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A Contrastive Study of Word Formation processes in English and Marathi Language

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ABSTRACT

Considering the increasing need of learning and mastering English in globalised scenario, the present research paper focuses on the need to motivate students to develop vocabulary which is a very challenging task. Understanding the structure of words is a necessary step in enriching vocabulary. The contrastive study at the morphological level can be helpful to learners of English as a second language whose mother tongue is Marathi. The study has value for language teachers as it will enable them to predict as well as analyse errors and accordingly devise the teaching. It will be useful in facilitating development of vocabulary. It can discover language universals. The study can help to solve problems in translation as well. Analytical methodology is used for the present paper.

The paper is divided into four parts. The first is introduction to morphology and the use of contrastive study in second language teaching. The second section traces the origin of English and Marathi, one of the regional languages of India. The third focuses the synchronic comparison between both languages at morphological level. It analyses word formation processes in both the languages. The last section deals with the findings of the study, specifically pedagogical implications, how the study will be useful for second language learners.

Key words: Contrastive analysis, morphology, pedagogical implications
Theme: Teaching and Learning

I

Introduction

In a globalised scenario there is a growing need of learning and mastering English.So language teachers have a great responsibility in developing linguistic and communicative competence of learners. To have a command on language, enriching vocabulary always remains one of the major objectives in language teaching. A good vocabulary empowers learners and makes them confident. However, until 1980s vocabulary was the most ignored topic in language teaching. "A main reason was the wide spread belief among linguists that knowing a language was the same as being able to use its sounds and structure." (Tickoo, 2003) However knowing vocabulary and using it appropriately is equally important along with mastering structures. But developing vocabulary is not an easy task. While teaching English as a second language there is no single research based approach and method for teaching vocabulary. A variety of need based approaches and methods of vocabulary instruction could be followed.

Vocabulary knowledge is not something that can be fully mastered in one go. It is something that expands over the course of a life time. Vocabulary is acquired incidentally through indirect exposure to words and intentionally through explicit instruction in specific words and word learning strategies. To develop vocabulary intentionally the teacher should explicitly teach specific words as well as word learning strategies. Such strategies would reinforce self learning. Learning to learn vocabulary expansion is more important than memorizing a stock of words. The teacher should introduce such strategies which include using dictionaries, thesauruses, word activators, contextual analysis, cognate awareness and morphological analysis. Among these strategies the present paper mainly focuses morphological analysis. Not just morphological study of the second language but the contrastive study of morphology of the second language and the mother tongue can prove helpful in developing vocabulary. It also leads to cognate awareness. Fostering word consciousness has an important role in helping students develop vocabulary. Word consciousness can be strengthened through encouraging adept diction, through philological study, through morphological analysis. If the students have some basic knowledge of understanding the structure of words and the various ways of word formation, it will be certainly helpful for them. It will develop scholarly approach while learning single word. When the word is introduced logically, it is learnt permanently and is not just a memorization.

Morphology- Morphology or morphemics is the study of structure and formation of words. Its most important unit is the morpheme. A word is composed of smaller meaningful grammatical units which are called morphemes. Thus a morpheme is a minimal unit of meaning. Every word is formed of a root morpheme i.e, free morpheme and bound morphemes- prefixes and suffixes if any. Free morpheme and bound morpheme are two main classes of a morpheme .For example 'friend' is a free morpheme, 'ly' 'ness' 'ship' 's' are suffixes while 'un' and 'be' are prefixes. The suffixes and prefixes are attached to the free morpheme and we have words like friends, friendship, and friendly, befriend, unfriendliness etc. Words have inflections and derivations after attaching bound morphemes. If the students have such basic knowledge, it will help to expand their passive and active vocabulary. They need not be introduced jargons in linguists. But they should be introduced word formation processes in language which help to comprehend and produce vocabulary items according to the requirement.

Contrastive Analysis : Languages do differ, but they also have a great deal in common. Learning a second language is always in some measure repeating an old experience. The comparison of two

or more linguistic systems as they exist today i.e. synchronic comparison is known as contrastive analysis. Contrastive analysis is a systematic study of a pair of languages with a view of identifying their structural differences and similarities. Contrastive analysis has a value as a predictive technique in language teaching. By observing the structure of two or more linguistic system we can predict the difficulties the learner is likely to encounter. "Contrastive analysis explores both the similarities and dissimilarities of the linguistic system compared. The similarities can be properly exploited" which will facilitate learning, save time and energy of the teacher. (Verma, Krishnaswami, 1989, p.349) While the differences can be focused. Some differences can be easily grasped but the problematic differences may require more time. The teacher can devise different methods and techniques. This also facilitates the teaching of second language. Such synchronic comparison of languages may be undertaken at any level- phonological, syntactic, morphological, orthographic semantic, cultural etc.

India is a multi lingual and multi cultural country which is challenging for a second language teacher. But I experienced that a threat can be converted into opportunity. Being a Maharashtrian and having a wide experience in teaching English as a second language to the students whose first language is Marathi, I was keenly interested in synchronic comparison between English and Marathi language to explore whether it can prove useful in ELT. The present paper intends to explore how the contrastive analysis between English and Marathi language at the level of morphology will prove beneficial in developing vocabulary.

II

Origin of English and Marathi Language

According to the 2015's edition of ethnologue catalogue there are around 7102 living languages out of total 7469 languages in the world which are divided into 14 families. (Paul Lewis M.Feb21, 2015). Indo- European languages are the most widely spoken languages in the world. 44% of the world population i.e. nearly 3 billion people speak a language in the Indo- European family.

English language belongs to the Anglo Frisian sub group of the West Germanic branch of Germanic languages, a member of Indo-European languages. Modern English is a direct descendent of Middle English which in itself is a direct descendent of Old English which is a descendent of Proto-Germanic language. Modern English is influenced by a number of foreign languages like Spanish, Italian, French, Persian etc.

While Marathi language is a branch of Indic language family. Indic language family itself is a branch of Indo- Iranian family and Indo- Iranian is one of the principal branches of Indo- European (Indo- Aryan) language family. Marathi is believed to be 1300 years old evolving from Sanskrit through Prakrit and Apabhramsha. It is spoken by the Marathi or Maharashtrian people. It is spoken by the people in neighbouring states as well such as Gujrat, M. P., Karnataka, Goa, Union Territories Daman and Diu. It is official language of Maharashtra and Goa state. Outside India it is spoken in Israel and Mauritus. Still it is used by Maharashtrian emigrants abroad. Marathi is southern most language among the Indo- Aryan languages. Almost all Indo Aryan languages have origin in Sanskrit. Marathi also is strongly influenced by Sanskrit. In the ancient time three Prakrit languages emerged from Sanskrit, they were Shaurseni, Magadhi and Maharashtri. Later Maharashtri which was largly spoken by people living in Maharashtra developed into todays modern Marathi. Its grammar and syntax has been derived from Pali and Prakrit. Marathi has 50% vocabulary identical to Sanskrit language. Marathi's birth is said to be somewhere in 8th century. It was official language of Satvahan Empire and was used until 870 A.D. Marathi was most popular language of Prakrit. Later it evolved into Maharashtri Apabhramsh. It is believed that Marathi is

evolved and re-sanskritized form of Apabhramsh. Later on Marathi was influenced by Urdu, Arbic, Persian,portugease, French and Kannad as well.(Joshi,1998) As per some estimate there are 90 million fluent speakers of Marathi in the world, giving it rank of 4th most spoken language in India and 19th most spoken language in the world.

The philological study of English and Marathi leads us to think of similarities between the two languages. English and Marathi both are modern living languages. Both have a common origin, i.e. Proto-Indo European, Indo European/Indo –Aryan. The ancient languages Latin, Sanskrit and ancient Greek belong to this principal family. These ancient languages, though geographically distantly related have amazing similarities in respect of morphology, syntax, phonology and semantics. Sir William Jones, a British Government official was the first person to note these similarities (1786).He has miraculous observation about Sanskrit, the ancient language of India. After his philological analysis Sir William Jones suggested that a number of languages from very different geographical areas must have some common ancestor. In 19thcentury this common ancestor was named as Proto Indo European. Thus Proto-Indo –European is a kind of great- great-grandmother of today's modern English and modern Marathi.(Yule,1985-2006).Naturally no wonder we find some similarities in lexis and word formation processes between them. The following examples of words in the given languages is a good evidence for proposing a family connection.

Sanskrit	Latin	Ancient Greek	Marathi	English
pitar	Pater	pater	Pita	Father
matar	Mater	mater	Mata	mother

The words related in origin in genetically related languages, descended from the same ancestral root are termed as cognates. They are much similar in spelling, pronunciation and meaning. The study of cognates on the part of the teachers can help the learners to remember the words easily. Cognates can provide a potential method of comprehending words. They are an obvious bridge to English language. Students get benefitted by raising cognate awareness. Cognate awareness enables learners to use cognates in the first language to understand the second language. Children can be taught to use cognates as early as preschool level. As they move up to higher level they can be introduced more complex cognates. The following are the examples of cognates with common roots in Sanskrit, Marathi and English.

Sanskrit	Marathi	English
Nam	Nam, Nav	Name
Agni	Agni, Aag	Ignition
Pantha	Pantha, path	Path
Janitra	Janitra	Generator
Trikonmiti	Trikonmiti	Triganometri
Jarashastra	Jarashastra	Geratrics

The teacher should read aloud the cognates, ask what the students listened and discuss with them. The students can be asked to read aloud, find more cognates. Thus they can be made language-conscious and motivated to learn newer words.

III

Word Formation Processes in English and Marathi : Synchronic Comparison

English and Marathi both languages have many similarities at the morphological level, because of their common origin Indo European language family. As a morpheme is a minimal unit of meaning in English, in Marathi *shabda* is such minimal unit. English free morpheme and bound morpheme have parallel terms in Marathi as '*Siddha Shabda*' and '*Saadhit Shabda'*. Siddha Shabda are independent roots not made from words e.g. *ghar, akash, samaj, jaya* etc. While *Saadhit shabda* are have four types of formation processes i) *Upasarga ghatit* – are prefixations e.g.*ashakakya – a+shakya ,sudin-su+din* ii) *pratyaya ghatit*- are suffixations e.g. ***jagtik –jagat+ik*.These are inflections or derivations, e.g. inflections ;** ghari **manuski- manus, akashat**, akashache etc. derivations **;** *samajik, vividhata* etc. Prefix is termed as *Upsarga* in Marathi and suffix is called *Pratyaya*. Both are derived from Sanskrit. iii)*Samasik shabda*- are compounds made of two bases e.g. *kalsarpa- kal+sarpa*. iv)*Abhyasta shabda* are reduplicatives,e.g.*kharakhura,kirkir* etc.(Govilkar L.1993-1996)

English language has major word formation processes 1) Affixation 2) Conversion and 3) Compounding. Affixation is a word formed by adding a prefix or suffix to the base, with or without a change of word class e.g. justice – injustice, fair-unfair. (Quirk R.& Greenbaum S. 2006, p.442)

Examples of *Upsarga Ghatit shabda* compared to prefixation– i.e.prefix+base

Anyay – A + Nyay just like injustice-in+justice *Bahubhashik – Bahu + Bhashik* just like multi lingual-multi+lingual Examples of *Pratyay Ghatit Shabda*-suffixation i.e.base+suffix-Shahanpana - Shahan+ Pana corresponding to wisdom-wise+dom

Muthbhar - Muth + Bhar corresponding to fistful-fist+ful. Second major words formation process in English is conversion. It is a derivational process which assigns a base into a different grammatical form without changing its word form i.e. without adding prefix or suffix. Marathi has words formed in such way but are few in number e.g. *khane (*verb) *khane* (noun*), gane* (verb) *gane* (noun).

Third major word formation process in English is compounding. A compound is a unit consisting of two or more bases. A base or more bases are added to the root. (Dongde R.V., 1997-2003) The base forms may be of same grammatical class or different grammatical class. The bases are related in different ways. Compounding is very productive type of word formation process. Examples – table- cloth (cloth on the table) , paper weight (weight for paper).

In Marathi language also this process is highly productive. It is derived from Sanskrit. In Marathi this class of word formation is called *Samas ghatit shabda*. They are divided into 4 classes 1*) Dvandva* 2) Bahuvrihi 3) *Avyayibhav* and 4) *Tatpurush*. These again have sub classification. In *Dvandva* both morphemes are important. *Dvandva* has three sub classes i*) Itaretar Dvandva*- It is implicitly combined with conjunction 'ani' 'va' e.g. *Ram-Laxman* i.e. *Ram and Laxman ,Krishna-Dhawal* means *Krishna* and Dhawal ii) Samahar Dvandva- This type is open ended e.g. *Mith-Bhakar* means *mith bhakar* etc. iii) Vaikalpik Dvandva- Two morphemes are implicitly conjuncted by 'or' .e.g. *Papa-punya* means *papa* or *punya*. 2) Bahuvrihi- The given bases i.e. free morphemes are not important, the noun that has such attribute is referred by the word e.g. *Chakrapani* means the one having wheel in the hand, *Lambodar* i.e. one who has big stomach, etc. This compound surprisingly enough is mentioned in English morphology with Sanskrit name

Bahuvrihi (Quirk& Randolf, 1973) e.g. in English the words Paperback (the one that has paperback), Potbelly (the one whose belly is like a pot) are such *Bahuvrihi* compounds. 3) *Avyayibhav*- The first morpheme is a major morpheme. Compound so formed is adverb. E.g. *Aajanma* (*Aa+Janma*) i.e. from birth , *Yathashakti* (Yatha+Shakti) . 4)*Tatpurush*- In this compound second morpheme is important. It also has a number of sub classes according to the relationship between two morphemes based on cases (*vibhakti*) e.g. *Devpriya*, *Ishwarnirmit, Gayran, Janmaswabhav, Devalaya*, *Samaysuchakta* etc. Marathi compounds are directly derived from Sanskrit.

English has minor word formation processes apart from these major processes. In Marathi most of the corresponding minor word formation processes are not found. Perhaps English language is more experimental in this respect. However, in Marathi *Abhyasta samas* corresponds to reduplicatives in English. When a morpheme is repeated or most of the sounds are repeated or sounds imitate the object mentioned, such compound is *Abhyasta* in Marathi .There are three types of this reduplicative 1) *Purnabhyasta* – e.g. *Phaar- phaar, Halu- Halu, Jawal- Jawal*, 2) *Anshabhyasta*- Some sounds are similar and in the same sequence. e.g. *Shejari-Pajari, Lunga-Sunga, Aghal-Paghal* etc. 3) *Anukaranvachak*- The sound imitates the action. e.g. *Badbad, Watwat, Gharbhar*. (Acharya M.N.1990)

In English we have similar process in the form of reduplicatives e.g. goody goody, din din (*Purnabhyasta*) 2) Criss cross, see saw, , (*Anshabhyasta*) tick tock, ding dong (*Anukaranwachak*) .

In English a few words are formed imitating the sound produced by a living or non living thing called onomatopoeia,e.g.thunder,rustle, whisper, humming,fluttering,etc. In Marathi such words are termed as *Anunaad* or *nadanukaran*, e.g. *karkashsha, khalkhal, zarzar, patpat,kirkir, musmusne* etc.

A few words borrowed from English are assimilated in Marathi, e.g. *ispital*(from hospital), *pistul* (from pistol*), kaadtus* (from cartridge).While English has borrowed a few words from Sankrit, e.g.*asana, avtar, yoga, guru, mantra, jungle, sari, moksha* etc. which are derived in Marathi also.

Some words are invented in language. They do not have any roots in the past and cannot be analyzed morphemically. They are newly coined. So this process is called coinage.e.g. names of industrial ,commercial products or medicines-like polyester, nylon, colgate, aspirin, Xerox etc..But after there first coinage they are treated as common words. Of course such words are very few in number. Words formed in this way are rarely found in Marathi.

The other minor processes of word formation mentioned by Yule (1985-2009:55) blending and clipping are not found in Marathi. However the knowledge of the formation of these processes enables the second language learners easily grasp the meaning .e.g. the learners can infer the meaning of the word glocal as blending of global and local, the initial part of global is connected to the end part of local, so is the meaning, combination of two concepts which can be guessed. In clipping process the original form of the word is reduced by clipping at either or both ends, e.g. Mathematics reduced to Maths or omnibus reduced to bus. However though new, the learners can easily understand and use such vocabulary items. A teacher can induce them to infer the meaning, process of forming and pronunciation of the given word after brain storming session.

Thus the contrastive study of the word formation processes on the part of the teacher will be reflected in teaching vocabulary which can stimulate the learners and help to shed the lingua phobia in them.

IV

Conclusion

Some introductory knowledge of morphology will induce the learners of second language to infer the meaning of the word after analyzing its morphological structure. This will also help in proper pronunciation of multi syllabic words. The philological study of the second language and of the mother tongue will make the learners language- conscious at higher level. But even at lower level the observation of cognates will lead them to infer and understand the word .This will result in developing language awareness among learners. The contrastive study of word formation processes will facilitate the learning. The dissimilarities will receive focused attention and kindle the interest of the learners. The learners will learn to acquire vocabulary independently. Observation and logical analysis can develop research attitude among learners as well. The study will help the research students interested in philology. They may discover language universals. The study may be useful in solving some problems in translation.

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A Study of Knowledge Categorization In Logic And Algorithms

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Abstract—The question in this paper is how to categorize knowledge in logic and algorithms. Method used in this is literature based research methodology. The study objective is to categorize knowledge learned in Logic and Algorithms. The result of the study is the categorization of the knowledge that can be done by using deductive and analogy logic. All knowledge which is learned in Logic and Algorithms must be categorized into conceptual and metacognitive knowledge. Learning question design directing to conceptual and metacognitive knowledge is proven to be able to create meaningful learning process. 85% of students can identify inter-correlation between one concept to others, and 81% of students can evaluate their own works.

Keywords— Categorization; Factual Knowledge; Conceptual Knowledge; Procedural Knowledge;Metacognitive Knowledge

I. INTRODUCTION

According to Burner [4], learning incorporates three processes, consisting: (1) gaining new information, (2) transforming information, and (3) testing the relevance of transformation result. The definition of information the previous sentence is the adaptation process, or transformation of prior knowledge which has been already acquired based on the new information. Therefore, the approach used in learning can use 2 assumptions [4]. First assumption is someone's knowledge can be acquired interactively. This means that, in learning, active interaction process between the learner and his environment must take place, in order to transform existing behavior into the expected forms.Second assumption states that someone's knowledge is constructed by connecting new knowledge to the prior knowledge which has been already acquired. Someone's comprehension of something, either in the form of procedural or conceptual knowledge, depends on the cognitive structure of mental aspect or mind.

Other opinions, which are similar to Burners, come from Maher & Davis [11] and Steffe [16]. According to Steffe [16], the fundamental duty of mathematics teacher is to accelerate mathematical meaning development of theirs students. If a teacher fails to do this, then the learning process will be meaningless. Students cannot remember, transfer or apply information which is meaningless to them. According to Maher & Davis [11], one of the teachers' duties in learning process is to construct their own intellectual so that they can present a mental representation that suits well to their students' mental representation.

These expositions affirm that teachers must be able to create a meaningful learning process. This affirmation has been proved by Hartati [9]. The affirmation confirms that meaningful learning influences students' comprehension of division operation.

In order to design meaningful learning systems, some tasks have to be done. Some of these tasks are recognizing the knowledge to be taught as well as establishing the learning question. The teachers' lack of understanding of the asked questions as well as in the answers to these questions in learning process can cause the teachers hardly explore their own knowledge [15]. *Learning question* correlates with the important things to be learned by students [1].

Knowledge is classified into four groups, consisting of factual, conceptual, procedural, and metacognitive [1]. In this paper, the knowledge being assessed is the one in Logic and Algorithms. It is important to be assessed because more than 70% students of STMIK Surabaya have found difficulties in learning Logic and Algorithms. This condition is also identified in some other Higher Education institutions in Indonesia [2][12][14].

Based on the explanation, the question to be proposed is: "*How can the knowledge in Logic and Algorithms be categorized as*?". The objective in respect to this question is to find the characteristics the knowledge being learned in Logic and Algorithms. The finding is used for establishing the *learning question* is each topic. In the end, it is expected that the finding can be applied as a guide for designing the meaningful learning.

