The results of the pre-teaching initial assessment suggest that English Language Learners are not at the appropriate level of English. Consequently, they may not be able to learn a subject matter. Individual needs should be identified and any proposed learning plan must address these needs.

A)   Teachers' Survey

Teachers of Mathematics and English for the Foundations level at the college, are a mixture of native and non-native speakers of English. However, all must teach and communicate with the students in English. This rule is set up to help the learners achieve the ultimate aim of developing their second language to the extent where they would able to continue their course of study in the new medium of teaching and learning. Teachers share the responsibility of making the transitional year between high school phase and the phase of specialization in the course of study, a successful one. Therefore, it was essential to this pilot study, to survey their opinions about the difficulties that ELLs encounter when studying English and math, any similarities in teaching the language and the subject matter, and aspects of collaboration among teachers. The main aim of this survey was to explore the possibilities of initiating a collaboration between English and Math teachers to support the Foundations students. **(**Wyse, 2012) states that "Conducting surveys is an unbiased approach to decision-making…and a survey results provide a snapshot of the attitudes and behaviors – including thoughts, opinions, and comments – about your target survey population." It was a four- question survey that would only take a few minutes to complete. (Shuttleworth, 2008) states that "You must keep your questionnaire as short as possible; people will either refuse to fill in a long questionnaire or get bored halfway through." Teachers were encouraged to respond because their feedback was valuable. The survey was conducted online to ensure privacy and render a non-intimidating circumstances.

In a non-intimidating survey environment, you will learn about what motivates survey respondents and what is important to them, and gather meaningful opinions, comments, and feedback. A non-intimidating survey environment is one that best suits the privacy needs of the survey respondent. Respondents are more likely to provide open and honest feedback in a more private survey method. Methods such as online surveys, paper surveys, or mobile surveys are more private and less intimidating than face-to-face survey interviews or telephone surveys. **(**Wyse, 2012)

Analysis of Survey results

Twenty two teachers of English and math, out of total of forty one, responded to the survey. Here is a summary and analysis of responses to each question:

Q.1 Do you agree with the following statements?

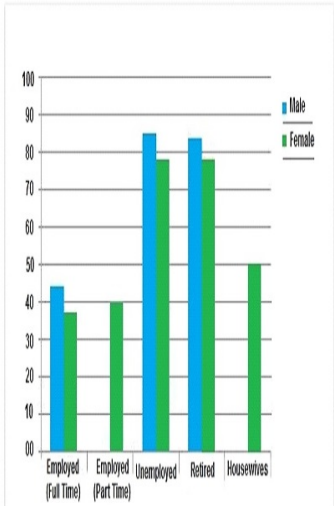|	Agree	Neutral	Disagree	Total
Most of my foundations students have trouble learning a new language at college level.	72.73% 16	22.73% 5	4.55% 1	22
Most of my foundations students have trouble learning Math in a new language.	68.18% 15	31.82% 7	0.00% 0	22
Most of my foundations students have trouble dealing with the writing task of IELTS where they are required to analyze, interpret and discuss graphs, tables, and charts.	95.45% 21	4.55% 1	0.00% 0	22
English and Mathematics FND teachers share the responsibility of enabling the students to successfully learn both subjects.	68.18% 15	18.18% 4	13.64% 3	22
Some kind of collaboration between FND Math and English teachers may help our students perform better.	86.36% 19	9.09% 2	4.55% 1	22

The responses to the first statement indicate that learning English at the college level is not easy (Agree: 72.73%). The students did study the elementary level of English while they were at school. Was not sufficient? Should they be exposed to more advanced and intense English before joining college? There is a general opinion that young children find it easier to learn a second language than adults? Does it become difficult to pick up at an older age? (Schmid, 2016) conducted research that "does indeed suggest that our capacity to learn a language diminishes gradually over our