II. RESEARCH METHOD

Method that will be used is literature review. The theory that will be assessed is classification of knowledge according to Anderson & Kartwoth [1], including: factual, conceptual, procedural, and metacognitive knowledge. Experiment sample consists of 120 students. They are a part of the participants in Logic and Algorithms class in odd semester of year 2013/2014. Data collection is done by using questionnaires and tests. Period of data collection is September – October 2012. Data analysis is conducted by using the proposition. Conclusion is drawn by applying the following methods: (1) for literature review, deductive reasoning and inductive reasoning from analogy type are used, and (2) for evaluating questionnaire and test result data, descriptive statistics is applied.

Factual knowledge is separated between one another, one fact to others are not connected, as in the information bits [1]. Knowledge is grouped into two, which are terminology and detail of certain element. The example of terminology in Logic and Algorithms is symbol, such as the convention in writing variable names, flowchart symbols, mathematical expressions, logical operations, and logical relations. Detail of certain element in Logic and Algorithms can be represented by input design, output design, and standard form of sequential, branching and looping processes.

Conceptual process is a more complex knowledge. It consists of factual and conceptual knowledge which are organized to be more complex conceptual knowledge [1]. Conceptual knowledge is the knowledge that is constructed of inter-correlation between basic elements with wider structure so that a specific function is created [15]. This knowledge covers: classifications and categorizations, principles and generalizations, theories, models, and structures. Examples of classifications and categorizations are data, constants, parameters, variables, various types of data processing, as well as modularity. Principle to form, algorithms design principles as well as passing parameters principles represent the member of principles and generalizations. Finally, the examples of theories, models and structures are represented by branching as well as various types of looping flowcharts.

Procedural knowledge is knowledge about how to do something [1][15]. This knowledge includes certain skills, algorithms, techniques, and certain criteria in applying the right methods. Some examples of the procedural knowledge are sorting procedure and data searching from various algorithms and certain algorithm tracings.

Metacognitive knowledge is the knowledge about general cognition, as illustrated that awareness of knowing an idea or not is confirmed as the cognition itself [1]. Metacognitive knowledge incorporates strategies and is proved to be able to improve awareness of reasoning process and existing learning process [5]. As an illustration, students can design flowcharts to solve a problem, and later they can evaluate their constructed flowcharts and determine the flowcharts' correctness values.

Logic and Algorithms has the purpose of providing the students with the capability to design algorithms which are presented in flowchart and pseudocode in solving computation problems. The topics in logic and algorithms are emphasized in the creation of logical automation processes, presented in *flowchart* and *pseudocode* [7]. In this research, computation problems are limited to the problems of creating business documents.

III. RESULTS AND ANALYSIS

The knowledge being learned in Logic and Algorithms consists of: (1) data processing, including modular approach, (2) variables, parameters, data, constants, arithmetical and logical operators, as well as mathematical logic relations, (3) varied automation processes, covering sequential, branching, looping, as well as combination of these three, (4) algorithm development by using flowchart and pseudocode, (5) array, and (6) various searching and sorting algorithms [7][6][10][17].

A. Data Processing and Modular Approach

This topic describes the concept of data processing automatically, by using the main device which is computer. The description starts from the explanation of the components of data processing devices, including: computer systems, simple logical program, procedure of making program, algorithm presentation by using pseudocode and flowchart [7].

Basic knowledge required to understand the topic includes: variables, parameters, data, constants, mathematical expressions, arithmetic and logic operators, and various data processing activities. Data processing means to transform input data into a specific output.

This makes data processing become a complex activity. In order to simplify a technique which is known as modular is required. The purpose of this technique is to make the complex and complicated process can be transformed into some smaller and more specific processes, so that the complexity of each smaller process is lower than the complexity of the entire process.

The required knowledge in order to understand input and output design incorporates: (1) knowledge about the output form expected by users, (2) rule and convention in making the output. Therefore, students must be able to find the output form expected by users. Then, they have to be able to predict input form required to produce the expected output. In this stage, they are demanded to have the capability to identify variables and their types. Next, they are supposed to be able to transform the input to output. In the process stage, another capability which has to be acquired by the students is the capability to predict mathematical expressions as well as logical relations required in the transformation process. Finally, by using the prediction, the students must be able to determine the correctness of the constructed prediction.

Based on the prior discussion, it is demonstrated that data processing knowledge category is not properly represented by juts the factual knowledge alone, but it has to be directed to conceptual and metacognitive knowledge. Consequently, learning question has to cover two aspects. First aspect is related to building a relation between input design, process, output, as well as variables, mathematical expressions and logical relations. Second aspect is related to the ability to decide the correctness of the prior prediction

B. Data, Constant, Parameters, Variables, Arithmetical Operationsand Logic

After explaining data processing, some books continue the discussion with various data types, constants, parameters, variables, arithmetic operators, logic, and logical relations [7]. If this knowledge is understood separately, it will not bring meaningful learning process. Some capabilities which have to be acquired by students in learning this knowledge are: (1) Students have to be able to identify differences between data, constants, parameters, and variables, (2) Students must be able to write mathematical expression (including: arithmetic operators, logic and logical relations) which are correlated with data processing, and (3) Students are demanded to have the capability to recognize differences between data, constants, parameters and variables as inputs or outputs.

Thus, learning process for this topic cannot be separated from data processing. Knowledge category of data, constants, parameters, variables, arithmetic operators, logic, and logical relations is not properly represented by factual knowledge. Instead, this knowledge category must be directed to conceptual knowledge. As a consequent, learning question has to reach the stage of establishing relation between the knowledge and data processing

C. Sequential, Branching and Looping Processes

Data processing incorporates four processes: sequential, branching, looping, and recursion. Each process type often includes mathematical expression. Because of the reason, in order to design meaningful learning, the learning process for data processing cannot stand alone. The discussion has to be related to the application of mathematical expressions.

Sequential process is a data processing which is executed sequentially from the beginning step to the final step. This makes the accuracy of placing the commands in the right order has to be noted by the users of the process. These commands includes: inputting data, storing data to variables, processing data which is presented in mathematical equations, transforming input data into output data, as well as displaying data. Students are required to be put into an awareness of changing these processes' order in general can change the meaning of these processes. Consequently, the produced output can be different.In short, the

learning process for sequential process has to place the processes' sequence as the base component.

The sequence of processes can be introduced by: (1) identifying the output models and their variables, (2) predicting input requirements as well as their variables, and (3) constructing transformation process for the input model to become the output model. Some things required to be noted in transformation process construction are determining mathematical expressions and accuracy in determining the sequence for transformation process. To sum up, sequential process learning has to relate mathematical expressions and the accuracy of commands' sequence.

The process to transform input to output is regularly faced with some possibilities, not only to run the commands in sequent from the beginning to the end. Therefore, in data processing, a process to tackle with given possibilities is required. This kind of process is called branching process. It needs logical relations or logic operators. Hence, the learning for branching process topic is supposed to be connected to logic operators and logical relations, besides mathematical expressions.

Data processing is not possible to be done just once. In fact, looping condition is always met. Regarding this condition, looping process is a necessity. In this process, comprehension of logic operators and logical relations are necessary. Thus, learning for looping process must be related to mathematical expressions, logic operators and logical relations, sequential processes, as well as branching processes. Students are also provided with the capability to differentiate looping processes from branching processes.

Briefly, learning process for sequential, branching and looping processes cannot be separated from the whole data processing topic. As a consequent, learning question must reach the stage for building relation of all this knowledge with data processing

D. Algorithm Development by Using Flowchart and Pseudo code Approaches

Developing algorithms is the heart of discussion in Logic and Algorithms. Some books start the discussion with developing algorithm topic after all data processing components have been explained in detail.

This topic is a continuation of sequential, branching and looping processes. Discussion is started with basic symbols used as well as pseudo code writing structure. Then, flowchart and pseudo code structures will be explained for sequential, branching and looping processes. Next step is to use those structures to solve computation problems, especially in creating business documents without the use of database.

After learning these topics, students are expected to acquire the capability to design flowchart or pseudo code for solving competition problems, especially in creating business documents without the use of database. Therefore, what needs to be the focus of this learning is selection of the right business documents as discussion topics. It is important since business documents being discussed are not recognized by students, bigger and more complex knowledge structures will not be able to be realized.

To be brief, in learning algorithms development, knowledge outside the scope of Logic and Algorithms, such as the knowledge about creation of some business documents, has to be noticed. In addition, the learning process can be detached from the whole data processing concept. As a result, learning questions has to get to the stage of making predictions about the relations of each topic in algorithm development with data processing

E. Array

Array is a variable type that can be used for storing some data. In data processing, some arrays are connected, so that they can be related to form tables and to be used as database. The difference between array and database is the characteristic of the stored data.

The data stored in array will only last as long as the computer is on. Once the computers are off, the data will be lost and cannot be found any longer.

Learning array has to be related to simple variables and the whole data processing. This makes array can be categorized as conceptual and metacognitive knowledge. So, the learning question must include two aspects, consisting of conceptual and metacognitive knowledge. The first aspect is realized by constructing relations between simple variables and arrays in input design, process design, output design, mathematical expressions, and logical relations. Second aspect is related to the capability to judge the correctness of relation designs.

F. Searching and Ordering Algorithms

In processing data, searching and sorting algorithms are frequently required. Purposes of these algorithms are to find and to sort specific data in arrays. Many books present various searching and sorting algorithms in pseudocode form [7][3][6][10][17]. Hence, searching and sorting algorithms can be classified as procedural knowledge. However, if students' capabilities are limited to run the procedure, then the learned algorithms will not be meaningful to the students. As a result, students' capabilities are required to be improved to reach the stage of selecting appropriate searching and sorting algorithms to solve computation problems.

This establishment of the capability level to be reached causes a change in knowledge categories. Initially, searching and sorting algorithms are categorized as procedural knowledge, but then it has to be changed to conceptual and metacognitive one. As a consequence, learning those two algorithms has to be linked to some topics, including: modular technique and parameter passing; accuracy in identify input variables, processes as well as output; and accuracy in selecting searching and sorting algorithms to solve specific computation problems.

Based on the prior discussion, it can be noticed that searching and sorting algorithms are categorized as conceptual and metacognitive knowledge. This means that learning question should include two aspects, conceptual and metacognitive knowledge. First aspect is associated with constructing variable relations by using passing parameter and modular technique.Second aspect is linked to the capability to determine the correctness of relation designs.

G. Application to Learning Process

Evaluation results regarding the learning questions demonstrated: (1) not all learning questions direct to conceptual knowledge, and (2) none of these directs to metacognitive knowledge. Therefore, learning questions are transformed so that they can direct to conceptual and metacognitive knowledge

The transformations which have been done includes: (1) changing detail objectives in every learning session, (2) preparing media for stimulating learning activities in class, and (3) increasing discussion time allocation to become two times the lecture talk in order to help the students in relating the knowledge which has been learned. Learning media which has been added to this research is software application that can be used for learning the correlation between data processing component, variables, data, constants, operators, logical relations, sequential processes, branching processes, and looping processes.

Based on the questionnaires handed-out to 120 students, it can be demonstrated that: (1) all respondents agree that software application can be very helpful to them in finding the correlation between one concept to others, (2) 102 students or 85% of the respondents can identify the correlation between data processing components, variables, data, constants,

operators, logical relations, sequential processes, branching processes, and looping processes, and (3) 98 students or 81% of the respondents can evaluate their own works.

IV. CONCLUSION

By using deductive and analogy reasoning, the knowledge in Logic and Algorithms can be categorized into factual, conceptual, procedural, and metacognitive. However, in order to design meaningful learning, all knowledge in Logic and Algorithms has to be categorized as conceptual and metacognitive.

Based on the result test, it is acknowledged that: (1) 85% of the students can relate components of data processing, variables, data, constants, operators, logical relations, sequential processes, branching processes as well as looping processes; also (2) 81%of the students are capable to evaluate their own works

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ACERTAINING THE INTRICACIES ASSOCIATED WITH THE SELF-CONCEPT DEVELOPMENT OF BLACK LEARENRS IN HISTORICALLY WHITE SCHOOLS

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ABSTRACT

This purpose of this paper is to investigate the intricacies associated with the self-concept formation of black learners attending historically white high schools in the Northern Cape. For the purpose of the study, the term black will also refer to learners, who during the apartheid era was classified as coloured, Indian, as well as, other non-white groups. Black people in South Africa were regarded and treated as both intellectually and racially inferior during the apartheid years. This may have created a poor self-concept in a number of generations of blacks (Manganyi, 1973:10). The situation was further exacerbated, when, after the demise of apartheid, hordes of black learners flocked to historically white schools. This exodus from historically black schools was mostly inspired by the perception that better facilities and superior education existed in these schools, as opposed to that on offer in historically black schools. The staff component (mostly white) of historically white schools appeared to be inadequately prepared for these drastic changes which resulted in cultural misunderstandings, resentment and hostility on both sides of the racial divide. Consequently, the school that should normally contribute to developing a positive self-concept of learners, seemingly had the opposite effect on black learners. The self-concept of black learners in these schools seemed to have been intermittently under attack. An empirical investigation, by way of the quantitative research method was employed, to ascertain the effect historically white schools have on the self-concept development of black learners attending these schools. Some of the findings of this study indicate the manifestation of negative influences, such as general adaptation challenges, hostile and inconsiderate teacher behavior, higher failure and drop-out rates, lower teacher expectations, as well as peer rejection in the townships, amongst others, as having an effect on the self-concept development of black learners. Suggestions are made as to how historically white schools could support learners in enhancing their self-concept development.

KEYWORDS: Self-concept development, Black learners, historically white schools, Northern Cape

INTRODUCTION

The historical development of racially integrated education in South Africa can only be effectively evaluated against the backdrop of the educational history of the country. Prior to 1948, a limited mixing of races occurred in certain areas. The official and formal segregation of schools along racial and ethnic lines commenced in 1948, when the Nationalist Party came to power. The racial, ethnic and geographical separations within the education system led to the birth of 15 separate education departments, until before 1994. In this regard, Mda, Thobeka, Mathata and Steward (2000:44) states that these divisions in education were supported and sustained by apartheid laws such as, the 1950 Group Areas Act, the 1953 Bantu Education Act, the 1954 Native Resettlement Act, the Reservation of Separate Amenities Act, the Population Registration Act, the Homeland Act, and so forth.

BACKGROUND TO THE STUDY

The advent of a democratic South Africa, also resulted in a number of challenges in education, particularly for historically white schools. For many years these schools catered mainly for learners from a monocultural background. When Black learners were admitted to these schools, most of these schools responded by adopting an assimilation approach. Matters were further compounded by the fact that the majority of the educators in the Northern Cape were predominantly white, while black educators only constituted 9% of the teaching staff (Northern Cape Department of Education, EMIS, 2008).

To this effect, Goduka (1999:88) protests that in spite of the diverse groups of learners, these schools continued to function as monocultural schools. Black learners from diverse cultural backgrounds had to adopt and adapt to the existing monocultural context of the school. The curriculum and school culture was predominantly based on historically white traditions, while learner expectations were grounded on the experiences of educators, who in the first place, were never prepared to deal with diversity.

Using diversity to welcome, accommodate and learn from their fellow citizens could have instill positive attitudes in these learners that could assist them to attain self-confidence, which might enable them to respond meaningfully to influence both black- and white peers. However, failure by historically white school to maintain a healthy balance between enculturation, acculturation and de-culturation may prove to be confusing to the black learner. This confusion may in turn hamper the development of a positive concept for the Black learner, (Ntuli, 1998:9).

The study investigates whether negative influences, such as general adaptation challenges, hostile and inconsiderate teacher behaviour, higher failure and drop-out rates, lower teacher expectations, as well as, peer rejection in the townships, amongst others, has an effect on the self-concept development of black learners

THEORETICAL FRAMEWORK

The study is located in the Social-Learning theory maintains that children learn social behaviours by observing and imitating models, usually those constituted by their parents. Learners are also regarded as active contributors to their own learning, rather than as primarily reactive (Papalia and Olds 1996). In the case of black learners in historically white

schools, the home, community and society at large constitute the informal learning environment.

The learning world of the black child in the informal setting of the home, community and society at large, reflects a teaching-learning situation. The home, community and society impart their knowledge and skills to be learned by learner and the learner is expected to learn from these encounters (Alexander 2004). According to Mpisi 2010, the argument could therefore be made, that the latter mentioned aspects should be considered as key in the teaching and learning situation in historically white schools with a multicultural character, and should apply when teaching black learners in particular.

Vygotsky (in Papalia and Olds, 1996) accentuates this and insists that certain cultural specific practices, indeed affect the development of a person living within a specific social context. The Social learning approach would therefore seemed to be the most appropriate to locate the study.

AIM OF THE STUDY

The aim of the study is to investigate the influence attending historically white schools has on the self-concept formation of black learners in Northern Cape high schools.

LITERATURE STUDY

Marsh (2016: 256) broadly defined self-concept as a person's self-perceptions formed through experience with, and interpretations of, one's environment. These self-perceptions are influenced especially by evaluations by significant others, by reinforcement, and by attributions for one's behavior.

There are at least three factors that influence the kinds of self-concepts that learners form, namely: learners' previous performance, the behaviours of other individuals, and in some cases the achievements of a larger group to which learners belong (Ormrod, 2008:70). Each of these factors may offer insights into how educators can enhance learners' sense of self. For the purpose of the study, the behaviours of other individuals, like the educators would be of particular significance.

Soon after 1994, South African historically white schools did very little to address the existing social and cultural imbalances. The presence of black learners at these schools were met with the hostility and inconsiderate behavior from white educators. The social values to which many white educators in these schools subscribe to, may differ remarkably from that of their black learners. This often resulted in many black learners experiencing great difficulty adapting at their new schools and consequently become less confident, (Cross and Mkwanazi-Twala,1998:28-30).

Many learners from a non-Afrocentric cultural background learn best when working on their own, and in some instances, with the assistance of an adult. Conversely, the opposite holds true for many black learners. Consequently, many black learners are prone to seek the aid and assistance of classmates, at least as frequently as they do the educator's, (Khosa in (Machaisa 2004:39 - 43), Coutts (1992:80) and Lemmer, Meier, van Wyk (2006:52). Many educators from a historic monocultural background may interpret this behaviour as cheating, copying,

or frivolous socialising. What many of these educators fail to understand, is that the behaviour displayed by these learners may in fact be their natural inclination to seek assistance from a peer, Longstreet in (Bennett 2007:59 - 66) and (Erasmus and Ferreira, 2002:31 – 32).

The above mentioned clearly indicates that conflict, indeed exists between what the black learner is taught at home and school, respectively. This may in turn result in these learners feeling isolated, alienated and confused, causing them to become withdrawn and may further stymie their self-concept development.

Another issue that may seemingly impact on the on the self-concept development of these learners, may be the general perception by white educators, that the standard of education has dropped after black learners were admitted to these schools. Some educators and even learners perceive the standards of the historically white schools to be very high and that the acceptance of black learners may necessarily result in a drop in standards. Some historically white schools still surreptitiously use covert measures such as, entrance tests, language, high school fees and feeder area to try to limit the enrolment of blacks and in an attempt to supposedly keep the standards high Khosa in (Machaisa 2004:39 - 43), Coutts (1992:80) and Lemmer et al. 2006:5)

A complaint that is regularly voiced, is that educators often make snap judgements, based on their subjective perceptions about learners and consequently treat them differently. Many educators interact with learners differently according to the learner's race and socio-economic status (Bennett, 2007:23). These sentiments are supported by Bennett's (2007:23) research findings that educators` attitudes influence learner achievements. These findings further laid bare the fact that the expectations of educators can, and sometimes do affect educator – learner interaction, as well as learner outcomes. However, the processes is much more complex than originally believed. One conclusion that may be drawn on, is that educator beliefs and expectations interact with learner beliefs and behaviours. A parallel is drawn between ethnicity and educator expectations which tend to suggest that educator expectations influence beliefs and behaviours in the same manner as ethnicity. (Lemmer et al. 2006:5 and Wang and Niehart, 2015:64) support the afore-mentioned view and are convinced that many white educators have low expectations of their black learners and tend to be more supportive and stimulating with their white learners, with the result that black learners underachieve. Moletsane (1999:43) concurs with this view and is convinced that many white educators believe that black learners come from educationally and culturally inferior backgrounds and subsequently have lower academic expectations from black learners.

A trend that is rather disturbing, is the high failure and drop-out rate among black learners at historically white schools. Most of the learners, who fail or drop-out of school, do in fact possess the cognitive ability to complete school. Learner failure and drop-out may be more likely to be emotionally immature, less well-adjusted, manifest a defective self-concept, rebellion, negativism, alienation, deep-seated feelings of hostility and resentment. Learners who fail and drop-out may often possess a low self-concept, suffers from inferiority, as well as excessive fear and anxiety Muha, (77:1991).

In a historically white school context, Billings (2008:5) prefers to attribute the failure and drop-out rate to the fact that many educators have adopted low expectations for black learners, a stance that sets the stage for their possible underachievement. In addition, the author argues that educators often regard black learners from a deficit viewpoint. According

to this viewpoint, educators may focus primarily on the learners' perceived shortcomings and may pathologise their academic failure, as a product of poverty and unsupportive family lives. By adhering to this deficit viewpoint, educators invalidate the unique perspectives, skills, and experiences of their learners. This tendency is supported by a newspaper article that report that black learners at historically white institutions are continually and openly reminded that they would fail "because blacks cannot do accounting", (Sunday Times, 2009:6). To this end, Wang and Niehart, (2015:64) reiterates that the self-concept has a significant effect on academic achievement of learners.

When South Africa became a democratic country in 1994, a significant number of black learners opted to attend historically secluded white schools. The reason for this phenomenon, according to Ntuli, (1998:9) is that many black parents were lured by the conducive educational conditions that is in sharp contrast with those in black schools. While the latter might be true, black learners were now confronted with the dilemma of actualising themselves in an environment that straddles two divergent social milieus, the one represented by home in the township and the other by school situated in mostly affluent suburbs. This effectively mean that these learners has to make sense out of these two opposing worlds, which in itself presents a new set of challenges. Since most of these learners travel by public transport (minibus taxis), it means that they are often not punctual for school. A further challenge is that academic supportive resources in the townships are either absent, over crowded or under resourced. These learners also have to deal with their peers attending school in the township, as the latter tend to regard them as deserters and project them as perceiving themselves as superior, (McKinney 2010:193).

The above-mentioned raises a number of pertinent questions, relating to how these issues affects the self-concept development of black learners attending these schools.

RESEARCH DESIGN AND METHODOLOGY

Quantitative Research

The literature study focused on the intricacies associated with the formation of the self-concept of black learners in a predominantly monogamous socio-educational environment in the Northern Cape province of South Africa. Special reference is made to the influence of negative manifestation, such as, higher failure and drop-out rates, lower educator expectations, hostile and inconsiderate teacher behavior and uninviting classrooms.

An empirical investigation, by way of the quantitative research method was conducted. A self- designed 4- point Likert scale questionnaires was used to determine the intricacies associated with the formation of the self-concept of black learners in historically white schools of the Northern Cape.

Research sample Composition

The geographical area of this study was limited to twenty seven historically white high schools in the five education districts of the Northern Cape province, namely, Frances Baard (10 schools), ZF Mgcawu (6 schools), Pixley Ka Seme (4 schools), Namaqua (5 schools) and JT Gaetsewe education district (2 schools).

The research group consisted of 1037 black learners from historically white schools, comprising of at least 40 learners from each of the selected schools. Permission to conduct the empirical study was sought from the Northern Cape Education Department, as well as

from principals of these specific schools. A total of 832 questionnaires were completed by learners.

A pilot study in the form of a structured closed questionnaire was also conducted.

The data acquired from the questionnaires was integrated with the data acquired from the literature study, in order for the researcher to make summaries, draw conclusions and offer recommendations.

DATA PRESENTATION AND DISCUSSION

A number of questions relating to how black learners experienced historically white high schools were posed to black learners enrolled at these schools. Table 1 represents a summary of the response of participating learners.

TABLE 1: SUMMARY OF BLACK LEARNERS' EXPERIENCES AT HISTORICALLY WHITE HIGH SCHOOLS IN THE NORTHERN CAPE

	χ^2 Value	p-value	Strongly Agree	Agree	Disagree	Strongly Disagree
			%	%	%	%
1.1 I experienced no difficulty in adapting to my school.	1	0.486	41.8	40.3	13.5	4.4
1.2 Racial incidents often happen at our school.	1	0.583	20.1	36.7	28.1	15.1
1.3 In our school, all learners, irrespective of their cultural background are treated the same.	1	0.565	27.5	38.2	25.8	8.5
1.4 Enrolling black learners in former white schools has led to a drop in standards.	1	0.477	15.1	33.7	32.8	18.4
1.5 Educators have higher academic expectations white learners than learners from black learners	1	0.523	25.7	28.8	26.7	18.8
1.6 Black learners tend to be more withdrawn than white learners during group work and other class activities.	1	0.524	20.0	30.5	32.9	16.6
1.7 The failure and drop-out rate tend to be higher among black learners than white learners.	1	0.539	27.8	36.4	22.9	12.9
1.8 I am more comfortable to be taught by educators belonging to my own culture	1	0.489	18.5	42.6	20.5	18.4
1.9 I sometimes experience conflict between what I am taught at school and what I am taught at home	1	0.475	18.6	42.5	23.3	15.6
1.10 My friends who are not attending historically white schools still accepts me as a friend and has not changed their attitude towards me	1	0.623	57.8	31.6	7.2	3.4
1.11 I find difficulty in going to school when there are strikes and stay-aways in townships	1	0.567	13.5	20.6	37.4	28.5
1.12 I find living in a township has a direct effect on my academic	1	0.443	22.8	24.0	27.5	25.7

performance, because of lack of facilities such as computer centres and libraries in these areas						
1.13 If I could choose, I would prefer to attend a historically black school	1	0.518	18.0	16.5	29.1	36.4

The difference is statistically significant if $P < 0.05$

In order to assess the factorability of the data, the researcher used the Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy and Bartlett's test of sphericity, that states that for the difference to be statistically significant, the P-value must be < than 0.05. Basically this means that there is a 95% chance that the results are due to influence of an independent variable, or a combination of independent variables and not to chance (De Vos, Strydom, Fouché, Delport. 2005:245).

In the learner questionnaire, question 1.1 to 1.13 was asked to gather information on the experiences of the Black learner at historically white high schools in the Northern Cape. Table 1 presents a summary of how learners responded.

Tabulated in table 1, are the significance of the p-values for the experiences of black learners at historically white high schools in the Northern Cape. Again, all are greater than 0.05 and are therefore not statistically significant.

Surprisingly most of the learners agreed that they experienced no difficulty in adapting at their school (41.8%) strongly agreed, 40.3% agreed, while 13.5% disagreed and 4.4% strongly disagreed. This is contrary to the views held by (Cross and Mkwanazi-Twala,1998:28-30) that believe that black learners' self-concept development is adversely affected because of the difficulty they experience with adapting at these schools.

These findings augments the conviction of Moletsane (1999:32) that insists that racial incidents are widely spread at these schools and that the mandate for transformation in our schools is of paramount importance. The majority of learners conceded that racial incidents often happen at their school, 20.1 % strongly agreed 36.7% agreed 28.1 % disagreed and 15.1 % strongly disagreed. In order for historically white schools to be successful in positively contributing to the self-concept development, the total school environment, including sporting and cultural activities, should be modified, so as to be more representative of the cultural diverse nature of the South African society, (Lemmer, et al., 2006:10).

Again, contradictory to Bennett's (2007:23) finding that educators often make snap judgements, based on their subjective perceptions about learners and consequently treat them differently. There was a preponderance of learners who indicated that all learners in their school, irrespective of their cultural background, are treated the same. At least 20.1% strongly agreed, 36.7% agreed, 28.1% disagreed and 15.1% strongly disagreed. This is indeed encouraging and may bode well to enhance the self-concept development of black learners at these schools.

The greatest percentage of the learners agreed, that enrolling black learners in former white schools has led to a drop in standards, 15.1% strongly agreed, 33.7% agreed, 32.8% disagreed and 18.4% strongly disagreed. These findings concur with that of Khosa in (Machaisa

2004:39 - 43), Coutts (1992:80) and Lemmer et al. (2006:52) that emphasizes, that the above is the general perception that black children possess inferior academic capabilities. It is interesting to note that this opinion is also shared by black learners at these schools. This further highlight the influence, perceptions held at these schools, have on the self-concept development of these learners.

Learners seem to agree with the literature that, black learners tend to be more withdrawn than white learners during group work and other class activities, 20.0% strongly agreed, 30.5% agreed, while 32.9% disagreed only 16.6% strongly disagreed. This phenomenon strongly indicates that historically white schools dealt with integration in a manner, that has been characterised by asymmetry, in which white people are the bearers of preferred knowledge and blacks, by contrast, as the embodiment of inferior understanding of the world (McKinney 2010:192). It is not surprising that these learners appear withdrawn and lack confidence. This state of affairs is hardly conducive for the development of a positive self-concept.

Sadly, learners indicated that their educators have higher academic expectations from white learners, than from black learners, 25.7 % strongly agreed, 28.8% agreed 26.7%, disagreed and 18.8% strongly disagreed.

At least 27.8% of the learners strongly agreed, 36.4% agreed 22.9% disagreed and 12.9% strongly disagreed with the statement that the failure and drop-out rate tend to be higher amongst black learners than amongst white learners. A predictably, but yet disheartening revelation, is the low academic expectations historically white school educator had from their black learners. Equally disheartening is the high failure and drop-out rate amongst these learners. These findings are accentuated in the literature, by Billings (2008:5) and (Ormrod, 2008:70), that point out that by adhering to a deficit viewpoint, white educators invalidate the unique perspectives, skills, and experiences of their learners. This tendency is supported by a newspaper article that report that black learners at historically white institutions are continually and openly reminded that they would fail “because blacks cannot do accounting”, (Sunday Times, 2009:6).

An overwhelming majority of learners indicated that they are more comfortable to be taught by educators belonging to their own culture, 18.5% strongly agreed 42.6% agreed 20.5%, disagreed and 18.4% strongly disagreed.

The finding that an overwhelming percentage of black learners experienced conflict between what they are taught at school and home, respectively, seemed to be a major issue with, 18.6% strongly agreeing, 42.5% agreeing, 23.3%, disagreed and 15.6% strongly disagreed. These findings are echoed the sentiments of (Erasmus and Ferreira: 2002: 30). They argue that children cannot be treated as learners in the normal sense without considering their immediate background and family history as well as the impact of these factors on their reaction to the learning environment. In order to ensure that black learners' true identities are not denied and that they are not and do not feel discriminated against at school. These schools should use a holistic approach to teaching and learning to gain a better understanding of the life-world(s) of black learners.

Although the literature suggests that acceptance by friends in the township, who are not attending historically white schools to be a problem, the results displays the opposite. A surprising 57.8% strongly agreed, 31.6% agreed 7.2%, disagreed and only a mere 3.4% strongly disagreed with the statement.

Despite being problematised by the literature, a generous percentage of the learners indicated that they found no difficulty in going to school when there are strikes and stay-aways in townships. Only13.5 % strongly agreed, 20.6% agreed, 37.4%, disagreed and 28.5% strongly disagreed with the statement.

The majority indicated that living in a township has no direct effect on their academic performance, because of lack of facilities, 22.8% strongly agreed, 24.0% agreed, 27.5%, disagreed and 25.7% strongly disagreed with the statement.

The findings on the questions about living in the township disputes that of the literature, where Ntuli, (1998:9) and (McKinney 2010:193) show these matters as a challenge and subsequently hampering the academic progress of these learners. The research proved the contrary, namely that these students are still accepted by their township school- attending peers; that travelling to school during strikes was not a problem and that the absence or lack of academic resources in townships did not impede their academic progress.

The findings of the study disputes the argument presented by Erasmus and Ferreira: (2002:31) that postulate that, when given a choice of schools, most black learners would choose a school where all race groups are equally represented. The findings suggests that the majority of black learners at historical white schools would not prefer to attend historically black schools 18.0% strongly agreed, 16.5%, agreed 29.1%, disagreed and 36.4% strongly disagreed.

RECOMMENDATIONS

The following aspects of the research, regarding the self-concept development of black learners and historically white schools are recommended for further investigation:

- Historically white schools should transform in such a manner that the values, traditions, culture and ethos of the black learners too, are reflected in them. In order for these schools to transform, the school management team should make a concerted effort to ensure that parents of black learners serve on the school governing body and parent-educator structures. Additionally, it is also of cardinal importance that the expertise of black parents on matters of culture, tradition, sport and other relevant issues should be genuinely and sincerely tapped into.
- Educators should have positive expectations for all the learners. This attitude will prevent educators from making snap judgments, based on their subjective perceptions about black learners coming from educationally and culturally inferior backgrounds and consequently treating them differently. It is therefore imperative, that educators should be equipped with the skills to enhance their observation and interpretation of culturally-diverse classroom behaviour. The latter should be done in a manner that is not based on myths and stereotypes, nor influenced by race or culture. Furthermore, educators should be skilled on how to establish a classroom atmosphere of acceptance, where all learners are expected to achieve optimally. This expectation should be based on the learners` intellectual abilities, as well as their social capabilities and not on educator prejudice. Moreover, educators should be trained to remain objective at all times

- Sincere attempts should be made to limit the high failure and drop-out rate amongst black learners. Most black learners, who fail or drop-out of school, may in fact possess the cognitive ability to complete their school careers. Possible reasons for black learners' failure and drop-out at historically white schools may be because of defective self-concepts, suffering from a sense of inferiority, negativism, alienation or experiences of deep-seated feelings of hostility and resentment.

- Schools should make every effort to try and strike a balance between what learners are taught at school and what they are being taught at home. In this regard, the establishment of effective communication and information-disseminating mechanisms between the school and home environment may assist in counteracting this divide. It is through the establishment of such mechanisms that historically white schools could try to accommodate learners in fulfilling cultural obligations, such as: initiation; religious rituals; adhering to special dietary requirements; dress codes, and religious values in general.

- Education authorities should ensure the recognition and acceptance of the rightful existence of different cultural groups at all historically white schools. This could be achieved by including extra-curricula activities to the school's programme that will appeal to learners from various cultural backgrounds. Another strategy may be to recruit more black educators – in this way black learners may also have "culturally appropriate" role models with which to identify.

CONCLUSION

This study was meant to investigate the intricacies associated with the self-concept development of black learners attending historically white High schools in the Northern Cape. Findings from the literature and empirical investigation indicated that some situational experiences encountered black learners at historically white schools may well curtail the development a positive self-concept. It is therefore hoped that issues such as, low educator expectations (of black learners), the disjuncture between the home- and school education, as well as the high failure and drop-out rate in particular, be addressed, as a matter of urgency. Effectively addressing and remedying these matters may assist black learners at these schools to reach their optimal academic and pyscho-social potential.

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An Examination of the Relationship between Language and Thought

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Abstract

This paper explores the intricate relationship between language and thought. Different views on this relationship are examined. The role of language in the development of thought and the issue as to whether thought can arise without the matrix of language are explored. The extent to which language affects thought is also investigated briefly. It is widely recognized that the notion that language explicitly determines how speakers think and act is questionable, but findings of studies provide solid evidence that certain aspects of language do have a significant effect on how speakers of different languages think and view the world.

Key words: mentalese, Sapir-Whorf hypothesis, grammatical gender, thinking for speaking

The Beginning of Language

The appearance of Homo sapiens some 200,000 years ago marks the beginning of infinitesimal changes in the way in which human beings communicated with one another. These changes perhaps emerged as Homo sapiens developed special tools such as fish hooks, harpoons, bows and arrows, knives with handles, and flint lighters by working in groups. Clearly they were more intelligent than their ancestors, Homo erectus, who continued to make and use the same ax for about a million years. This fact suggests that his cognition was still limited. Ehrlich (2000:154) writes that the superior communicative skills of Homo sapiens– although still very much gestural at first- played a role in fostering group cooperation. By collaborating in groups, his communicative skills gradually improved, resulting in the production of more sophisticated tools. Ehrlich also points out that greater ‘dexterity of tool use is linked with language skills’, and he also suggests that improved neural control could have resulted in more rapid and effective protolanguage.

In a similar vein, Crystal (2006:350-351) refers to *The Yo-he-ho* theory according to which ‘speech arose as people worked together’. This theory postulates that human physical efforts

produced communal, rhythmical grunts, which eventually developed into chants, and thus language emerged. As Homo sapiens developed the ability to utter distinct sounds, it is thought that he acquired a working vocabulary. The development of syntax also allowed early hominids to string words together and to make sentences. Finally, McCrone (2002:57) notes that 'a rule-handling brain was a key advance made by Homo sapiens'. Such a brain may have allowed our ancestors to formulate new ideas and to use language to convey their thoughts in innovative ways. In view of these changes, this essay will address some of the main issues concerning the effects of language on thought and examine the relationship between language and thought.

McCrone (2002:56) observes that 'language allowed the mind of Homo sapiens to break free'. No longer was he trapped in the immediate present as their ancestors had been. His brain evolved not only as a mechanism to reflect upon problems, but also to direct his attention to making decisions about his future. As the human brain grew in complexity, man's power to think most likely grew. A higher level of self-awareness perhaps allowed Homo sapiens to better evaluate his own capabilities and to consider the intention of others (Ehrlich, 2002:156).

The ability to reason, to convey thoughts, and to empathize with other humans by means of a learned symbolic communication system is what distinguishes humans from other species. According to Bickerton (as cited in Carruthers, 2002), this extraordinary ability to think and reason about topics and problems in the abstract involved a dramatic re-wiring of the hominid brain. Bickerton suggests that it was language that conferred on humans the ability to think in the abstract.

The Relationship between Language and Thought

To gain a better understanding of the relationship between the language and thought, it is necessary to examine briefly the distinction between the mind and the brain. Gribbin (2002:17) explains that 'the brain exists to turn inputs into outputs as quickly as possible'.The brain and the mind are so intricately interrelated that they almost indistinguishable because the mind is immaterial and is invisible. The brain is a biological system which consists of 78% water, 10% fat, 8% protein, 1% carbohydrate, 1% salt, and 2% a mix of other constituents. Sajid compares the brain to the engine of a car and the mind to the driver. Likewise, the brain resembles a huge chemical factory which can be compared to the hardware of a computer consisting of billions of cells and trillions synaptic connections or neural networks. The mind is like its software. The brain is the "container" where the mind is located. In this container, electronic impulses generate thoughts. In short, the mind is a conglomeration of thoughts, memories and mental events that exist within the brain.

It is thought that the Boca's Area in the frontal lobe of the brain plays a significant role in speech production as well as language comprehension, whereas the Wernicke's area plays a role in understanding written and spoken language. As aforementioned, language enables humans to formulate ideas, to convey thoughts, feelings, and desires to communicate with each other, to form

meaningful relationships, to reflect on their past experiences, and to think about problems and situations with a view to the future. Most importantly, Christian (2011) explains that language enables humans to share what they have learned so that it can accumulate in their collective memory. The human ability to acquire knowledge and to pass it on to the next generation is what distinguishes humans from other species.

Language is a symbolic communication system used by a community consisting of three main elements: vocabulary, syntax, and meaning. Language enables us to articulate ideas. Thought is a mental activity whereby ideas are formulated in the mind and new ideas are inferred from old ones. Words are the medium by which we express thoughts. Bayne (2013:4) notes that thought is not dependent on the environment in the way that perception is. If one perceives an apple there must be a form of 'engaged' and 'stimulus-dependent' contact with the world. He explains that thought 'represents objects in a 'disengaged' and a 'stimulus-independent' manner which allows us to think about things in their absence'. He (2013:10) also mentions the claim made by some theorists that there is a distinction between thought and perceptual states and bodily sensations. Such theorists, he says, contend that 'thoughts involve the deployment of concepts whereas sensory states do not.'

Since ancient times, thinkers have striven to understand the relationship between language and thought. The 18th century German scholar Wilhelm von Humboldt is believed that language and thought were indistinguishable. He is credited with having propounded the hypothesis that language determines thought (Phipps, 2001). The assertion that speakers of different of languages have different cognitive systems, and the notion that the structure of a language affects the speakers' perceptions and thus influences their thought patterns and worldviews is known as the Sapir-Whorf hypothesis. The view that differences among languages result in differences in the thoughts of the speakers is referred to as linguistic relativity. Some thinkers assert that humans are in a sense 'mental prisoners' because it is impossible for their thoughts to escape the confines language.

Faccone et al (2000) write that attempts to provide evidence of linguistic relativity are based on three claims. The first claim posits that 'languages carve the spectrum into color words at different places'. O'Neil (2006) writes that humans share similar sense perceptions of color despite differences in color terminology. The second one put forth by Whorf hypothesized that Hopi speakers think about time and space in a different way because of the language they have learned. The third claim states that Eskimos think about snow in so many ways because of the numerous words their languages have for snow. Boroditsky (2009:8) contends that people who speak different languages think differently, and that aspects of grammar can profoundly affect how they view the world. Pinker rejects such notions, claiming there is no solid evidence proving that language affects how people think.