lives." (Weitz, 2011) argues that the little children minds "soak up foreign languages like a sponge." 68.18% agreed with the second statement. This rate is close to the first question result because learning math in a new language and at this age is a challenge for these ELLs. They still do not know the mathematical vocabulary, syntax, and symbols. Does the situation get better after the completion of the first math course? My teaching experience as a math teacher suggests that it does get better. The 95.45% agreement on the third statement does support the opinion that "Pupils are not adequately equipped with the critical thinking, graph literacy and reading skills to succeed in IELTS." (Pennington, 2016). The figure below shows a sample of a question in an English test, and the other one is an in a Math test. The first is the Academic IELTS* Writing task, where examinees are required to write a report for a university lecturer describing the information shown in a graph. They will have to read, interpret and analyze data. They should be able to compare similarities and differences, determine the significance and trends in the data. In the end, they will have to write a report describing all of the above findings. On the other hand, the Math test question is ALEKS* math course that is being taught at Foundations Level. Examinees are required to interpret the data and answer accordingly. It is clear that both questions demand both, an adequate level of English proficiency and mathematical knowledge and skill. It is an aspect where English and Math teachers can collaborate to support learners.
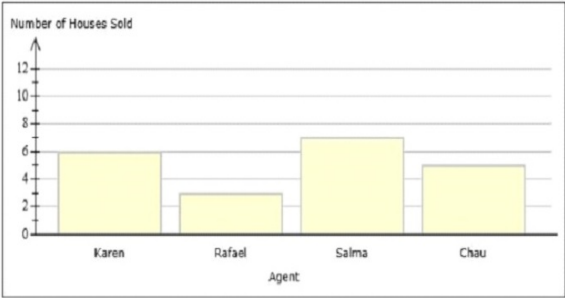
Q.2 Teaching Mathematics has been thought to be similar to teaching English because both are learned through structures (i.e. Rules in Math and Grammar in English). If you think there are other similarities in teaching Math and English, please describe them in a few words.

10 teachers responded to this question:

- I can't think of any apart from the formulaic structures that may apply to English language to an extent.

- Not really- just vocabulary is something that is shared. Math and grammar are not so parallel. Grammar has many exceptions and different kinds of restrictions.

- Sentence structure v/s equations

- They're quite different apart from in the teaching of structures but even then the approaches to teaching are probably different.

- Teaching structures

- Only in terms of learning structures. EFL uses every some of the same math language and symbols such as +. Otherwise it's very different.

- Practicing learned concepts is critical and necessary in both subjects. No practice/no progress. Imparting information through visual cues. Symbols and shapes in math vs. pictures and signs in English

- If both taught in English, then they share the same vocabulary

- I don't think that there are many similarities, but you students definitely need to learn some terminology in order to learn the math. I believe it is quite possible to learn math without having a sophisticated level of English.

- At the college, math is presented in English. If you're teaching a math lesson, you may have to teach an English question structure: Example: What percentage of ... How much?

Some teachers indicated other commonalities between English and Mathematics than learning structures, such as vocabulary, some symbols, and shapes.

Q.3 Based on your experience, which of the following mathematical skills and concepts may be helpful to foundations students? (Select one or more answers)

Answer Choices	Responses	
Reading numbers	75.00%	15
Recognizing and drawing shapes	40.00%	8
Counting numbers	45.00%	9
Reading and analyzing graphs and charts	100.00%	20
Performing operations (+,-, x, etc....)	50.00%	10
Reporting results	90.00%	18
Other (please specify): Responses	10.00%	2
Total Respondents: 20		

The responses to question three, especially in the three choices of reading numbers, reading and analyzing graphs and charts, and reporting results, concur with the results of the statements in the first question.

Q.4Which of the following teaching methods and tools, may teachers of both English and Math collaboratively use to support learning of both subjects? (You may tick off more than one choice)

Answer Choices		Responses	
▾	Share common vocabulary	100.00%	19
▾	Use of hand gestures	21.05%	4
▾	Use manipulatives	26.32%	5
▾	Use charts and graphs	94.74%	18
▾	Use sentence frames in Math classes	52.63%	10
▾	Use mathematical language in English classes	78.95%	15
▾	Other (please specify) Responses	21.05%	4
Total Respondents: 19			

Sharing vocabulary seems to be the most effective tool that teachers can work on collaboratively. (Chung, 2012) states that "Vocabulary acquisition plays the most vital role in ELLs learning of the English language", and suggest that vocabulary knowledge would help the learners in closing the literacy achievement gap.

The 94.74% for the use of charts and graphs suggest that majority of teachers want to emphasize on the necessity of enabling the learners to develop critical thinking and analysis skills. It is also encouraging to see that 78.95% of teachers, most of which teach English, are willing to use mathematical language in their classes.