There are various views concerning the nature of the relationship between language and thought.

As reported by Bloom & Keil (2001:351-353) the views concerning this relationship are complex and multifaceted. The first view states that thought cannot exist without language. Pinker maintains that the language we speak does not affect how we think, and that abstract cognition can take place in our minds without natural language. Foder takes the view that before we are exposed to words in a language, we already have concepts that these words correspond to. He refers to this notion as 'mentalese' or 'language of thought'. Likewise, Ehrlich (2000:147) notes that Pinker believes 'people do their thinking in a deep, rich built-in universal language' similar to Chomsky's universal language. Another view exemplified by various linguists and anthropologists espouses the view that language is instrumental in shaping people's thoughts. Vygotsky explains the relationship between words and thought as follows:

"Thought is not merely expressed in words; it comes into existence through them. Every thought tends to connect something with something else, to establish a relation between things. Every thought moves, grows, and develops, fulfills a function, solves a problem."

(See http://web.rollins.edu/~gvaliante/vygotsky.htm)

What is the Role of Language?

According to Sapir, thought, and especially conceptual thought, happens only through language. (Doms, 2004). On the other hand, Boas, who was Sapir's teacher, claimed that language simply reflects thought. Bloom and Keil (2001, p.353) report that some scholars argue that the specific words of a language determine how our minds break reality into different chunks, while others put forth the notion that our thoughts coalesce into larger complexes by means of syntax.

It is undisputed that the use of language requires thought, but there is considerable debate as to whether thought requires or involves language. Carruthers (1998) discusses the various views concerning this debate. Thinkers who endorse *the cognitive conception of language* maintain that language has a direct role to play in thinking and reasoning in addition to its communicative functions. On the other hand, those who espouse *the communicative conception of language* argue that language is not essentially implicated in thinking, but serves only to facilitate communication of thought. Carruthers (2003) explains that those who endorse this notion believe that 'language is only a channel, or conduit, for transferring thought into and out the mind'. He observes that spoken language is only a medium through which thoughts can be conveyed from mind to mind, rather than being involved in the process of thought itself. Vygotsky (as cited in Carruthers, 2003) argues that language and speech serve to "scaffold" the development of cognitive abilities in the growing child'. Another view put forth by Clark in 1998 (as cited in Carruthers, 2003), known as *the supra- communicative conception of language*, posits that language is used not just for communicating but also for augmenting human cognitive powers, that is, a tool which enhances, extends, and facilitates thought and cognition. Carruthers writes that 'on the supra- communicative

account, the involvement of language in thought only arises when people focus on the process of thinking or reasoning over time'.

In sum, Carruthers (as cited in Slezak, n.d, p.9) argues that conscious thoughts "constitutively involve" natural language in the sense that they are about natural language, and that language functions as the object or content of thought. He contends that our conscious thinking is **in** natural language because we mostly think (when our thinking is conscious) by imaging sentences of natural language, and trains of thought consist of manipulations and sequences of such images. Carruthers also suggests (as cited in Bloom and Keil, 2001, p.359) that certain types of thought, such as 'causal reasoning and social cognition require the support of an internalized natural language'. Social cognition refers to those aspects of mental processing that are shaped by social interaction ….. and which in turn influence subsequent behavior.
(See Kimberly A. et. al http://faculty.wcas.northwestern.edu/bodenhausen/ECS.pdf).

In contrast, Spelke (as cited in Cromie, 2004) maintains that children learn to think before they speak, and that they learn to think independently about objects before they learn language. They are born with the ability to describe what is on their minds. Spelke says that even newborns are able understand that things still exist when they no longer see them. (Talbot, 2006). In a similar vein, Cole (1998:6) reports that infants can expect two things to appear when they have gone behind a curtain. Cromie (2004) also reports that 'children are born with the ability to describe what is on their minds, but that the subtleties of thought which are not reflected in language seem to go unspoken when they become older.' Findings of experiments with babies conducted by Spelk and Hespos suggest that 'language reduces sensitivity to thought distinctions not considered by the native language'.

The contention that our thoughts are restricted by the limitations of the language we use has considerable appeal to those who believe that the ability to think seems intrinsically related to language. Pinker, however, contends that we do not think in language or words but in visual and auditory images and in abstract propositions which he refers to as 'mentalese'. This concept is defined in the glossary of his book *The Language Instinct* as follows: "The hypothetical language of thought, or representation of concepts and propositions in the brain, in which ideas, including the meanings of words and sentences, are couched." Pinker (1994:81) states as follows:

"People do not think in English or Chinese or Apache; they think in a language of thought".

Gaynor (1995) writes in reference to mentalese that language is not a tool for thinking but merely a tool for translating my mentalese into yours. As a tool for understanding the world, language, in mentalese, is like a pair of eyeglasses. At best, language can help us to "see" more clearly the abstractions that we can already "see" without language'. Gaynor states that for Pinker,

mentalese is a species-wide, innate function that is unaffected by the process of learning a language or the process of using a language.

Examining Arguments Against Mentalese

Two central tenets of Pinker's views on thought and language are that thought takes place in mentalese and that natural language must be translated into mentalese before thought can occur. Cole (1998:3-11) explains why Pinker believes that not all thought is in natural language. First, everyone has the experience of saying something or writing a sentence, then realizing that what we said or wrote was not what we intended. Secondly, we seem to remember the gist of things people tell us, not each word. Thirdly, new words could not be coined if thoughts depended on words. Fourthly, translation from one language to another would be impossible. Lastly, language could not be learned unless there were mentalese. Cole's criticisms of Pinker's reasoning are summarized as follows:

1. To presume that something we meant to say must be mentalese and that something went wrong with translation from mentalese is somewhat of a specious argument.
2. Pinker suggests that new words could not be coined if thoughts depended on words. (Pinker,1994:58). Cole is not able understand how the lack of mentalese could prevent people from coining new words. He cites several words that have been coined such as Kleenex, slimeball, boomer (baby boomer), PC, and Wasp (White Anglo-Saxon Protestant) which he thinks would render mentalese useless.
3. The argument that language could not be learned without mentalese is not cleanly explained. Why is it so crucial to leaning language?
4. Finally, Cole refutes the claim that translation between natural languages would be impossible without mentalese.

He recapitulates briefly his criticisms of mentalese by stating:

"If thinking is in mentalese rather than natural language, then events that impair linguistic function or auditory imaging should not affect thinking. But they do".

"Another problem with the Mentalese hypothesis is that it has the apparent consequence, in relegating natural language to a mere transmission medium inessential to thought, that pre-linguistic humans should be fully capable, of say, coming up with the theory of General Relativity, or a Mentalese equivalent of Hamlet, without any recourse or experience with natural language or mathematical symbolism. They don't." (Cole, 1997)

Thinking for Speaking

The notion that speakers of different languages think differently is highly controversial. However, the view that some aspects of language may have an effect is perhaps less contentious. Slobin (as cited in Semin, 2009) suggests that language may influence thought during what he refers to as '*thinking for speaking*'. He explains that speakers are 'forced to pay attention to specific aspects of their experiences and reality by making these aspects grammatically obligatory'. In his words, *thinking for speaking* 'is at the level at which thought is forced into schematic expression that a particular language gives you.' For example, if you are a speaker of French, Spanish, Italian, Portuguese, or German, it is imperative that one use the correct grammatical genders or noun classes. Such languages require that speakers make specific inflections to pronouns, adjectives, and possessives depending on the gender of the noun. Spanish, French, Portuguese and Italian are gender sensitive languages which have two grammatical genders – masculine and feminine. German, Norwegian, Polish, and the majority of Slavic languages, including Russian have three grammatical genders -masculine, feminine and neuter. Lastly, Slavic languages, such as Russian and Polish even make grammatical distinctions between animate and inanimate nouns.

Does Grammatical Gender affect Thinking?

To examine whether the assignment of genders is really arbitrary, and to determine whether the grammatical genders assigned to nouns have semantic consequences, Boroditsky and Schmidt (2000) conducted two experiments. A total of seventy-six participants took part in their study – twenty-five native Spanish speakers, sixteen native German speakers and thirty-five native English speakers. Results of their experiments suggest that 'the assignment of genders to nouns is not entirely arbitrary but may to some extent reflect the perceived masculine or feminine properties of the nouns referents'. The findings also revealed that speakers' memory for object-name pairs (e.g., apple-Patricia) was better in cases where the gender of the proper name was the same as the grammatical gender of the object name in their native language. Boroditsky (2009) also suggests that the gender of nouns affects how people describe certain nouns. She notes that German and Spanish speakers describe nouns differently. For example, in Spanish the word *bridge* is masculine (*un puente*) and in German it is feminine (*die Brücke***).** Spanish speakers use words such as *big, dangerous, strong*, and *sturdy* to describe a *bridge*, whereas German speakers use softer words such as *beautiful, elegant, pretty, slender*, and *peaceful*. In a similar vein, Boroditsky notes that a painter's personification of death is related in some way to the grammatical gender of the word *death* in the painter's mother tongue. She contends that German painters are more likely to paint death as a man, whereas Russian painters are likely to paint it as a woman because the word *death* is feminine in Russian.

Japanese does not have grammatical genders, but the language requires special counter words to

count nouns correctly. There are more than a hundred counters derived from Chinese characters or ideographs which have a particular Japanese pronunciation. To count *cars* in Japanese one must use the counter *dai* used to count mechanical devices. For example, to say *two cars*, speakers must say, *kuruma ni dai,* (literally *car two machines*). Just as Japanese speakers must pay careful attention to counters when speaking, English speakers must also be mindful of the distinction between singular and plural nouns such as *boy* and *boy*s or *man* and *men*. In contrast to Japanese counters, English counters such as a *flock* of sheep, a *gaggle* of geese, a *school* of fish are not absolutely necessary as speakers can use a more simple word such as *group* or *bunch.* In the case of Japanese, counters cannot be avoided as they are an inherent aspect of the language, and when counting things one must pay attention to the nature of the object so as to select the correct counter.

Tenses

Research conducted by Boroditsky (2009:3) on how speakers indicate tense suggests that each language requires that speakers pay attention to different aspects of the world in order to speak correctly. Slobin (1996:72-77 cites several examples of languages to show that in acquiring their native language, children must learn particular ways of 'thinking for speaking' which he defines as 'a special form of thought that is mobilized for communication'. For example, in Turkish, speakers must choose between two past-tense inflections: one for **witnessed** or direct experience and one for **non-witnessed** events which you hear about. If, for example, a speaker wants to say, *It rained last night,* he has to include in the verb how he acquired the information. Similarly, Boroditsky (2009:3) explains that in Russian if you want to say something such as, Mr. *Bush read Chomsky's latest book*, you have to alter the verb to show tense and gender. If Mrs. Bush read the book, a different form of the verb is used to indicate the gender of the person who performed the action. In a similar vein, Turkish speakers have to use a verb which indicates how information is acquired. In other words, they must select a verb which indicates whether they read about an event or whether they actually witnessed it.

Address Usage and Metaphors

The way speakers address one another plays an important role in defining human relationships. In many European languages as well as in Japanese, the rules of address usage have a considerable influence on social relations. Joseph writes that (as cited in Clyne et al., 2009, p.1) 'address usage encodes the relationship and attitudes of the interlocutors perhaps to a greater extent than other aspects of language and is thus more open to cultural variation'. Slobin (as cited in Bloom & Keil, 2001, p.355) notes that if want you to speak a language that requires that you mark your social relationship with your interlocutor, you must select a specific form of address. In languages such as Spanish, French, Portuguese, Italian, German, and Japanese, speakers must select an 'address

pronoun' that marks their appropriate relationship to the interlocutor.' For example, when speaking French one must select an appropriate address pronoun - either *tu* or *vous*; when speaking German one must decide whether to use either *du* or *Sie;* Spanish speakers have to choose either *tú* or *usted*; and when speaking Japanese one should add the honorific suffix *san* which means *Mr*., or *sensei* which means *teacher* when addressing people in formal situations. Japanese people also use several informal words which mean *you* such as *kimi*, *omae*, and *anta*. These 'address pronouns' are usually used among males.

As for English, it has only one pronoun of address, *you*. Speakers of English probably do not have to be as attentive to 'address choices' as other speakers of languages that require the selection of an appropriate form of *you* – either formal or informal. In general, the principal choices for English speakers are the interlocutor's first name or his title followed by his last name.

Although etiquette demands that speakers use appropriate address pronouns in certain situations, usage can vary among people. Clyne, Kretzenbacher, Norby & Warren (2006) suggest in their study that sociopolitical events and developments have affected the ways in which people address one another in France, Germany and Sweden. The tendency to use informal address pronouns has become more prevalent, especially among younger people. In short, the decision whether to address a person formally or informally depends largely on the relationship between the interlocutors and the settings in which they find themselves. Finally, the authors theorize that an increased use of first names and informal address pronouns may be due to the phenomena of worldwide e-mail communication and the use of English as a lingua franca.

Spatial Relations and Spatial metaphors

Research on spatial cognition provides evidence that language affect thought to a certain extent. Bloom and Keil (2001:357) report that the speakers of a Mayan language (Tzeltal) in the community of Tenejapa in southern Mexico use a three-way system based on the inclination of the terrain to describe spatial relations between objects: *downhill* (approximately north), *uphill* (roughly south), and *across* (roughly, east and west). The example cited in their work is as follows: "The boy is in front of me", which would be translated by a Tzeltal speaker as "The boy is **uphill** of me". Bloom and Keil note that an English phrase like "take right a turn" would be untranslatable into the Tzeltal dialect, and that such a language cannot express spatial notions independent of absolute location. In other words, the dialect Tzeltal requires that speakers think in terms of absolute concepts such as north and south. Similarly Boroditsky (2009) reports that people in a local aboriginal community in Northern Australia have a unique way of describing spatial relations. The Aboriginals who speak a language known as Kuuk Thaayorre do not use words like *right*, *left*, *forward*, and *back* to talk describe spatial relations, rather they use terms like *north*, s*outh, east, and west* to define space. Boroditsky cites the following example: "There's an ant on your southeast

leg." To reply to a question such as "Where are you going?" speakers might say something like "Southwest, in the middle distance". Boroditsky argues that speakers of languages such as Tuuk Thaayorre are better at staying oriented at all times, and that people who rely on absolute reference frames are better than English speakers at keeping track of where they are. She reasons that it is their language that enables them to do this

Time, Color, Mathematical Reasoning and Memory

According to Boroditsky (2009:4), people's notions of time and color differ across languages. In her study, she cites several examples of spatial metaphors which suggest that humans conceptualize time differently. English speakers generally talk about time in terms of horizontal spatial metaphors (e.g., *the worst is behind us* or *the best is ahead of us*). On the other hand, Chinese speakers use vertical metaphors to talk about time (e.g., *down month* meaning next month and *up month* meaning last month.). Boroditsky also points out that language can affect aspects of time perception. English speakers for the most part talk about time duration in terms of length (e.g., the meeting was *long* or the party was *short*), whereas Spanish and Greek speakers talk about time in terms of amount by using words such as *big* and *little* instead of *short* and *long.*

Boroditsky (2001) writes that 'habits in language encourage habits in thought'. However, she believes that language learners are able learn new 'habits' or ways of thinking. She points out that language learners can learn to talk about time in new ways, namely English speakers can learn to talk about time as native Greek or Mandarin speakers do. In her view, patterns in language can play a causal role in the way people think. In sum, Boroditsky (2009) states that learning a 'language involves not learning a new way of speaking but also a new way of thinking'.

In similar vein, Lakeoff and Johnson suggest that "our ordinary conceptual system, in terms of which we both think and act, is fundamentally metaphorical in nature". They contend that in our conceptual system is largely metaphorical, and that the way we think, the things we experience, and what we do every day is very much a matter of metaphor. Utterances such as *"I demolished his argument"*, "*His claims are indefensible*", and "*Harry is love*" and "*Cancer finally caught up with him*" and *"Harry is in trouble*" demonstrate the pervasiveness of metaphor in language. A very a common metaphorical concept is "*Time is money*" as evidenced by notions like hourly wages, hotel room rates, yearly budgets, interest on loans, and paying your debt to society by "serving time." In cultures where time is not conceived as a valuable commodity, people are likely think and behave differently.

Different languages divide up the color spectrum in different ways. She notes that some languages make more distinctions than others. For example, in Russian there is no single word that covers all the colors called ***blue.*** Russian speakers must use two different words to distinguish

between light and dark blue, but English speakers describe specific shades of blue by means of appropriate adjectives.

To test whether differences in color language lead to differences in color perception, Boroditsky (2009) compared English and Russian speakers' ability to discriminate shades of blue. Findings of tests revealed that Russians are able to distinguish blue more quickly because they use two different words to describe the blue. Interestingly, Japanese people refer to a green traffic signal as a blue one. Unripe apples and bananas are referred to as **blue** ones; however, a **green** car is **green** and not **blue** in the minds of Japanese people.

To determine how human perception of color is influenced by language, Paul Kay and his teams conducted two experiments at the University of California, Berkley (as cited in Ransford, 2008). The findings of the first experiment with babies showed that rather than processing colors on the left side of the brain where adults also handle language, color processing in the case of infants begins on the right of the brain and is brought to the left side as language develops. The second study revealed that the areas of subjects' brains whose function is to retrieve words become active when participants were shown colors such as pinkish-purple or greenish blue. Kay believes that the reason for this is that color perceptions and human language are closely related.

The effect of words on bilinguals' ability to perform mental mathematical calculations was shown in a 1980 study conducted by Ellis and Hennelly (as cited in Bloom & Keil, 2001: 363). These researchers found that children who are bilingual in Welsh and English were much better at performing mental mathematical calculations in English. They attribute this to the fact that in Welsh number words or digits are longer and take longer to articulate than English ones. Ellis and Hennelly deduced that performing calculations may be more difficult in Welsh than in English. Furthermore, Bloom and Keil contend that 'performing computations is closely linked to a language and its own properties' (p.363).

The influence of language on memory has important implications as it concerns our ability to recall details of events in our early childhood. Bloom & Keil (2001:361) point out that childhood amnesia may be due the fact that children younger than three years of age are not able to 'embed their life experiences in narrative structures'. They say that such structures are could not exist outside of language. In other words, very young infants do not have the language capacity to encode memories of their lives. It is said that the details of our childhood crystallize as we begin to acquire the ability to talk about our lives in a narrative way. Therefore, if we try to recall events earlier than the age of three, our memories often fail.

Research conducted by Marian & Kaushanskaya, (2007) also examined the relationship between language and memory by testing accessibility of general knowledge across two languages in bilinguals (Mardarin-English speakers). Experimental findings on bilingual subjects also suggest that memory and language are closely related. Results also revealed that participants were more likely to access information encoded in Mandarin when they were interviewed in Mandarin.

Likewise, subjects were more likely to access information encoded in English when interviewed in English. They also found that 'memories encoded in Mandarin were accessed faster when the languages of encoding and retrieval matched'. In another study by Marian and Fausey (as cited in Marian and Kaushanskaya, 2007) it was found that Spanish-English bilinguals were more proficient at recalling or retrieving information when tested in the same language in which they learned the material.

General Discussion and Concluding Remarks

Pinker (1994:59-61) is skeptical of the notion that people view the world differently simply because they speak different languages. He argues that there is no scientific evidence that the language shapes people's ways of thinking. He refutes Whorf's argument that Eskimos think differently by virtue of having so many different words for *snow,* and refutes Whorf's claim that Apache speakers think differently simply because they speak differently. In short, Pinker contends that the brain has a hard-wired built-in language device with an understanding of universal grammar, comparing our language instinct to the spider's ability to build webs. He states that 'people do not think in Chinese or Apache; they think in a language of thought'. Knowing a language involves knowing how to translate mentalese into strings of words. (Pinker,1994:81-82)

On the other hand, Boroditsky (2009) and Bloom and Keil (2001) provide compelling evidence which supports the argument that language has significant effects on human thought patterns. First, the way in which Tzeltal speakers and Thaayorre people talk about space can be attributed to their language. Secondly, research shows that there are marked differences in the way speakers must indicate tense. Thirdly, grammatical gender rules of languages require that speakers change pronouns, adjectives, verb endings and possessives in accordance to the gender of nouns. Fourthly, aspects of time perception might be influenced by language. Fifthly, findings from experiments indicate that differences in color language may result in differences in color perception. Sixthly, language plays a role in helping us to remember details about events in our lives and in recalling information. Lastly, research reveals that terms of address, namely the formal or informal pronouns *you* can influence the relationship between speakers and their attitudes towards one another.