The four responses to the option "*Other*" are:
- *They need a preparatory class prior to ALEKS to learn the vocabulary of math*
- *The issue is time ... there is very little time to extend an already overburdened English curriculum*
- *To do this would require a Foundations re-organization. We also have much to prep students for, just for their English requirements. We have more hours, yes, but there is much to do for students who come knowing, in many cases, very little general English, let alone academic English. I posit this question: Are there any apps/websites/techniques that Math can borrow from English Foundations to better help your students (e.g. Kahoot, Socrative, etc.)?*
- *Awareness on both teams of what the other team is doing at any given time*
-

There is no doubt that the heavy teaching load does not allow for efficient collaboration between teachers. But, at least both faculty may start with sharing vocabulary. Perhaps the re-organization of Foundations program may allow for creating some kind of an integrated English and Math course.

Conclusion

College-Level English Language Learners at Foundations level encounter challenges when studying Mathematics. There is a necessity for collaboration between English & Math teachers to support these learners. This paper argued that (1) ELLs encounter challenges when studying a subject content, (2) that teaching Math is similar to teaching English, and (3) that collaboration between teachers would support ELLs. A pilot study was conducted for that purpose. A pre-teaching assessment was administered to a sample of learners, and a survey was run for both English and math teachers. The results of the assessment suggested that learners do have the appropriate level of English to study mathematics and that they will be challenged by the content area vocabulary, symbols, and syntax. About 50% of the teachers responded to the survey. Their responses showed there are similarities between teaching English and math. There was an indication that these teachers should collaborate amongst them, and that learners would benefit from collaboration. Ways and aspects of collaboration were suggested.

However, there may appear some barriers to collaboration such as:
● Absence of an integrated curriculum of Foundations English and Mathematics
● Lack of common learning outcomes

To overcome these two hinders, perhaps teachers need to be aware of the learning outcomes of each other's course, and keep these outcomes in the back of their minds when planning and teaching their subject matter. This is a kind of collaboration that may enhance the learning process with relevant examples.

● In-sufficient training for teachers in collaboration practices
● Heavy teaching load
● Limited resources

The outcomes of the pilot study are encouraging enough to go to large-scale research about the same topic with larger and different population of English language learners, teachers, and colleges.

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Framework of Effective Learning Management System Controls of Technology Enabled Teaching and Learning in Higher Education Institutions

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Abstract

E-Learning is an important education tool in modern teaching and learning. Several eLearning tools are available for students to make the learning processes in an effective way. The use of eLearning tools should be in such a way that it does not affect the behavioral patterning that drawn up for the conventional learning. Plagiarism and lack of refereeing the text or reference book is one of the major hurdles which greatly affect the knowledge-domain of the student's arena. This paper discusses various IT based tools available for the learning community, efficiency from its usage and recommendations for the suitable framework that needs to be implemented at higher education institutions which makes the learners stronger in both theory as well as real-time knowledge of their studies that is going to be used in their future for the better world.

Keywords: eLearning, eLearning tools, Efficiency, Higher education, Teaching and learning, Learning Management System, LMS

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Introduction

Higher Education plays vital role in the nation building process for a country and the rest of world. The higher education sector develops the change-agents for the various fields which will help the human-kind wheel to run further. Conventional and traditional class-room based learning and teaching was followed in many decades which is one-to-one and one-to-many. In a way, these are simplest form of learners to be assembled in a class room wherein the teacher used the blackboard to demonstrate the theory and laboratories used for practical.

As the technology evolved tremendously for the last 40 years, the teaching and learning environment changed slowly, wherein, the learning community will be anywhere in the world and teacher deliver the content through internet based tools such as video conferencing, web based conferencing tools or eLearning platforms such as Blackboard or Moodle. Present day, the mobile technologies play an important tool to deliver the teaching content on-the-go. Both PC based and mobile based learning technology brought the learning and teaching community together in various aspects. However, as the learning technology also brought various hurdles for learning processes such as plagiarism and not using the reference books entirely as most of the students wants the information instantaneously using internet without actually going to the library to take the notes from the millions of the books which were not available online as e-books which result lack of fundamental knowledge of the concepts of complex theories.

In today's world, the technology is inseparable in human life and almost every part of human life contains piece of information technology (IT) exists, right from personal computers to home appliances. To make use of the IT based learning and teaching at most efficiency, we should have a proper framework and recommendations to be laid to the learning community in order to derive the maximum efficiency from the IT based teaching and learning through Learning Management System (LMS)

E-Learning at Higher Educations

eLearning defined as "Instructional contents created and delivered through electronic medium or using Information technology [2]. In another term, eLearning refers to the use of learning models and/or frameworks that may be used when planning, designing and building work, in order to help define the process of work [7]. The term eLearning aka Electronic Learning provides the environment so that, the teaching community uses it to create and deliver for the group or individual. The Fig. 1 illustrates the typical eLearning environment at higher education institutions. eLearning become one of the primary mode of teaching and learning in most of the institutions of the modern world. eLearning implementation is very important for the institutions to enable the student to fetch the latest technologies using the technologies. It enhances the learning experiences and provides best suitable platforms for the teaching community to deliver the instructional contents in much more sophisticated way.

That higher education intuition wants to keep the reputation on par with national and international standards and ranking, they must initiate the eLearning mode of content delivery.
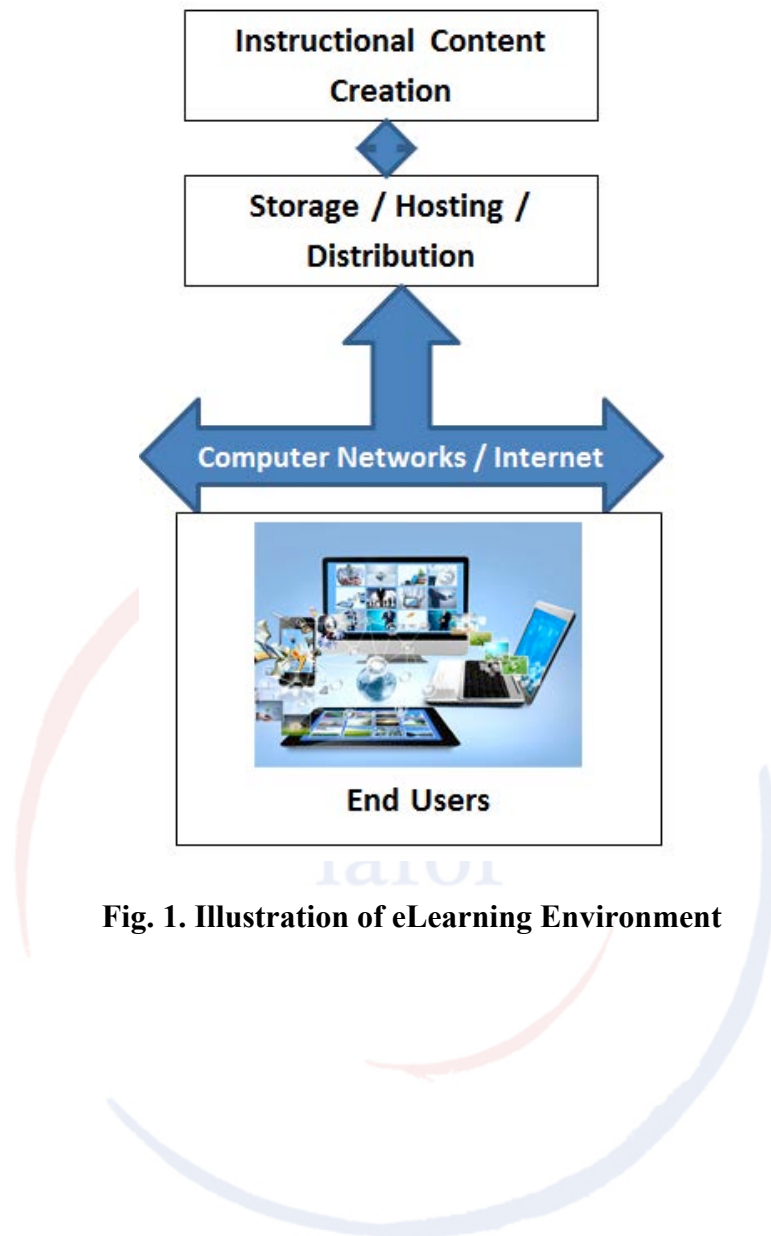
Fig. 1. Illustration of eLearning Environment