Final Remarks

Language is a naturally acquired system of communication consisting of spoken symbols, for which in most cases corresponding written forms have been devised. It is used for encoding and decoding information, expressing thoughts and storing ideas, and also plays an important role in our mental development and in nurturing our imagination. As we learn new words and structures, our ability to crystallize our thoughts improves. We must also learn syntax -- that is, how to

organize words into coherent sentences. The relationship between thought, words and syntax is symbiotic and dynamic. As we learn the meaning of words and acquire the ability to make meaningful sentences, new thoughts are spawned and an intricate web of relationships is formed. In turn, the code or the language that we use to share thoughts also undergoes changes in usage according to the needs and interests of its speakers.

Slobin (as cited in Tomasello, 1995, p.150) asserts that 'different languages have evolved different ways of using linguistic devices for the purpose of communicative functions specific to culture'. Also, research reveals compelling evidence that the unspoken rules of particular languages do in fact affect the ways in which people think and how they view the world. In short, language and thought not are independent, but have a reciprocal relationship. Language enables us to think and articulate our thoughts and thoughts help us to develop our language and, our thoughts are also influenced by the environment in which we live.

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Biomedical Study for Psychomotor Re-Education in Prosthesis of Superior Limbs

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Abstract— This paper discusses a proposal regarding potential psychomotor relearning activities to be used with upper extremity prosthesis, based on learning motor development in early childhood. The study is not limited to the use of the proposed activities in relation to the mode signals used to generate motion response are censed, or to the type of generation of the movement itself. The document also defines the type of motor skills to be worked and desired outcomes. The importance of the work lies in the generation of a psychomotor relearning methodology, based on activities to generate improvement in prosthetic motor, so that it reaches a similar level of performance of the replaced body components.

Key Words *— Psychomotor, Psychomotor reeducation, Psychomotor relearning, Gross Motor Skills, Fine Motor Skills, Amputation, Biomedics, Biological Signals, Prosthesis, Bionic Device.*

I. INTRODUCTION

When we speak of psychomotor we are referring to the ability that human beings have to create a correlation between mind and body, establishing a complete harmony with the surrounding environment [47]. Due to this two-way relationship, you can interpolate the existence of a direct connection between the brain and body movements, which allows the training of the mind in order to control and improve the body's use. If we refer to this training, psychomotor development should occur from the earliest years of a child's life, leading to sensory experiences that contribute to the construction of meaningful learning [19].

Motor development is normally applied to children for mental and cognitive development. However, the diverse factors that can be generated by amputations of limbs of the body could generate a state with similar characteristics of relearn. At that point, we would be dealing directly with a learning process focused on the use of prostheses, which will allow encouraging and empowering each motor action of the subject.

To a bodily extension or a mechanical adjustment to the human body are known as prosthesis or bionic device. It is important to consider that these technologies can also be incorporated into a process of training the mind to use them [6]. Typically, a prosthesis replaces one or more parts of the body, both in its structure and its functional aspect. By creating this replacement, a new physiological and psychological entity is incorporated to the brain, which needs a new training process for its use.

In the following chapters, the types of technologies to be considered for the development of activities of reeducation of psychomotor skills and abilities lost due to an amputation are defined. These activities will also aim to provide the individual with a process of reeducation of its motor skills, with foundations in the psychomotor learning of the children of early age.

II. BACKGROUND AND RELATED WORKS

Psychomotricity is an educational and / or therapeutic discipline which through a set of techniques stimulates the physical activity and the symbolic expression. It considers the human being as a psychosomatic unit, whose objective is the development of motor, expressive and creative possibilities from the body; and which focus its interest in the motion and the act, as stated by Gabriela Nunez and Fernandez Vidal (1994).

Human beings cannot exercise body control from the beginning of their existence; therefore, they need to go through a period of maturation which is a genetic and physiological process of the brain where an organ or set of organs freely exercise their function with maximum efficiency [31]. Consequently to maturity it occurs a developing, which allow us to measure the maturational changes that occur in each Children's cycle. This development is continuous, progressive, irreversible and fixed, that goes from conception to death.

Motor development is governed by two basic laws: the Cephalocaudal law in which the motor development occurs from the head to the feet; and the Proximodistal law where the progressive motor control occurs from nearby areas to the body axis, to the most remote areas of itself [48].

According to Henry Wallon, motor covers the skills possessed by an individual to move, shift, explore, get to know its environment, and experiment through all its senses. There are two types of motor skills: gross and fine. The gross coordination starts to work before the fine coordination. Gross motor includes all actions taken with the large body parts or with the whole body; it involves large movements as well as the coordination of limbs, including muscle movements of: legs, arms, head, abdomen and back. Fine motor refers to actions that

require greater accuracy and a high level of eye-hand coordination, such as grasping objects, paper tearing, cutting, and writing among others.

Thus, the Psychomotor can be focused on three areas: education, psychomotor therapy and rehabilitation; leading to a correlation between the physical and mental development of children [31].

- Psychomotor education is aimed at children of preschool and school age, in order to prevent learning problems and promote the development of intelligence through the motor action.
- Psychomotor therapy is applied to people with psychomotor disorders associated with personality, looking for the person to understand his own body, and to establish relationships with himself, with others and with the environment.
- Psychomotor re-education focuses on learners who have difficulty in acquiring motor skills, either by biological factors such as amputations, syndromes or physiological aspects; or by environmental factors such as lack of stimulation, culture, socioeconomic status, among others, in order to restore voluntary motor control.

According to Julian de Ajuriaguerra (1985), when the child's mobility is limited, we are talking about the existence of a motor disability. It can be taken for prenatal, perinatal or postnatal factors; giving origin to a deficiency in motor development of an organ or limb. At other occasions, the origin of motor disability is due to the amputation of a body part. An amputation is the total or partial separation of a limb from the body of an individual as a result of a traumatic injury, burn or degenerative disease [16].

You must distinguish two types of amputations: congenital and acquired. Congenital amputations indicate the deficiency of the limb during embryonic development, while acquired amputations are those that occur due to trauma or medical conditions [49].

When an individual has undergone an amputation surgery, it is mostly recommended the adaptation of prosthesis. A prosthesis is a mechanism which is incorporated into the human body and designed to replace a missing part of it, or in in some cases, in order to improve the operation of such human part [2].

There are different kinds of prostheses, however, a classification directed to their movement or functionality can generate mainly two types: the cosmetic prosthesis and mechanical prosthesis. Cosmetic prosthesis are those that do not offer a practical functionality to the individual, but that replace physically the missing part [4], [6], [10]. They are very important to generate the visual relationship of the replaced part and its physiological and psychological interconnection with the brain. Once the brain accepts the prosthesis is part of the structure of the human body, you can proceed to work with it in a motor aspect. Mechanical prostheses on the other hand, were designed to generate movements that simulate and execute the various functions of the replaced part of the human body; however, this new system requires a training process to be used [4].

To generate a training process in the operation of the prosthesis have been approached from the viewpoint of engineering, because of the need to learn the use of the different prototypes of prosthesis designed [1], [3], [7], [8], [14]. Each designed prosthesis presents: specific features to be learned, sensing of biological signals and specific motion modes particular to each patient and prosthesis model. If we focus on the sensing, there is great diversity of methods, which allows us to receive information directly related to body movement generated by the brain and directed towards a particular physiological sector; an

important aspect which allows the prosthesis suits the human body and work with the signals generated by it.

It should be emphasized in general the two main methodologies used in the acquisition of biological signals and used in motion control systems for future analysis of their inflection in the process of psychomotor reeducation. The first and most commonly used is the signal from muscles or electromyogram (EMG) [5], [40]. Research has shown that the signal generated by the muscles can be processed so as to identify different signal behavior related to various movements to be generated by the physiological part involved [9], [14], [24], [25] [26]. The second biological signal used is the one that comes directly from the brain or electroencephalogram (EEG), which generates the Neuroprosthetics. Working with the EEG has led to this signal processing, seeking to identify areas of the brain that are activated by psychomotor aspects occurring in the body; or where appropriate, to identify the connection of the brain with the nervous system at some point for receiving bioelectrical signals [27].

The processed signal can feed the prosthesis to generate movement in resemblance to normal physiological behavior of the body. With this understanding, a prosthesis is generally composed of the following elements [2]:

- Suspension elements
- Control elements
- Plug cones
- Joints
- Terminal devices

Due to this generalization of components and with a foundation on generic functional aspects, the activities for the psychomotor relearning will be given according to what type of motor requires the prosthesis to develop in relation to the individual's brain, and within its mentioned structural features.

III. DESCRIPTION OF THE PROBLEM

As mentioned in previous chapters, several factors affect how prosthesis could be unified with an individual. One of these unifying factors is the physical connection that allows the prosthesis to incorporate itself to the human body. This socket refers to the stump, the same which is defined as the residual part of the limb. This connection has its functionality in the optimal securing of the prosthesis to the stump to provide a correct transposition of it; and furthermore, for this one to provide freedom and security when making movements of different natures, at different speeds and with different torques [26].

The greater amount of movement needed, the most strength and restraint shall the joint provide; always considering avoiding harm to the human body. Similarly, to provide optimum performance, the structure of the prosthesis must be designed and built with components lightweight and comfortable, with a combination of features with anatomical similarities to the human ones [42]. The prosthesis incorporated weight can be one of the worst aspects of its construction; due to it can cause fatigue and discomfort to the individual [7]. This limitation in the movement will directly affect the type of activities to be held for motor relearning; but, it will not limit the process efficiency due to the diversity of activities that exist, each with different considerations.

If we focus on the type of signal to sense as a unifying factor, both EMG and EEG get their information in different ways. But both signals sensing as the use of prosthesis is not

limited to age, because it can be incorporated to individuals from one year old to adults. The only fact to consider is that adults require more training to use and more practical for its domain [14], [44].

The generation of biological signals and its understanding by the individual on how to produce them in order to provide the prosthesis with relevant data, produces a dividing line which allows us to visualize where the motor relearning begin and to which point the training in generation of biological signals is fulfilled. It should be emphasized that both processes are different; whereas the training focuses on working with the individual to generate skills in the generation of signals against different needs, relearning works on its improvement according to motor parameters already fixed.

A final unifying factor is the type of amputation you have to work with. The present work will be limited, as well as the generation of activities, for prosthesis which replace components of a complete arm. It should be noted that there are various types of upper extremity amputations [2]:

- Interscapular-thoracic amputation
- Amputation at the humeral neck
- Amputation of humerus
- Amputation of forearm
- Amputation of the wrist
- Amputation of hands and fingers

However, the work of relearning should include all components of the upper extremity, whether or not these include prosthesis, because of the need to reinstate the functionality of the body component lost to the brain, the body and its surrounding parts. That's where Neuroplasticity enters, allowing the brain to have the ability to reorganize its structure and functions.

There are several research works for the development of prostheses of the various elements of the upper limb. Most works include prosthetic arms [8], [13], [17], [39], followed by studies of prosthetic hands [9], [11], [12] and finally a minor amount of research has been focused on elbow prosthesis [15], [41]. In each of these types of prostheses, you can identify that the size of the prosthesis and its replacement extension of an upper limb is related to some extent to the strength and degree of control that it possess. Therefore, the control performed thereon is usually proportional, which eases the power consumption according to the actions to be taken; and in turn it controls the impulse of reaction of the prosthesis [43].

This analysis leads to a generalization of learning in the use of prosthetics with an even greater focus on psychomotor reeducation of the individual as a whole. The next step is the differentiation of activities to approach them in psychomotor parameters to be considered in the relearning of both fine and gross motor skills.

IV. APLLIED METHODOLOGY

The way in which the human knowledge is internalized is through its interaction with the environment by using the senses. From an early age the game becomes a major tool where the individual learns by doing. Taking this into account, activities are proposed to establish a motor prosthetic reeducation in three key areas within the psychomotor:

A. General Coordination

It allows the person to perform the most common movements, trying to maintain a capacity of harmony and ease of body and limbs. The proposed activities in order to foster a motor relearning in the overall coordination of the upper limb with the rest of the body, can be seen in Table I and Table II.

TABLE I. DESCRIPTIVE TABLE OF THE ACTIVITY

Ballon Walking	
Time:	15 minutes
Resources:	Baloon, chalk or tape
Description:	It is marked on the ground a beginning and an end of travel. The person must catch the ball and move around the room delimited using his hand to throw the balloon into the air, giving the maximum of touches without crashing to the ground. The person must count each of the given touches. Repeat several times the activity so that it allows fine motor upper limb prosthetic reinforcement.

[a.] Activity Ballon Walking

TABLE II. DESCRIPTIVE TABLE OF THE ACTIVITY

Counting Balls	
Time:	15 minutes
Resources:	Balls, box and toboggan
Description:	The box will be placed with balls in it. Then the person must take with both hands one of the balls from the box and go counting them in the order in which the withdrawing go. Then the balls must be put in a toboggan that will be located at the height of the shoulders of the individual. Repeat several times the activity so that it allows the consolidation of the gross and fine motor skills of its prosthetic upper limb.

[b.] Activity Counting Balls

B. Tonicity and Self-control

Tonicity is the degree of muscle tension required to perform one or more activities; while self-control is the ability to use and manage the tonic energy to perform any movement. The activities proposed in order to ensure a rehabilitative strengthening of tonicity and self-control of the upper extremity in people with upper limb prostheses, can be seen in Table III. and Table IV.

TABLE III. DESCRIPTIVE TABLE OF THE ACTIVITY

The Rode of the Rope	
Time:	From 15 to 20 minutes
Resources:	Rope and Ball
Description:	The rope is placed on the ground, creating a straight line. The person must sit at one end of the rope and catch the ball. Consequently he launches the ball gently, trying to roll it up to the other end of the rope without departing from the limit of it. Repeat several times the activity to achieve tonicity of the prosthesis. You can vary the weight of the ball.

[c.] Activity The Road of the Rope

TABLE IV. DESCRIPTIVE TABLE OF THE ACTIVITY

Fishing the Big Fish	
Time:	From 15 to 20 minutes
Resources:	Rope, Bottle, Stick and Water
Description:	It is placed some water in the plastic bottle, which is attached to one end of the rope. At the other end of the rope it would be tied a stick. The person should stand up and lift the weight of the bottle through the rope from the stick. Repeat several times as a training activity to achieve control of the tonicity of the prosthesis.

[d.] Activity Fishing the Big Fish

C. Laterality

It is the preference of humans for one side of their body. After an amputation people need to go through a process of psychomotor reeducation, for which the following activities are described in order to establish whether the individual has the ability to identify or not the left and right areas of their body. These activities can be seen in Table V and Table VI.

TABLE V. DESCRIPTIVE TABLE OF THE ACTIVITY

The Mirror	
Time:	15 minutes
Resources:	One person
Description:	For this activity it is necessary the collaboration of another individual, who will perform as a mirror. " The Mirror " made several moves and the person with upper extremity prosthesis should follow the movements of the mirror. If "the mirror" reaches up his right arm, the other person should lift up the left arm; or if "the mirror" moves the fingers of his left hand, the other person should move the fingers of his right hand. Repeat several times the activity as an identification way of the laterality of the person with prosthesis.

[e.] Activity The Mirror

TABLE VI. DESCRIPTIVE TABLE OF THE ACTIVITY

Unilateral Exercises	
Time:	From 15 to 20 minutes
Resources:	One person
Description:	The individual who will assist in this activity should give simple orders to the other person. Orders must make the person work with its upper extremity prosthesis. Instructions could be like to tell the person to touch his left foot with his right hand, or to touch the right eye with his left hand. Repeat the activity several times as a recognition of the laterality of the person with prosthesis.

[f.] Activity Unilateral Exercises

The previously proposed activities seek to generate improvement in prosthetic motor, so that it reaches a similar level of performance to body components replaced.

V. CONCLUSIONS

Through psychomotor reeducation applied to people with upper limb prosthesis, it has been looked to rebuild lost skills and abilities based on amputation, so that the individual can make use of the praxes to solve problems of daily life.

With the constant use of the proposed activities, the partial or total recovery of motor skills of the individual wants to be acknowledged, leading to the development of the overall coordination of the body and its movements, for restoring a proper tonic control and laterality.

The use of the prosthesis in a person affects his body image, with a greater impact when an amputation occurs in childhood. Therefore it is required to work the psychomotor reeducation process together with the relatives of the person, creating bonds of affection, support and solidarity; to help raise the self-esteem of the individual.

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Causes of incivility in nursing education:

Iranian teachers and students experiences

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Abstract

Introduction: Incivility of students is of the major concerns for universities and future career of students. This study was conducted to discover the causes of incivility in education of nursing students.

Method: In this qualitative study, content analysis was applied in order to explore experiences and understanding of nursing students and nursing teachers. twelve nursing teachers and six nursing students were selected purposefully and interviewed individually, 2014. The interviews were tape recorded and later transcribed verbatim. The transcriptions were analyzed using conventional content analysis method.

Results: three main categories were emerged from data. They were main causes for nursing students' incivility including: student related factors, teacher related factors, and organizational factors. Subcategories of student related factors include, non- educational engagement, attracting attentions, lack of motivation, students' personality, and lack of experience. In teacher related factors sub categories include, lack of teachers skills, teachers' personality, lack of teachers experience, and incivility of teacher. Organization related subcategories include lack of assessment system for teacher, and lack of understanding organizational rules and regulations.

Conclusion: There are several factors such as student related factors, teacher related factors, and organizational factors involved in students' incivility. Managers and teachers should recognize incivility related factors and try to prevent and treat them.

Key words: incivility causes, nursing students, content analysis, nursing teacher, Iran.

COGNITIVE COMPETENCIES IN TEST CONSTRUCTION: DETERMINANTS OF MATHEMATICS ACHIEVEMENT AMONG SELECTED JUNIOR HIGH SCHOOL STUDENTS IN AGUSAN DEL SUR, PHILIPPINES

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Abstract

This study looked into the competence of Mathematics teachers in Agusan del Sur, Philippines in using cognitive objectives in test construction. It utilized the descriptive, comparative, relational and causal research designs. Purposive sampling was employed in the selection of respondents and the researcher-made questionnaires were used in gathering the data. Data were analyzed and interpreted using mean, Kendal-Tau Correlation Coefficient for Non Normal, and Linear Regression Analysis. The study revealed that teachers were very good in identifying knowledge level questions but they were very poor in evaluation level questions. Similarly, students' competence in the constructed Geometry test among high performers was good in the lower levels of cognitive domain such as knowledge, comprehension and application but poor in the higher levels such as analysis, synthesis and evaluation. Among low performers, they were good in knowledge and application questions, however, they were poor in comprehension, analysis and evaluation and very poor in synthesis. Overall, the competence of students in the constructed Geometry test was good in knowledge and very poor in synthesis, while in terms of their average grade in Geometry, it was good. Furthermore, teachers' cognitive competence in test construction affected students' achievement in Geometry. With regards to the significant relationship of the levels of cognitive domain, knowledge was significantly related to comprehension and application; comprehension was significantly related to evaluation and knowledge; and application was significantly related to analysis, synthesis and knowledge. Meanwhile, teachers' competencies in knowledge and comprehension levels greatly influenced students' performance in Geometry. It was concluded in this study that teachers' cognitive competencies in test construction affected students' performance in Geometry. It was recommended that Mathematics teachers should be given an in-service training in using cognitive objectives in test construction focusing on the higher levels of thinking skills.

Keywords: Cognitive Objectives, Test Construction, Geometry, Achievement

Introduction

In the educational world, tests have become a way of life. In every learning experience, there comes a time to pause to put focal processes to best use, and to demonstrate accumulated skills or knowledge. From pop quizzes to final exams to standardized entrance exams, tests are crucial milestones in the journey to success or an indicator of features that a student needs to work on in the future (Mueller, 2006).

In Agusan del Sur, the results of the National Achievement Tests conducted in school year 2006-2007, 2008-2009 and 2009-2010 for second year high school students showed that of the five subjects tested such as English, Mathematics, Science, Filipino and Araling Panlipunan, students' performance in Mathematics in school year 2006-2007 and 2008-2009 ranked fifth. In 2009-2010, it ranked fourth (DepED Agusan del Sur). The tests and their results showed the low performance of students in Mathematics which in turn predicted the need of interventions in the teaching of this subject.

This problem on the low performance of students particularly in Mathematics was also evident in the international scene based on the report of the US Department of Education's Trends in International Mathematics and Science Study . From 1995 to 2007, the report showed that South Africa, Philippines, Chile, Indonesia and Iran got the lowest score (Carballo, 2009).