There are several direct and indirect benefits of using eLearning at institution level, and some are, but not limited to,

- **High Flexibility**
  o Learn from wherever you are, around the world
- **High availability**
  o The instructional content available for the students 24/7 and one-demand.
- **Faster Response**
  o Almost the response is immediate in an interactive contents and the student-teacher communications were effective
- **Sophisticated content (multimedia)**
  o eLearning provides the platform of hosting rich contents such as audio, video, multimedia, PowerPoint etc.,
- **Enhanced teaching and learning**
  o Teachers and students feel the easiness of using IT based learning and demonstration using rich contents makes them to have enhanced learning experience.
  o Interactive, self-paced and customized
  o Collaboration with other students, other universities and the rest of the world
- **On-the-go**
  o Thanks to the mobile technology, the eLearning contents can be assessed on-the-go
- **Accuracy**
  o The IT based design of instructional content provide more accurate information in less time
- **Cost Effective**
  o Less resources, future use and not involved complex logistics
- **Time Saving**
  o Since it is flexible and on –the-go, the end user need not spend more time in reaching the college
- **Repetitions of content view/paly**
  o If the student does not understand it first time, the teacher need to repeat the teaching once again. However, eLearning provide, any number of repetition at their convenience
- **Effective distance learning**
  o Using eLearning the contents will be delivered any part of the world using internet which makes the distance learning more effective

Every year, the institutions around the world joining for the eLearning race to provide the better content and better delivery mechanisms using the IT. In a survey [1], 72% of the higher education around the world is already using the eLearning technologies and the remaining 28% are ready to initiate the process.

Growth of eLearning

In the future of learning environment will be eLearning and failed to update their learning strategy will lose their place with their competitive education providers [3]. To attain the place such level the eLearning evolved around the world in 1954, BF Skinner, a Harvard professor invented first 'teaching Machine' used by school management to administrator the learning environment by programmed instruction [4]. At the year 1960, the first Computer Based Training was introduced, till today; this is the first initiative of eLearning environment, Table 1.

Year	eLearning Initiative
1924	The First Testing Machine
1954	The First Teaching Machine
1960	Computer Based Training
1966	CAI In Schools
1969	Arpanet, Heralds, Internet
1970	Computer Mouse & GUI
1980s	Pcs & First MAC
1990s	The First Digital Native Learning
2000s	Business Adaptive eLearning
2010s	Social, Online Learning

Table 1. A Brief History of eLearning Initiatives

The first eLearning system introduced to deliver the instructional content to the students at 1970 which is interactive with the teachers. During the period, 1980s, the introduction of PCs played vital role in expanding the eLearning content, with rich media which includes audio and video through interactive programming platforms through networking technologies. At, 1990's, several schools, colleges and universities started the online courses which is fully eLearning contents based which turns to be very effective and flexible compared to the conventional teaching methodologies adapted, so far. Now, at 21st century, the eLearning become boundary less, rich media, fun based, cost effective for the wider audience become one of the inseparable learning technology for the academic community [5].

The worldwide growth of self-paced eLearning products and services were estimated by US$ 27.1 billion in the year 2009 and expected to grow by US$ 49.6 billion in the year 2014, an independent survey conducted by Ambient Insight [6]. Fig. 2, provides the growth of eLearning products and services worldwide for the year 2009 to 2014. It is clear evident that, the eLearning is growing fast enough to handle most of the eLearning processes through electronically which needs higher attention in the implementation phase at higher education institutions.
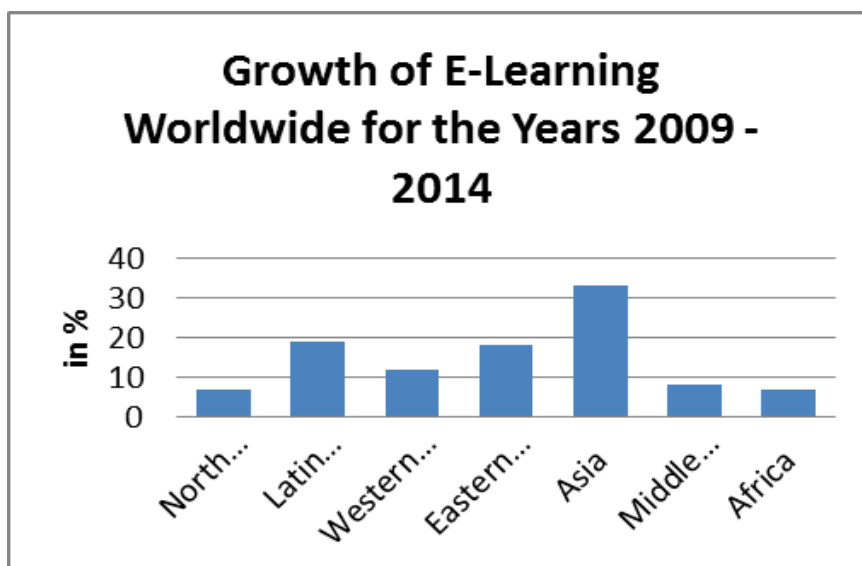
Fig. 2. Growth of eLearning World-wide

eLearning Requirements

eLearning used in two modes of broadcasting. One is synchronous, real time, online or live learning broadcast wherein the students watch, interact with respective teacher eg Live streaming, live TV and Video Conferencing. The other one is offline mode, where in the instructional contents was created and deployed in broadcasting server and can be accessed by learning community, eg. Blackboard, Moodle etc. The most commonly used eLearning Environment, tools, hardware and interfaces given vide Table 2 [7] and Table 3. There were variety of tools used in various process of eLearning range from instructional content creation, storing, retrieval and delivery. Loads of hardware devices used for the same range from high-end servers, storage, network, PCs, mobile devices etc. Another important requirement of eLearning Management is people, who involved in design, distribute and end users, Fig 3. These software's, hardware's and people were interconnected in such a way that the learning management system designed to meet the requirements of learning and teaching community around the world.

eLearning Platforms/Tools	Description
Virtual & Personal learning Environment (VLEs/PLEs)	Blackboard/Moodle
Virtual/One-to-One/ Distance Learning/Blended Learning	Online/Offline mode of content delivery
Webinar/Podcast, Video, Streaming/ Audio	Live or Deployed
RSS/Forum/Blog	Notification/Alerts and Blended Learning
Web/Wiki/Web 2.0/Social Media	Web based instructional content delivery system
Netbook/EBook/ Mobile/Handheld	On-the-Go, mobile based, dynamic
Flash/software's	Software used for
PPT/Prezi/Java	Medium used for the preparation of instructional contents
Assessment/Quiz/Survey	Academic Assessment/Feedback system

Table 2. Most Commonly Used eLearning Platforms/Tools

eLearning Hardware's	Description
Servers	The host used for holding the contents for the distribution to one may users.
Client PCs, Mobile and Handheld Devices	The clients are connected with host/servers, to send and receive the information's
Networking Devices	Interface between the server and the client
High-end Storage Systems	Modern storage technology such as San and cloud based high end storage devices used to store large volume of digital data [8]
Internet/ISP/Bandwidth	Networking devices uses these services to interact with the world.
Audio/Video/Imaging Devices	Display, Sound recording and scanning devices to capture the multimedia contents.

Table 3. Hardware and Devices used for eLearning Management

As mentioned in Fig 3. various stakeholders of eLearning process make use of these hardware and software technologies to provide the technology based learning tools for the learners who seek dynamic learning processes. In this figure, the Standards and Accretion body is the combination of external agencies and internal quality audit system. Similarly, the content providers either can be internal departments comprising of academic staff and technical staff. The technology providers are the one who provides the platform for the hosting and make a way to deliver it to the end users from the internal IT department or external technical service Provider Company. Apart from that, the higher education management, teachers, students are from the implementing institution and one or two consultant may be included for the advisory.