According to Howard (2009) in his study on the impact of teaching styles and other related variables on students' achievement in Mathematics and the implication for curriculum management, she found out that there was significant difference in teacher's use of the art of questioning (Bloom's cognitive domain) to students' achievement in Mathematics from pre-test to post-test.

However, writing a good test is not easy (Conderman and Koroghlanian, 2008). Based on some studies, teachers made several errors in test construction. The common difficulty of teachers in constructing their own tests is using cognitive objectives to address the different levels of students' thinking skills since teachers tend to test items only in most of the times at the knowledge level. However, by following the guidelines in test construction, teachers can write better test items, hence, evaluate student's learning better.

These echoed the same dilemma experienced by Mathematics teachers, particularly in Agusan del Sur. With these present problems mentioned, the researcher, a Mathematics teacher, felt it a responsibility to be an instrument in addressing the needs of the teachers. Specifically, it was his honor to be an instrument in the improvement of cognitive competencies in test construction among Mathematics teachers in the Division of Agusan del Sur, Philippines. Thus, this study was conducted which looked into the competence of Mathematics teachers in Agusan del Sur, Philippines in using cognitive objectives in test construction. In addition, it also aimed to determine if there is relationship between teachers' competence in test construction and students achievement level in the constructed Geometry test using cognitive objectives. Significant relationship between any two levels of cognitive domain and levels of cognitive domain which influence students' performance in Geometry were also considered in this study.

Research Design

This study made use of the descriptive research design. It presented the survey which described the cognitive competence in test construction of the Mathematics teachers in the public high schools of Agusan del Sur and the achievement of the junior high school students in Geometry. Comparative

research design was also utilized in this study wherein teachers' cognitive competencies in test construction and students' performance in the constructed Geometry test were compared. Additionally, this study used relational design wherein teachers' cognitive competence in test construction was related to students' achievement in Geometry. Moreover, this study utilized causal design. Variables that could affect students' average grade in Geometry were presented in this study.

Methodology

Before the conduct of the data gathering, the researcher asked permission from different authorities of the Department of Education (DepEd) in Agusan del Sur, Philippines. The instruments used in the data gathering were validated by the experts. To ensure reliability of the instruments, a pilot testing was conducted to ten Mathematics teachers and ten students who were excluded in the study. After the pilot testing, the researcher then started the data gathering covering the four (4) clusters in Agusan del Sur employing purposive sampling technique in the selection of respondents. After the test, the researcher interviewed the teacher-respondents to supplement the gathered data. In total, the researcher spent 11 working days in data gathering involving 40 public high schools in Agusan del Sur Division.

Results of the Study

Teachers' competence in using cognitive objectives in test construction is shown in Table 1.

Table 1
Teachers' Cognitive Competencies in Test Construction

Level	Mean	SD	Rank	Description
Knowledge	3.88	0.85	1	Very Good
Comprehension	1.78	0.89	4	Poor
Application	2.55	1.11	2	Good
Analysis	2.18	1.17	3	Good
Synthesis	1.50	0.75	5	Poor
Evaluation	1.45	0.75	6	Very Poor
Overall Rating	2.23	0.92		Poor

As shown in Table 1, among the cognitive competencies of teachers in test construction, only knowledge level was very good with the mean of 3.88 (rank 1) and standard deviation of 0.85 which indicated that their competence in this level was highly homogeneous. This result implies that teachers were very good in identifying knowledge level questions. According to Conderman and Koroghlanian (2002), teachers tend to construct items in their own tests in most of the times at the knowledge level only.

On the other hand, teachers were having difficulty in identifying questions belonging to the levels on comprehension, synthesis and evaluation. Based on the interview, it was found out that 75% of the teachers revealed that they had difficulty in constructing a test and 82% in identifying the levels of questioning. It was further found out that 95% of them admitted that they needed more training on test construction and that they were interested to attend if training in using cognitive objectives in test construction will be conducted. In addition, Table 1 also shows that comprehension was ranked fourth and was rated as poor even if it belonged to the lower level of thinking skills with a

standard deviation of 0.89 which means that their competencies in this level were highly similar. Based on the interview 90% of the teachers misinterpreted this level as knowledge level. Furthermore, the data seen in Table 1 pointed out that the least competence of the teachers was in the evaluation which was "very poor." Generally, teachers' competence in using cognitive objectives in test construction was rated as poor. The findings revealed that Mathematics teachers were focused in developing only limited number of levels of cognitive domain in constructing a test. In this case, there is a need on the part of the teacher to vary the levels of questions in a single test to help students develop critical thinking. In terms of students' competencies in the constructed Mathematics test, the data are presented in Table 2.

Table 2
Students Competencies in the Constructed Mathematics Test

Cognitive Objectives	**High Performers**			**Low Performers**			**Overall Rating**			
	Mean	SD	Rank	Mean	SD	Rank	Mean	SD	Rank	**Description**
Knowledge	3.27	0.95	1	2.54	1.01	1	2.91	0.98	1	Good
Comprehennsion	2.78	1.10	3	1.88	0.95	3	2.33	1.03	3	Poor
Application	3.12	1.01	2	2.51	1.04	2	2.82	1.03	2	Good
Analysis	1.98	0.92	4	1.54	0.67	5	1.76	0.80	4	Poor
Synthesis	1.50	0.80	6	1.24	0.61	6	1.37	0.71	6	Very Poor
Evaluation	1.88	0.70	5	1.58	0.62	4	1.73	0.66	5	Poor
Overall Rating	2.42	0.91		1.88	0.81		2.15	0.87		Poor

As reflected in Table 2, students from the high performing group got highest rating in the knowledge level questions (rank 1)while the lowest rating was on the synthesis level (rank 6). This result could be attributed to the fact that schools in the Philippines required teachers to construct 60% easy level questions (knowledge and comprehension), 30% average level questions (application and analysis) and 10% difficult level questions (synthesis and evaluation) in constructing their own tests. With this, students' exposure to higher level questions was very limited which caused them to have difficulty in answering such level of questions.

Moreover, the competence of low performing students in the constructed Mathematics test as shown in Table 2 revealed that their top two competencies in the constructed Mathematics test were knowledge (rank 1) and application (rank 2) which was the same with that of the students from the high performing group.

On the average, students were more competent in the knowledge level (rank 1, SD=0.98) which was rated as good. This result is consistent with the result shown in Table 1 that teachers construct their tests items at the knowledge level in most of the times and very limited in the higher levels since they had difficulty in using cognitive competencies in constructing their own tests and that the development of their students' thinking skills is limited only at the lower levels. In addition, evaluation was ranked fifth (SD=0.66) which was rated as poor and synthesis was ranked sixth (SD=0.71) which was rated as very poor. These results proved the idea of Anderson (2001) that synthesis (synthesizing in the revised taxonomies) is the highest and most difficult level of thinking skills. It is also reflected in Table 2 that the second in rank was application (SD=1.03) and comprehension was third in rank (SD=1.03). This result is related to the fact that teachers misinterpreted comprehension as knowledge. In fact, it was noted by the researcher during the interview that teachers were making comprehension level questions but some of these questions were misinterpreted by 90% of them as knowledge level. Generally, students' competencies in the

constructed Mathematics test were poor. This implies that students' exposure to the higher levels of thinking was very limited which resulted to have difficulty in answering higher level questions because they were not used to do them in the classroom.

Moreover, Table 3 shows the comparison of teachers' competencies in test construction and students' competencies in the constructed Mathematics test.

Table 3
Comparative Analysis of Teachers' Competence in Using Cognitive Objectives in Test Construction and Students' Achievement in the Constructed Mathematics Test

Teachers' Competence in Test Construction				
Level	Mean	SD	Rank	Description
Knowledge	3.88	0.85	1	Very Good
Comprehension	1.78	0.89	4	Poor
Application	2.55	1.11	2	Good
Analysis	2.18	1.17	3	Good
Synthesis	1.50	0.75	5	Poor
Evaluation	1.45	0.75	6	Very Poor
Overall Rating	2.23	0.92		Poor
Students' Achievement in the Constructed Mathematics Test				
Knowledge	2.91	0.98	1	Good
Comprehension	2.33	1.03	3	Poor
Application	2.82	1.03	2	Good
Analysis	1.76	0.80	4	Poor
Synthesis	1.37	0.71	6	Very Poor
Evaluation	1.73	0.66	5	Poor
Overall Rating	2.15	0.87		Poor
Students' Average Grade in geometry				
Grade in Geometry	3.15	0.86		Good

As shown in Table 3, the top two competencies of teachers and students were knowledge and application. For teachers, knowledge was rated as very good (mean=3.88) while for the students, it was rated as good (mean = 2.91). In terms of application, the ratings of teachers and students were both good (mean = 2.55 for teachers, 2.82 for students). In addition, Table 3 shows a consistent result that the competencies of teachers and students were only focused in knowledge and application levels which both belonged to the lower levels of cognitive domain.

Table 3 also presents that the lowest two levels of teachers' and students' competencies were synthesis and evaluation. For teachers, synthesis was rated as poor (mean=1.50), for the students, this was rated as very poor (1.37). In terms of evaluation, teachers' competence was rated as very poor (mean = 1.45) while for the students, this was rated as poor (1.73). Generally, the overall ratings of students and teachers were poor. These results illustrated that the teachers had problems in classifying the level of questions and that they only developed the lower level thinking skills of the students. The consistent ratings of teachers and students in Table 3 show that there exist a relationship between teachers' competence in using cognitive objectives in test construction and students' achievement in the constructed Mathematics test. These results indicate that teachers' cognitive competence in test construction particularly in the lower levels had an effect to students' achievement. Furthermore, if average grade of the students in Geometry will be included, Table 3

shows that it was rated as good. For the test of significant relationship among the levels of cognitive domain of teachers, Table 4 presents the data.

Table 4
Test of Significant Relationship Among the Levels of Cognitive Domain of Teachers

Level	**Statistics**	**Level of Cognitive Domain**					
		Know	Com	Ap	An	Syn	Eval
Know	*R*	1.00	.355	.246	.135	.118	-.073
	P-value	.	*.012	.071	.331	.410	.613
Com	R	.355	1.000	.093	-.043	.098	0.297
	P-value	*.012	.	.496	.760	.500	*.041
Ap	R	.246	.093	1.000	.352	.307	.175
	P-value	*.071	.496	.	**.009	*.029	.213
An	R	.135	-.043	.352	1.000	.239	.028
	P-value	.331	.760	**.009	.	.094	.846
Syn	R	.118	.098	.307	.239	1.000	.197
	P-value	.410	.500	*.029	.094	.	.185
Eval	R	-.073	0.297	.175	.028	.197	1.000
	P-value	.613	*.041	.213	.846	.185	.

Legend: * Significant ** Highly Significant

Table 4 shows that teachers' competencies in knowledge and comprehension levels had significant relationship as indicated by the P–value of 0.012 which was less than 0.05. The gathered data led to the rejection of null hypothesis at 0.05 level of significance. The relationship was low positive as indicated by the Pearson r–correlation coefficient of 0.355 (positive, close to 0.50). These results showed that knowledge increased with comprehension. In other words, when the teachers' competence in knowledge level will increase, their competence in comprehension level will also increase. According to Bloom's Taxonomy, knowledge is the lowest level of thinking skills which is followed by comprehension. In this sense, if the lower level of thinking skills is mastered, the next level will also follow. Furthermore, Table 4 reveals that knowledge and application had significant relationship as indicated by the P-value of 0.071 which was closer to 0.05 level of significance. The gathered data guaranteed the rejection of the null hypothesis at 0.05 level of significance. The relationship was low positive as indicated by the Pearson-r correlation coefficient of 0.246 (positive, close to 0.50). The result indicated that teachers' competence in knowledge increased with application and vice versa or when their competence in remembering of the learned facts will increase, applying these facts will also increase. Teachers' competence in comprehension and evaluation levels also had significant relationship with each other as indicated by the P- value of 0.041 which was less than 0.05 level of significance. The gathered data guaranteed the rejection of the null hypothesis at 0.05 level of significance. The relationship was low positive as indicated by the Pearson–r correlation coefficient of 0.297. The results showed that when comprehension increased, evaluation also increased or vice versa which would conform to the idea of Bloom that before a person could evaluate, he should first comprehend the materials.

The results in Table 4 further showed that teachers' competence in application and analysis levels had high significant relationship as indicated by the P–value of 0.009 which was less than 0.05 level of significance. The relationship was low positive as indicated by the Pearson–r correlation coefficient of 0.352 (positive, close to 0.50). This result pointed out that application increased with analysis. To put it into context, it simply means that when the skill in using the facts or ideas into a new and concrete situation will increase, the skill in breaking down these facts into its constituent parts and explaining the relationships of these parts will also increase.

Moreover, Table 4 presents the relationship between teachers' competencies in application and synthesis levels of thinking. As indicated by the P–value of 0.029, less than 0.05, gathered data guaranteed the rejection of the null hypothesis at 0.05 level of significance. The relationship was low positive as indicated by Pearson–r correlation coefficient of 0.307 (positive, close to 0.50). This means that application increased with synthesis. In other words, when there would be an increase in the use of information in a new and concrete situation, there would also be an increase in putting together the learned information to form a new whole idea, pattern or structure. Generally, Table 4 reveals that some of the levels of cognitive domains had significant relationship but with a low correlation value. This implies that developing one level of the cognitive domain did not necessarily mean that the other levels of cognitive domain would also be developed.

In terms of the variables that could influence students' achievement in Geometry, Table 5 shows the analysis on which level of cognitive domain of teachers influenced the achievement of students in the said subject.

Table 5
Regression Analysis on the Variable that Influenced Students' Average Grade in Geometry

Variables	Unstandardized Coefficients		Standardized Coefficients	T	P-value
	B	**Std. Error**	**Beta**		
(Constant)	79.093	1.423		55.580	0.000
Knowledge (K)	0.973	0.455	0.170	2.139	0.034
Comprehension (C)	0.817	0.456	0.154	1.794	0.074
Application (Ap)	-0.046	0.445	-0.008	-0.104	0.917
Analysis (An)	0.310	0.517	0.043	0.600	0.549
Synthesis (S)	0.203	0.574	0.025	0.354	0.724
Evaluation (E)	0.440	0.569	0.050	0.773	0.440
R = 0.331	R^2 = 0. 109		F = 4.771		
P-value = 0.000	df = 239				

As presented in Table 5, the regression analysis at 0.05 significance level shows that teachers' competence in test construction in the knowledge level had the greatest influence on students' average grade in Geometry because majority of the examinations of the teachers in the classroom test were focused on knowledge level questions which can also be traced in Table 3. Comprehension can also be considered as another factor that could contribute to the achievement of students in Geometry with its indicated P-value of 0.074 which was still close to 0.05 level of significance.

This could also be attributed to the fact that teachers were required to construct 60% easy level questions which were mostly knowledge, 30% average level questions and 10% difficult level

questions in constructing a test. These are the reasons why students were less exposed to higher levels of thinking skills or cognitive domains. Based on the data presented in Table 5, the regression equation in predicting the average grade of students in Geometry was made which was defined by the equation:

$$Y = 79.093 + 0.973K + 0.817C - 0.046Ap + 0.310An + 0.203S + 0.440E$$

As indicated in the computed R^2, 10.9% of the variation of students' grade (Y) was accounted to the variation in their competence in the different levels of cognitive domain. This would mean that 89.1% of the variation of the grade in geometry was influenced by factors other than their competence in the cognitive domain.

The p-value which was close to 0.05 of the computed t indicated that knowledge and comprehension levels significantly predicted students' grade in Geometry. As given by the standardized coefficients, knowledge and comprehension contributed 17.0% and 15.4% respectively to the grade in geometry. However, the variables such as application, analysis, synthesis and evaluation had meager effect on the grade considering the P-value that ranged from 44.0% to 91.7%. Consequently, these variables contributed only 0.8%, 4.3%, 2.5% and 5% respectively.

Furthermore, the P-value of the ANOVA which was less than 1% indicated that the relationship between grade (Y) and teachers' cognitive competence was linear and highly significant. To simplify the findings found in Table 5, a model illustrating the variables that influenced students' grade in Geometry is presented in Figure 1.

Figure 1
Predictors of Students' Grade in Geometry

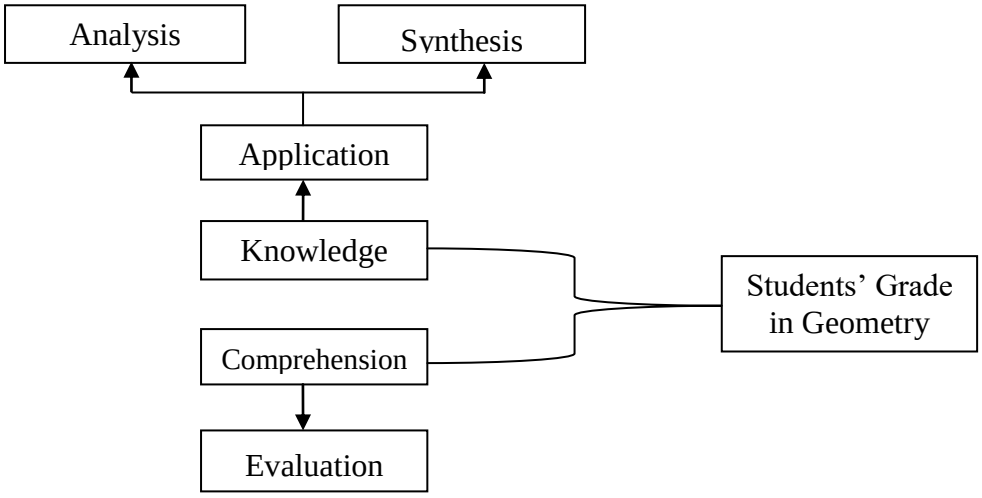

Figure 1 illustrates that students' grade in Geometry was greatly influenced by teachers' competence in knowledge and comprehension levels. However, based on Table 4 regarding the significant relationship among the levels of cognitive domain of teachers, knowledge and application had significant relationship and application was significantly related to analysis and synthesis. Meanwhile, comprehension was also related to evaluation. The relationship that existed among the levels of cognitive domain emphasized that other levels of cognitive domain such as application, analysis, synthesis and evaluation could also be taken into consideration to have contribution to students' grade.

Furthermore, teachers' competence in knowledge and comprehension levels was considered as variables that had influence on students' grade in Geometry. This was based on Table 3 which revealed that students' exposure was more on the lower levels of cognitive domain which included knowledge and comprehension. Based on the requirement of the Department of Education, teacher-made tests should be composed of 60% easy level questions (knowledge and comprehension), 30% average level questions (application and analysis) and 10% difficult level questions (synthesis and evaluation).

Conclusion

Based on the findings of this study, it was concluded that teachers' cognitive competencies in test construction affected students' achievement in Geometry and of the six levels of cognitive competencies of teachers in constructing a test, knowledge and comprehension had more influence to students' grade in Geometry since the exposure of students were more on these levels.

Recommendations

On the basis of the findings and conclusion generated in the study, the following recommendations were offered for consideration:

1. Mathematics teachers should be given an in-service training in using cognitive objectives in test construction with more focus on the higher levels of thinking such as analysis, synthesis and evaluation.
2. Teachers should vary their questions in a single test to develop all levels of students' thinking skills.
3. School administrators should encourage Mathematics teachers to use six levels of cognitive domain in constructing a test in all fields of Mathematics for secondary education.
4. School administrators who wanted to design a training program on test construction can base their design in the findings of this study.
5. This study may be replicated by other researchers other than Mathematics teachers so that investigation of the cognitive competence of teachers in test construction will be as well considered.

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Common Errors Encountered in English Grammar Usage among the Fourth Year High School Students in MSU-ILS as it Relates to their Academic Performance in English

Sittie Jannah A. Macaurog, LT

ABSTRACT

This study sought to answer the respondents' profile in terms of age, gender, parents' educational attainment, family monthly income, reading materials available at home, and the common errors they have encountered in terms of subject- verb agreement, pronoun, adjectives and adverbs, preposition, tenses, and modals. The study also revealed the Grade Point Average of the students and its significant relationship with their performance in the English grammar usage. In line with this, implications are drawn from the findings of the study.

This study involved 99 selected fourth year high school students in MSU- Integrated Laboratory School. In gathering the data, the main instrument used was a self-constructed structured questionnaire stating the respondents' profile, GPA in English, and their performance in English Grammar test using the descriptive correlation method of investigation. The gathered data was collected, tabulated, analysed and interpreted using the statistical tools namely: frequency and percentage distribution, mean and standard deviation, Pearson product moment coefficient of correlation, and t- test of significance.