Each of these 3 components *viz.*, Hardware, software and people are very important to have effective [9] Learning Management systems (LMS). However, the rationale behind the selection of these components depends upon the eLearning policy of individual organizations.
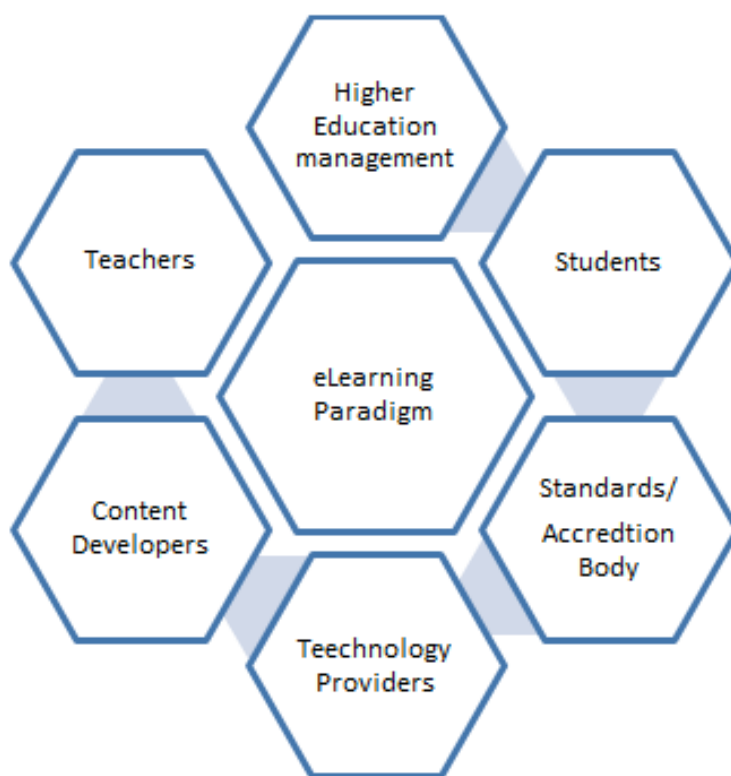

Fig. 3. Stakeholders of eLearning Paradigm

Framework of Effective Learning Management System Controls

The Learning Management system is a comprehensive platform wherein all the contributors and users join together in a place to achieve the learning process more sophisticated and convenient. Designing a customized LMS for the higher Institutions requirements or choosing and procuring third-party LMS is purely the decision of the content providers and users along with management's decisions. However, the effective LMS should be customized for institutions requirements either design in-house completely or get the LMS with customization agreement as per the requirements. In a process of designing or customizing the following are the important features needs to be evaluated and included, but not limited to, fig 4,

- ✓ LMS Host and Support systems
- ✓ Security Features
- ✓ Interface and Interactions
- ✓ Process flow and approval process
- ✓ User Management and Features
- ✓ Learning content Creation, Modification and Removal (Management)
- ✓ E-Commerce Capability
- ✓ Catalogs and Indexing Features
- ✓ Assessment Features
- ✓ Evaluation and Reporting Features
- ✓ LMS Users Communications and collaboration systems integration
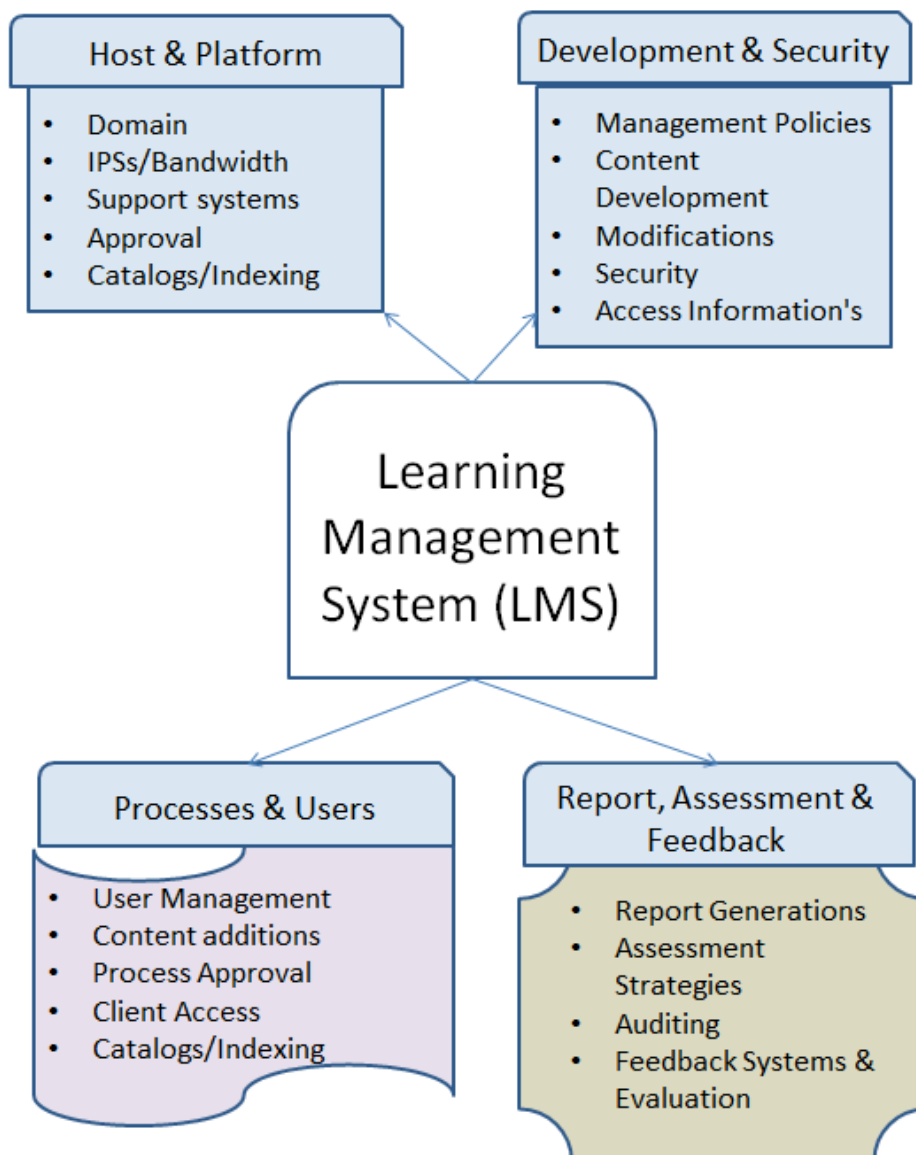- ✓ Feedback Systems