Findings showed that the common errors encountered by the respondents in grammar test is described qualitatively as in the average level. However, subject- verb agreement has the highest error and adjective and adverbs have the lowest error when correlated with pronouns, preposition, tenses and modals. Moreover the respondents' GPA and their performance in the English Grammar test have a significant relationship. With this, it is recommended that teachers should use variety of teaching strategies to enhance students' grammatical abilities. The students need to do their part also by being responsible enough, while their parents need to guide their children. Lastly, it is recommended that future researchers would be conducting further studies on how to develop students' grammatical competencies.

Rationale

Learners nowadays have different ways of learning the second language and they also have various levels of competencies with grammatical structure of the English language. English language became the new lingua franca it is usually used as a medium of instruction. But in order to teach the Second language also known as the English language, one must know how to apply different techniques and strategies in Teaching English as a Foreign language. After all, there is no single best way to teach the English language but there are many ways to do. And it is the main role of the teacher to become flexible enough in applying various techniques in developing the level of competency of the learners. Moreover, grammar is the essentials of language. That means to say that in order to learn the English language, a learner must know when to use a certain tense, word form, knowing how to explain and apply the rule and the right expression.

Consequently, teaching English grammar is tricky as there are just so many exceptions to rules, irregularities of word forms, and others that even if you do know your grammar rules, you are probably going to need some help when providing explanations (http://esl.about.com).

Accordingly, the study of grammar began with the ancient Greeks, who engaged in philosophical speculation about languages and described language structure. This grammatical tradition was passed on to the Romans, who translated the Greek names for the parts of speech and grammatical endings into Latin; many of these terms (nominative, accusative, dative) are still found in modern grammars. But the Greeks and Romans were unable to determine how languages are related. This problem spurred the development of comparative grammar, which became the dominant approach to linguistic science in the 19th century (Microsoft Encarta, 2009).

According to Hawkins (2000) as cited by Mantilla and Mercado (2006), English is the Germanic language belonging to the Indo-European Family. It has borrowed extensively from the Celtic, Scandinavian, French, Anglo-Saxon, Greek, Latin, and Danish tongues. In its travel around the world, English is not like the Romans languages, descended from Latin. It belongs to another group called Germanic.

Philippine Education system has been using English as a medium of instruction from elementary to tertiary and even to the graduate level. English is a living language and is therefore subject to numerous changes. It is considered as the business language of the whole world and is therefore, an indispensable tool in the pursuit of higher learning. English becomes the controlling language of education, government, business, science and even mass media (Adapun, Ismael, 2011).

However, English is not an easy language to learn. Even English as a Second Language Students (ESL) students who have a background of two or more languages often find English to be rather confusing and difficult to learn. Grammar is about form and one way to teach form is to give students rules; however, grammar is much more than form and its teaching is ill served if students are simply given rules (Larseen Freemanin Celce-Murcia, 1991).

If there is anything that has been learned to date, it is that there is no single “best” way to teach grammar and vocabulary, but there are many good ways to do. In order to be

¬roficient in speaking or writing using the second language, one has to observe the appropriate ability to correct expression in oral or in written that will depend upon the development of certain abilities or skills.

In many countries throughout the world, teaching English is an activity infused with social and political significance. Simply by teaching English as a second or foreign language, we are directly or indirectly implementing a stated or implied language policy as well as actively promoting a form of language change in our students. In some countries, policies regarding the teaching of English may be based in part on a desire to restrict knowledge of the language to an elite, while in others the study of English may be promoted as a basis for achieving political unity or economic development (Lee Mckay, 1992).

English language plays an important role in the society especially nowadays wherein people are engaging to other English language users all over the world. That is why teaching the English language acquisition is an important matter that the language teachers have to consider for better communication in order to produce a quality education. Moreover, nowadays, many countries are being globalized and language teachers are now in demand in countries such as Thailand, Taiwan, Japan, Korea, Cambodia, Australia, Saudi Arabia, United Arab Emirates, Dubai, Europe and many other countries even in the United States of America (www.esp-world.info). Typically, EFL or English as foreign language is learned in order to pass exams (such as TOEFL[1] and ACTFL[2]) as a necessary part of one's education, or for career progression while working for an organization or business with an international focus. According to Freeman Richards (1995) as cited by Dumaluan and Luza (2005), language teaching will be considerably enriched by deeper and closer examinations of how language teachers come to know what they know and do what they do in their work.

Teaching English has become a billion-dollar industry in Japan. The same thing is happening in other East Asian countries. The pressure is getting more intense as young professional people appreciate the value of the Internet in advancing their professional status. With this, there is a very high correlation between the mastery of English and Internet usage (http://getrealphilippines.com).

Students are expected to be aware of events have mastery of the language for them to learn effectively in some of the subject areas that use English as a medium of instruction. According to Bobong (2006), there are many students nowadays whose performance in English is low although some perform well. This is the reason why the researchers chose this topic because the researchers believed that there is a need to evaluate the performances of students in the English subject. As Celce-Murcia (2006) stressed, Grammar is indeed important, and learners seem to focus best on grammar when it relates to their communicative needs.

Since High School is a transitional studies in college, improving their grammar or English proficiency in High School, is a means of improving their performance in college. The researchers choose the topic entitled "Common Errors Encountered in Grammar among the Fourth Year High School Students of MSU ILS: As it Relates to their Academic Performance in English ", because it is a two-way beneficial. It is advantageous on the part of the students and cooperating school, and profitable on the part of the researchers. After all the researchers are

future language teachers and as a future language teachers it is a must to find out the difficulties encountered by the students in ESL and what would be the possible solutions for it. Through conducting this study, we would be able to know the strength and weaknesses of the English language learners and how the language can be taught meaningfully as a tool for communication.

Theoretical Framework

There are numerous theories quoted by various specialist and scholars regarding on the teaching of English and the second language acquisition.

The child psychologist Piaget (1967) as cited by Celce-Murcia (2006) viewed the relationship between the language and thought suggesting that cognitive development in the infant occurs in clearly define stages and precedes language. Thus, before infants can learn language forms such as nouns, they must possess certain cognitive prerequisites such as understanding that objects have a permanent existence. However, rationalist concept of innate mental structures and views language and cognition as separate. This approach is represented by the work of Chomsky (1957) and more recently by Pinker (1994) as cited by Celci-Murcia (2006) who argued that language is an innate, human specific ability which is not dependent on other cognitive processes. Children are genetically equipped to acquire language in infancy, when they are not capable of language thought, and therefore instinctively do so without extensive exposure to a variety of language forms (an argument called "poverty of stimulus").

A theory of second language acquisition (SLA) according to Yorio (1976) includes an understanding in general of what language is, and for classroom context what teaching is. And knowledge of children's learning of their first language provides essential insights to an understanding of SLA. Second language teaching is a part and adheres to general principle of human learning and intelligence. Also the linguistic contrast between the native and target language form is one source of difficulty in learning a second language. But the creative process of forming an inter-language system involves the learner in utilizing many facilitative sources and resources. Yorio also stresses that communicative competence with all its subcategories is the ultimate goal of learners as they deal with function, discourse, register, and non-verbal aspect of human interaction and linguistic negotiation (Brown, 2000).

While Krashen's **Input Hypothesis Model** emphasized that in order for language acquisition to occur, the acquirer must understand through hearing or reading the input language that contains structure "a bit beyond" the person's current level of competence. He also stressed that only once fluency is established should an optimal amount of monitoring, or editing, be employed by the learner. Krashen also claimed that the best acquisition will occur in an environment where anxiety is low while defensiveness is absent also known as **The Affective Filter Hypothesis.** Another insights of Krashen is his **Acquisition Learning Hypothesis**, he claimed that fluency in the second language performance is due to what we have acquired, not what we have learned. Because for him, people's conscious learning process and people's subconscious acquisition process are mutually exclusive. Krashen also asserts that natural comprehensible input has become the fundamental principle in second language acquisition. In his hypothesis Krashen asserts that adult second language learners have two means of internalizing the target language first is through (1) acquisition which refers to a subconscious and intuitive process of constructing the system of a language, and

second is (2) learning which refers to a conscious process in which learners attend to form, figure out rules and are generally aware of their own process (Brown, 2000).

In the theory of language according to the dichotomy "**restricted"** and **elaborated codes**, it emphasized that speakers from an elaborated codes will choose from a wider range of syntactic possibilities to convey a message than will speakers of a restricted code. Restricted code relies on gestures, intonations, and verbal metaphor to express many meanings particularly attitude towards the address, whereas elaborated code messages focused on the relation to the teaching English as a second language. In relation to the teaching English as a second language, a major function of schools is to give students familiarity and practice with the use of an elaborated code for both learning and self expression (Bernstein, 1972).

Furthermore, language learning cannot be understood through trial and error, associated with Gesalt (1924) as overt behavior alone. It requires a more comprehensive explanation because it involves simultaneously the widest range of human activities (Adapun and Ismael, 2011).

Ausubel as cited by Brown (2000) noted that people of all ages have little need for rote mechanic learning that is not related to existing knowledge and experience. Most items are acquired by meaningful learning. Even children's practice and imitation is a very meaningful s opposition for this position, and it is common to distinguish between two types of classroom activities which is the *meaning-focused*[2] and the *form-focused*[2]. These two distinctions are very important in current pedagogy and both of meaning-focused and form-focused activities are thought to be necessary for a successful development of both fluency and accuracy in are thought to be necessary for a successful development of both fluency and accuracy in Second/Foreign language learning (Celce- Murcia, 2006).

Furthermore, the **Input Model** in a cognitive approach to second/foreign language learning, it emphasize that access to target language input is seen perhaps the most critical requirement for language development. In fact one influential researcher asserts that "second language acquisition is shaped by the input one receives" (Gass, 1997) as cited by Celci-Murcia (2006).

According to Schmidt's (1990), **Noticing Hypothesis** as cited by Celce- Murcia ( ), he said that once a student becomes aware of a particular grammar point or language feature in input –whether through formal instruction, some type of focus-on-form activity, or repeated exposure to communicative use of the structure—he or she often continues to notice the structures in subsequent input, particularly if the structure is used frequently. According to Fotos (1993) as cited by Celci Murcia (2006), repeated noticing and continues awareness of the language feature is important because it appears to raise the student's consciousness of the structure and to facilitate restructuring of the learner's unconscious system of linguistic knowledge. As mentioned earlier, focus-on-form activities according to Doughty and Williams (1998) as cited by Celci-Murcia (2006) usually constitute implicit grammar instruction only, and include "flooding" communicative material with target forms, physically highlighting them within purely communicative activities so that students must use the forms for successful performance/completion.

[2] Meaning-focused- refers to purely communicative practices where the goal is to process meaning

[2] Form-focused- refers to practices that draw attention to the way language forms are used in discourse.

Language expectancy theory explains the effect of the use of different linguistics variations (language, and language intensity) on people who use persuasive messages. It is used as theoretical framework to explain the effect of several source, message and receivers variables on message persuasiveness. Persuasive messages are used often with this theory. The impact can be described of using different intensities in language (Mantilla and Mercado 2006).

Another theory is also named as **Optimality theory** which is considered as a new theory of grammar. It is a linguistic model proposed by the linguist Alan Prince and Paul Smolensky in 1993, and expanded by John J. McCarthy and Alan Prince in 1993. The theory is known to be applicable to subfields of linguistics such as syntax and semantics. Optimality theory is usually considered a development and generative grammar, which shares its focus on the investigation of universal principles, linguistics typology and language acquisition. This theory rejected the universal grammar. The main idea of Optimality Theory is that the observed 'surface' forms of the language arise from the resolution of conflicts between grammatical constraints (Mantilla and Mercado, 2006).

Gunning (1996) as cited by Mantilla and Mercado (2006) defines a schema as the organized knowledge that one already has about people, places, things, and events. Kitao (1990) as cited by Mantilla and Mercado (2006) says that Schema theory involves an interaction between the readers' own knowledge and the text, which result in comprehension. In attempting to comprehend reading materials, students can release this new information to the existing information they have compartmentalized in their minds, adding to these "files" for future use. Based on the Schema theory, depending on how extensive their "files" become. Their degree of reading comprehension may vary.

Conceptual Framework

This study is focused on the English Grammar errors committed by the Fourth Year High School students of MSU Integrated Laboratory School in relation to their Academic Performance in English. The treated variable in the study include the independent and dependent variables.

Figure 1 on the next page illustrates the conceptual framework of the study. As shown,
the profile of the respondents is described in terms of age, gender, family monthly income, number of siblings and reading materials available at home. It also focused on the common errors encountered by the respondents in English Grammar usage such as subject-verb agreement, pronouns, adjectives and adverbs, prepositions, tenses, and modals. Thus, these variables are inferred to have influenced the Grade Point Average (GPA) in English among the Fourth Year High School Students in MSU-ILS, Marawi City during the School Year 2012-2013. From the findings gathered, implication as well as recommendations where then drawn.

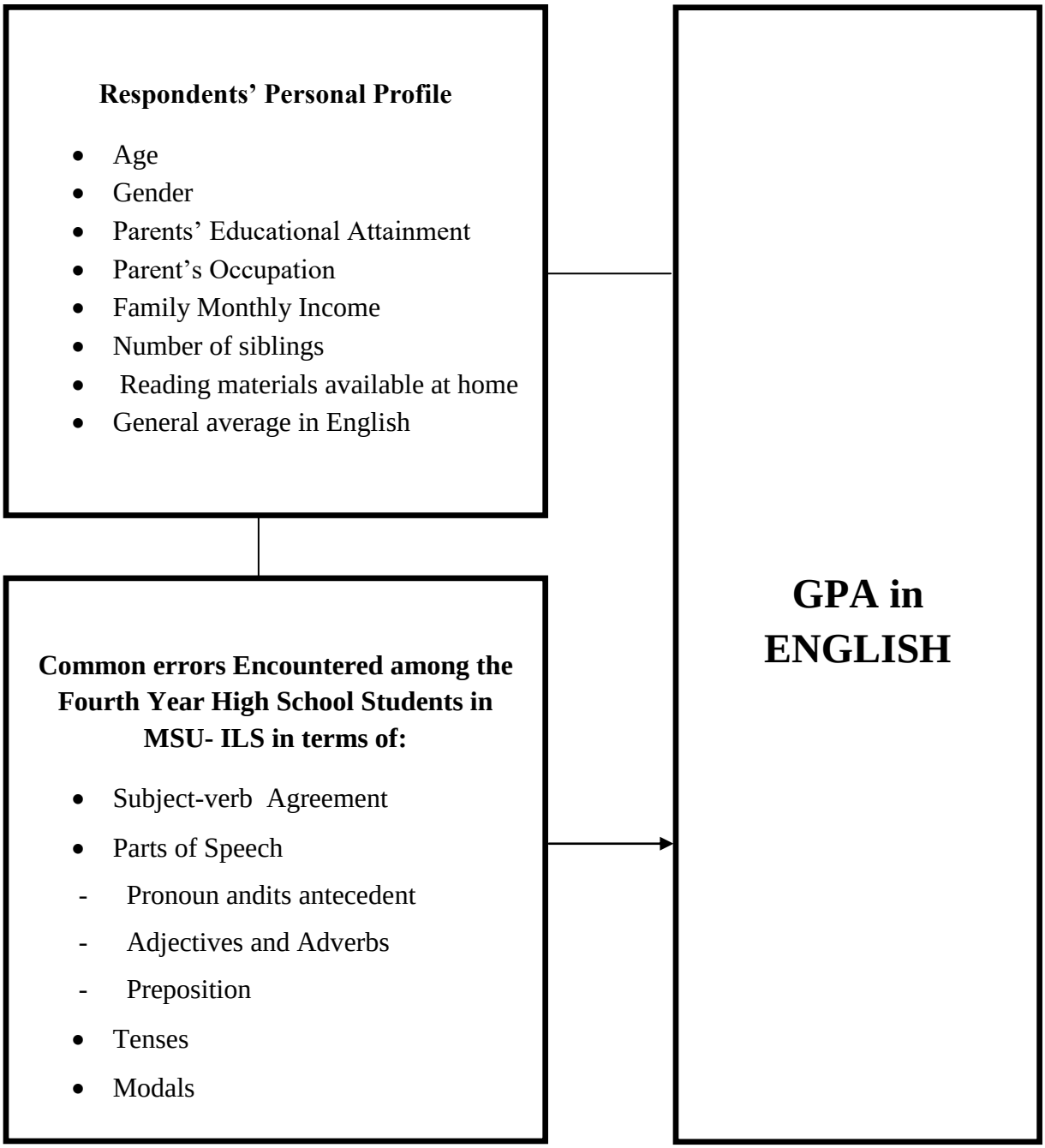

Figure1. Schematic Diagram of the Conceptual Framework of the Study

Statement of the Problem

This study aimed to relate the Grade Point Average in English to the common errors encountered in English Grammar usage among the Fourth Year students of MSU-ILS, MSU, Marawi City during the School Year 2012-2013.

Specifically, it sought to answer the following questions:

1. What is the profile of the selected Fourth Year high school students in MSU ILS in terms of:
   1.1. Age
   1.2. Gender
   1.3. Parents' educational attainment
   1.4. Parents' occupation
   1.5. Family monthly income
   1.6. Number of Siblings
   1.7. Available Reading Materials at Home
2. What are the common errors in English grammar usage that are encountered by the first year high school students in MSU ILS in terms of:
   2.1. Subject Verb Agreement
   2.2. Parts of Speech
      2.2.1. Pronouns
      2.2.2. Adjectives and Adverbs
      2.2.3. Preposition
   2.3. Tenses
   2.4. Modals
3. What is the respondents' latest Grade Point Average in English?
4. Is there a relationship between the respondents' common errors encountered in English Grammar usage with their latest Grade Point Average (GPA) in English?
5. What implications can be drawn from the findings of the study?

Null Hypothesis

The following null hypothesis was tested at 0.05 level of significance:

Ho: There is no significant relationship between the respondents' Grade Point Average in English and the common errors they encountered in English grammar usage.

Scope and Limitation

This study focused on the common errors encountered in English Grammar usage among the Fourth Year High School students of MSU- ILS as it relates to their academic performance in their English subject.

The source of the data of the study was grasped from the selected respondents who are currently in the fourth year high school level. Moreover other factors considered in this study is to know the respondents profile such as their age, gender, parent's occupation, parents' educational attainment and family's monthly income, available reading materials at home, and GPA in their English subject The study was administered by providing a structured questionnaire to the respondents to test their performance in English grammar particularly the subject verb agreement, noun/pronoun and its antecedent, preposition, tenses, adjectives, adverbs and modals.

Significance of the Study

The study will give a lot of significance to those people who are on the process of learning the English language and the people who taught it. Conscious awareness of language makes it possible for learners to think about the appropriateness of what people say and to segment language into units. The results of the study will be pertinent and beneficial to the following:

English Language Teachers. The results will help the language teachers to realize the student's weaknesses in the English subject that will immediately help the teachers through giving them an idea of what will be the topics to be focused on the remedial instructions if any, and the proper instructional materials that can be used.

Learners/ Students. The students will become aware of their deficiency in the English Grammar and can put an action into it.

Curriculum Planners/ Administrators. Through knowing the findings of the assessment, it would serve as their guide on what further adjustments would be made to develop an appropriate curricula.

Parents. This study would serve as an awareness to the parents about the performance of their child in the English grammar. This could assist them in finding a solutions to their child's deficiency either looking for a remedial teacher, or personally assist their child in improving

their language skills.

Librarians. They would know what appropriate reading materials is fitted and needed by the students in order to mold their English language skills.

Future Researchers. They are encouraged to conduct for the strategies on how to develop the grammatical usage abilities of the learners.

Definition of Terms

The following terms are defined contextually or conceptually for further understanding of the study:

Acquisition. It is the act of gaining of something for ones self (Webster's Dictionary, 1995). In this study it refers to the first English words understood by the students either acquired in their homes or at their environment.

Adjective. This refers to a word that modifies a noun or pronoun. It is used to tell which one, what kind, how many, or how much about noun and pronouns (Serrano and Ames, 1995). In this study, it is one of the components of grammatical competencies to be used in identifying the respondents' errors.

Adverbs. This refers to a word that modifies a verb, an adjective and another adverb (Serrano and Ames, 1995). As used in this study, this is one of the components of the parts of speech, which errors encountered are used to identify the respondents' grammatical abilities.

Agreement. This refers to the required change in the form or part of the sentence as determined by another part (Dumaluan and Luza, 2005). In this study it relates to their performance of the respondents in subject- verb agreement test.