Fig. 4. Effective LMS Controls

The parameters discussed above are important factors to be considered and addressed meticulously to achieve the highest standard learning system for the higher education institutions.

Recommendations and Control Measures

Taking this framework, Fig 4., It is recommended that, the LMS implementation needs the following detailed analysis to take the system in to its reality.

A detailed requirement analysis should be conducted by including the user requirements, existing system available and the future plan of institutions learning processes. The requirement analysis should include, questionnaire, feedbacks user interviews etc.

The requirement analysis report should clearly indicate the institutions learning strategy, financial requirements, quality standards and people who involved.

It is important to study the initial requirements if IT infrastructure, existing IT equipment's and new assets requirements. Since the IT equipment's change rapidly of its features and versions, it is important to have change management policy document about replacement, upgradation and discarding the IT equipment's.

Deciding factors should be derived to develop the in-house LMS or customized LMS or third party LMS. Some organization would prefer to have entirely in-house developed system which will cater the requirements of end users. Some institutions will be product like Blackboard to use as per the features available. Some of other organizations will use product like Moodle and can be customized as per the requirements.

It is important to link the requirements with the chosen LMS and make a decision to have a system which is acceptable for all the stakeholders involved, Fig. 3.

People roles should be clearly indicated and appropriate policy document should be kept in place

Audit criteria should be set in order to evaluate the completed system as per the standards available for the region. Once the system in place, initial implementation should be conducted in parallel with manual learning process for a fixed period on an agreed terms

Coordination of peoples such as academic community, technology providers and end users should be derived and single point of contact should be made available

Content approval, modification and removal process should be defined in a policy document. Distribution and usage should be restricted within the organization level so as to maintain the proprietary.

Physical and logical security of the LMS should be in place and copyright policy should be developed within the institution and with external bodies

Change management, assessment, evaluation, reporting and feedback system documents to be created and maintained.

Conclusion

eLearning implementation at higher education institution is must for the present and future teaching and learning. As technology evolved and expanded and student's community is in the position to use all these technologies, the teaching community needs to gear up in producing the electronic based contents and delivery. Fruitful implementation of eLearning needs development of such system and its building blocks should be constructed in a systematic manner to achieve higher goals. The policy must be developed to support the implementation of eLearning process. Identifying right technology, content and teachers is the main factors for the success of eLearning initiatives at higher education institutions.

Acknowledgment

The author thanks the Management and members of staff and student community of Caledonian College of Engineering, Muscat for their continued support of my various research and eLearning initiatives.

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