Antecedent. According to Good and Scates (1972) as cited by Dumaluan and Luza, (2005), it is a word to which a pronoun refers. As used in this study, it relates to the respondents' performance in pronoun.

Common Errors. This refers to the difficulty or errors committed by the respondents in English grammar test given. In this study, it deals with the usual errors the respondents' incurred in the grammar test. Also in this study it is scaled as high error, average error, and low error.

English Grammar. This refers to as morphology, syntax, semantics, pragmatics (Webster's Dictionary, 2005). As used in this study, it ought to examine the English grammar performance of the respondents.

Grammar. Is a system of rules by which words are formed and put together to make sentence. In this study it relates to the respondents' English grammar competency.

Modal. It is used to describe verbs and auxiliary verb in expressing a grammatical mood such as possibility or necessity (Encarta Dictionaries). In this study, it is one of the components of the grammar test being examined.

Pronoun. This refers to a word used in place of a noun (Serrano and Ames, 1995). In this study it is included in the components of the parts of speech which errors encountered are used to identify the respondents' grammar proficiency.

Preposition. This refers to a word placed before a noun or pronoun or state of being (Serrano and Ames, 1995). In this study, it is one of the elements in the parts of speech which are tested to know the grammar ability of the respondents.

Parts of Speech. It is a group of traditional classification of words according to their functions in context including the noun, pronoun, adjectives adverbs and preposition (http://www.thefreedictionary.com). As used in this study, it is subdivided into its component parts in order to discover thoroughly the respondents' grammatical deficiency.

Subject-verb Agreement. It is a grammatical rule which states that the verb must agree in number with its subject (http://eee.uci.edu/programs/esl/svlink.html). In this study, it is used to examine more about the respondents' deficiency in English grammar applying it to the rules of the subject-verb agreement.

Tense. One of the sets of forms of a verb that express the different times at which action takes place relative to the speaker or writer, e.g. the present, past or future (Encarta Dictionaries). In this study, it is one of the components being administered in the grammar test.

Research Design and Methodology

This chapter consists of the research methodology of the study. It comprises the following: research design, setting of the study, respondents of the study, research instruments, data gathering procedures, and statistical tool used.

Research Design

. This study made use of the descriptive – correlation method of research because it aims to find out the correlation of the respondents' GPA in English, their performance in the English grammar test, and the profile of the respondents in terms of their age, gender, parent's educational attainment, parent's occupation, family monthly income, available reading materials at home.

Locale of the Study

The researchers conducted their study at Integrated Laboratory School, Second Street, Mindanao State University Main Campus, Marawi City.

The Mindanao State University (MSU), chartered under Republic Act 1387 (As Amended by Republic Act. No. 1873, 3797, and 3668) was formerly established on September 1, 1961. Mindanao State University is situated a top 100-hectare site, which form part of a military reservation about 2000 ft. above sea level overlooking the blue serene waters of Lake Lanao. It is located about 4 km from downtown Marawi. The campus where the locale of the study is situated is accessible either by land, air and sea transportation from all point in mainland, Mindanao via Iligan City which is above 40 km from the campus.

Its first classes were opened in June 13, 1962. In order to meet the pressing educational training needs of the students. The Board of Regents (BOR) of the University approved on September 9, 1964 the establishment of the Laboratory Elementary School (LES), which turned to be MSU-ILS now, where the study is conducted. This was designated to fulfill a purely laboratory function to the college of the university and serves as a service function to the graduating students who are future teachers. Its name was changed from LES to ILS or known as Integrated Laboratory Schoolin accordance with BOR resolution No. 1522 series of 1978.MSU- ILS continues its mission of the LES in performing both its laboratory and service foundation.

Respondents of the Study

The respondents of this study are the selected 99 Fourth Year high school students in Mindanao State University – Integrated Laboratory School Marawi City who are currently enrolled during the school year 2012-2013. They are chosen as the respondents of the study with the reference to have already taken much of their English subject.

Data Gathering Procedure

In gathering the data, the researchers have forwarded a letter to the school principal requesting the permission to conduct a survey on the students' profiles and to test the respondents' English grammar performance. The researchers asked the permission and assistance from the classroom teachers for the distribution of the questionnaire.

The personal data sheets along with the questionnaires were given individually to the respondents of the study. Rest assured that the personal information given will be kept confidential. The directions regarding the completion of the questionnaires were explained to the respondent and the completion of the test taken at a maximum of 1 hour.

Research Instrument

The data of the study were gathered using a structured questionnaire to survey the common errors in English grammar usage. The questionnaire was subdivided into two parts, the first part was the personal profile of the respondents that include their age, gender, civil status, religion, ethnicity, parent's educational attainment, parent's occupation, family monthly income, and the respondent's general average in their English subject. And the second part accommodates the English grammar test which is composed of their performance in subject verb agreement, noun/ pronoun and its antecedent, adjectives and adverbs, tenses, and modals.

Statistical Tools

The statistical tools used in this study are the following:

1. frequency and distribution,
2. mean

   $$\bar{X}=\frac{\sum x}{n}$$
3. standard deviation,

   $$\sigma 2 = \frac{\sum_{i=1}^{n}(xi-x)2}{n}$$
4. Pearson product moment correlation coefficient, and

   $$r = \frac{n\sum xiyi-\sum_{i=1}^{n} xi \sum_{i=1}^{n} yi}{\sqrt{[n\sum_{i=1}^{n} xi2-[\sum_{i=1}^{n} xi]2]\,[n\sum_{i=1}^{n} yi2-[\sum_{i=1}^{n} yi]2\,]}}$$
5. t- test of significance.

   $$t= r\sqrt{\frac{N}{1+r2}}$$

These tools can help the researchers to survey the common errors encountered by the respondents in English grammar.

The Frequency Distribution Table is a tabular presentation where the data are grouped or categorized into different classes and the number of observation that fall in each of the classes recorded. The mean and standard deviation was used to measure the variations expressed in the same units as raw data. Pearson product moment coefficient of correlation was used to measure the linear correlation between the variables. t- test of significance on the other hand was used in order to know the significant relationship of the variables of the study such as the common errors encountered by the respondents.

Summary, Findings, Conclusions, Implications and Recommendations

This chapter constitutes the summary, findings, conclusions, implication and recommendation of the study.

Summary

This study was conducted to investigate the common error encountered in English Grammar usage among the fourth year high school students of MSU- Integrated Laboratory School during the school year 2012-2013.

Specifically, this study sought to answer the following questions: (1) What is the profile of the selected fourth year high school students in terms of age, gender, parents' educational attainment, parents' occupation, family monthly income, number of siblings, and available reading materials at home. (2) What are the common errors committed by the respondents particularly in subject-verb agreement, pronouns, adjectives and adverbs, prepositions, tenses and modals. (3) What is the respondents' Grade Point Average in English? (4) Is there a significant relationship between the respondents' GPA in English and the common errors they have encountered in English Grammar usage? (5) What implication can be drawn from the findings of the study.

This study comprises a selected 99 fourth year high school students of MSU Integrated Laboratory School, Marawi City. In gathering the data, a self-constructed structured questionnaire was administered and investigated using the frequency and percentage distribution on the respondents' profile. On the other hand, statistical tools such as mean and standard

deviation, Pearson product moment coefficient correlation, and t- test of significance was appliedon the common errors encountered in the English Grammar usage and the respondents' GPA in English. The questionnaire was designed in order to scrutinize the common errors encountered in English Grammar usage that is perceived by the respondents.

The accumulated data was tabulated, analyzed, and interpreted using the statistical tools namely: frequency and percentage distribution, weighted mean, standard deviation, Pearson product moment coefficient of correlation, and t- test of significance.

Findings

Based on the data gathered and analysed, the following major findings are put forth:

1. A little more than majority (54.55%) of the respondents are 16 years old;
2. Majority (59.60%) of the respondents are females;
3. Majority (86.86%) of the respondents' father's educational attainment is in the college level;
4. Majority (56.56%) of the respondents' father's occupation are government employees;
5. Majority (85.86%) of the respondents' mother's educational attainment is in the college level;
6. Majority (49.49%) of the mothers of the respondents are unemployed;
7. Majority (75.76%) of the respondents have a family monthly income of above P9,000;
8. Many (37.37%) of the respondents have between 4-6 siblings;
9. Books are the most available reading material of the respondents at home;
10. The most common error encountered by the respondents is in the subject-verb agreement;
11. The least common error encountered by the respondents is in the use of adjectives and adverbs;
12. The respondents' GPA in English is between 80-84 described qualitatively as good;
13. The respondents' GPA in English is significantly related to the common errors incurred by the respondents in the English grammar usage such as subject- verb agreement, pronouns, adjectives and adverbs, prepositions, tenses, and modals.

Conclusion

From the findings it is concluded that majority of the performance in English grammar usage among the selected Fourth Year high school students in MSU-ILS is defined to be significantly related with their Grade Point Average in English. Hence, their GPA in English is described qualitatively as in the average level in the same way as their performance in the grammar test that was given.

The study implies that the performance of the respondents in the grammar test is believed to be in the average level as in the areas of subject-verb agreement, pronouns, adjectives and adverbs, prepositions, tenses, and modals. Consequently, based on the findings, those categories or areas have varying results. Through comparing the results of each of the grammar categories, it was found out that among the grammar areas tested, subject-verb agreement was having the most high in errors. That means to say that majority of the respondents have common errors encountered in the subject-verb agreement.

This suggests that the Fourth Year high school students of MSU-ILS have difficulty in the subject- verb agreement usage. But on the whole, their performance in English subject was described qualitatively as in the average level.

Recommendation

From the findings, conclusion and implications that was drawn, herein are the following approbation:

1. English language Teachers are recommended to weigh their performance in the effectiveness of teaching the English grammar usage. They are also hereby recommended to use different types of techniques and approaches in the Second Language Teaching for their students' reinforcement, and also to apply the new trends in the language teaching.
2. Learners/Students will serve as a guide and reference for the future researchers of the English grammar difficulties encountered by the students. They are recommended and encouraged to make use of the electronic mass media such as English films, e-books, podcasts, and other kinds of electronic mass media to enhance their English proficiency. They are encouraged to have discovery learning with the right use of technology.
3. School Administrators are recommended to provide latest reading materials either electronic or non-electronic. They are also recommended to apply in their curriculum the new trends in language teaching and to advocate new programs that are productive enough for the enhancement of the grammar proficiency of their students.
4. Parents are entitled to guide their children in their studies through equipping them for an enough supply of electronic and non-electronic mass media that can eventually boost their children's grammar performance. This mass media can be a great help in enhancement of their four Macro Skills such as listening, reading, writing and speaking.
5. School librarians are suggested to inform the school teachers and students of the current trends and updates in the new materials available concerning grammar.
6. Future English Language Teachers will serve this study as a guide for them to be acquainted to the strength and weaknesses in English grammar usage that the students are currently undertaking. And to prepare for the major solutions to it.

Contextualisation of History Education:

Teaching about World War II in Japan

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Abstract:

This paper deals with a number of important themes of history education, including the relationship between national history, international politics and education in modern times. It argues for the significance of the context of international politics in the analysis of national policy for education. Educational policy is to be understood in the context of dynamic politico-social transformations in the modern world.

As an example, the paper looks at international discussion on the treatment of World War II in Japanese history textbooks. In them, descriptions about the war in East Asia have been modified over time, arguably, along with the contextual changes of international politics in the region. Ever since then end of the war, this part of history textbook has widely been discussed both inside and outside Japan. Although the topics of discussion in the individual cases vary, what is central to them is similar: how the conduct of the war is demonstrated in history textbooks for Japanese secondary schools.

What is theoretically framing this paper is Japan's quest for a 'modern self' from the nineteenth century, the 'development' of its modern education through international educational interactions and the more recent troubled education of its modern history. These can only be understood in terms of Japan's positioning of self in the political context of the international community in modern times. The history of political, economic, social and cultural development in Japan has rested on its uncompromising policy for an internationally interactive education. While many terms have been adopted to explain this problem of Japan's modernisation and its teaching, the paper suggests that choices made by the Japanese government for education have been contingent upon the positioning of Japan by itself in modern international politics.

Keywords:
history education, international politics, World War II, Japan, modernity

1. Introduction

In the past few decades after the end of the War, it had been interpreted in a variety of perspectives. They have raised issues in academic, public and political discussions, and often times controversies. Although more than 70 years has passed by since the war end, and 65 years since the 'settlement' of the war, discussions and controversies have never been stopped. Consequently, they have brought about many 'histories' about the war.

At the same time, from the end of the twentieth century, there have been apparent changes or a tendency in historical interpretation about past events. A number of the governments or political leaders in countries which had heavily been involved in past wars or international conflicts began to review the traditionally and broadly understood views about aggressions and violence conducted by them towards other countries and peoples. Often, they now offer official apologies and compensation to the victims. In this so-called 'age of apology', such tendencies are observable not in particular areas, but in many places in the world. It is argued that the background of such pacifist-inclined movements is political prudence and tactics in which the consequent construction of international relationships of harmony is regarded not only as peaceful but also 'productive' (Barkan & Karn 2006).

However, such movements vary in terms of timing, intensity and effect in many cases. This paper argues that this variety can be understood along with the contextual changes in international and domestic politics. In this paper, an example is drawn from changes in teaching about World War II in Japan. The paper looks at domestic and international discussions on the treatment of the war in Japanese history textbooks. In them, descriptions about the war waged in the East Asian region have been modified over time, arguably, along with the changes of international political context which stimulated domestic discussions as well. Since the end of the war, the part of history textbook has widely been discussed both inside and outside Japan. Although the topics of discussion in the individual cases vary, what is central to them is similar: how the conduct of the war by the Greater Japanese Empire (1889-1947) is demonstrated in history textbooks for Japanese secondary schools. Critical voices, both from the 'right' and the 'left', about the treatment of the war are remarkably in accord with each other: history textbooks authorised by the Japanese Ministry of Education do not capture the 'true history'. However, their truths are different, indeed greatly.

To examine the arguments, the paper begins with tracing a slow genesis of the strained relationship between Japan and the neighbouring countries at the onset of her modernisation in the nineteenth century, before entering into the exploration of the history textbook controversies which started with Japan's defeat in the war.

2. A modern Japan and the centre of the world

Japan's perception of the centre elucidates the driving force of Japan's modernisation project. It has defined Japan's positioning of its *self* in nineteenth-century international relations. The history of the modern Japanese State has been revolving on Japan's longing for power, its legitimacy and the recognition of those entities by the centre of the world. The momentum of this was not based on coercion, but was a kind of a centripetal dynamics of Japan's passage towards a modern world in international terms. "Society has a center", as Shils said (Shils 1975). It is a single inclusive entity which governs society. The centre of society is a phenomenal fact, but not a fixed being. It is verifiable through observation, impression, logic, intelligence and the other kinds of human experience. Thus, primarily, the centre is based on consciousness. The values and norms, which are shared within the small governing group, prevail in their spatial domination. In order to claim the universality of the values and beliefs, the centre has an expansive tendency.

The Japanese pattern of State formation reflected the political, economic, military and cultural power struggle of Japan with the Western modern States. The formation of a modern State in Japan had its rise in political aspirations for survival from the Western threat to national sovereignty, marked by the demand of the American Commodore Perry for Japan's opening in 1853. The threat

resulted in a sequence of unequal treaties with the Powers – the United States, Britain, France and Russia – and the rise of a strong sense of national dishonour held by Japanese leaders. Within the context of the Western threat to national sovereignty, the core political agenda of the Japanese State was political consolidation through the establishment of the central State machinery, and the strengthening of the national economy and the military through industrialisation. "In 1900", says Niall Ferguson, "the West really did rule the world". But he also views that "What enabled the West to rule the East was not so much scientific knowledge in its own right … Western dominance was also due to the failure of the Asian empires to modernize their economic, legal and military systems, to say nothing of the relative stagnation of Oriental intellectual life"(Ferguson 2006, lxvii-lxviii). The nineteenth-century Japanese leadership held the same view. Japan's attraction to the West was not limited to science and its military application. As a matter of fact, Western technology had already been in place before the 'official' Westernisation in the Meiji Restoration. What drew the attraction more of the nineteenth-century Japanese were the 'progressive' ideas of national polity and social organisation in the West. Japan recognised the futility of the Sino-centric worldview and the massive gap between the Euro-American and Asian civilisations. *Datsu-A-Nyu-Ou-ron*, the idea of Japan's 'Leaving Asia and Entering Europe', had firmly been embraced by Japanese leaders.

As well, Japanese leaders understood the legitimacy of the role of military as the voice of the nation. In the process of the abolition of the Tokugawa feudal domains, the Japanese government abolished the Ryukyu Kingdom in Okinawa and made it part of Japan in 1872. In 1895, Japan won the Chino-Japanese War, and consequently gained control over par of China: the Liaodong Peninsula, the Pescadores and Taiwan. China also recognised the independence of Korea. By that time, Japan had secured a firm foothold in the continent with an eye to further expansion of the Greater Japanese Empire and the building of the Greater East Asia Co-Prosperity Sphere until its defeat in World War II in August 1945.

3. The beginning of history textbooks controversies: Defeat in the war and the re-writing of national history

After the defeat, the US-leading General Headquarters (GHQ) of Supreme Commander for the Allied Powers (SCAP) launched its military occupation of Japan, and its 're-education' programme. In education, SCAP ordered the suspension of instruction in Japanese history. The pre-1945 history textbooks had gone through SCAP's heavy scrutiny. As an immediate measure, children smeared militaristic and ultra-nationalistic part of their textbooks with black ink. Providing new 'democratic' textbooks for them was an urgent task of the Japanese Ministry of Education. Some educators expected that SCAP would abolish the earlier system of state-written textbooks, and introduce a new system of private publishing (Ienaga 2001, 52-55). Despite the expectation, SCAP maintained the pre-war system. Initially, the Ministry of Education had difficulty in appointing textbook writers, because of their fear of foreseeable nationalist criticisms, and ultimately marked out Saburo Ienaga (1913-2002), professor of Tokyo Normal School (renamed Tokyo University of Education in 1949, the predecessor of the University of Tsukuba), and three others for the primary school version. To realise SCAP's plan of resuming history instruction in October 1946, the two thin volumes of *Kuni no Ayumi* had been hastily written by Ienaga *et al* within one and a half months. Retrospectively, Ienaga said that there had been almost no SCAP's imposition of detailed contents on the textbook writers, and *Kuni no Ayumi* was very different from the Constitution imposed by SCAP (Ienaga 2001, 61). Its major request was that the textbook should not: 1) be propaganda; 2) refer to militarism, ultra-nationalism and *Shinto*; and 3) be dominated by the achievement of the emperors. *Shinto* mythology was replaced by 'science'.

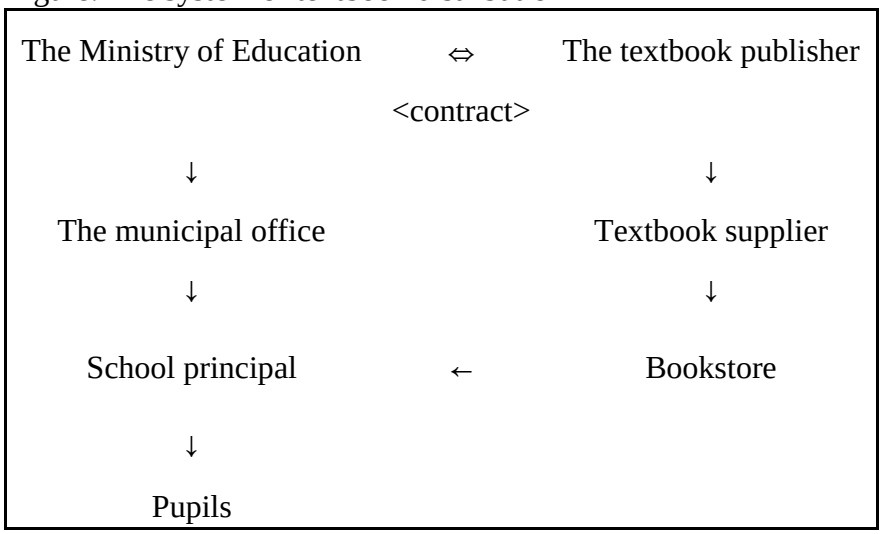
After the enactment of the Law of School Education in 1947, textbooks could be produced in the private sector. Articles 21 and 107 of the Law says that all schools (except for upper secondary schools, the late stage of lower secondary schools, and special schools *e.g.* for the blind or the deaf) must use textbooks which are authorised by the Minister of Education. The Minister's decision

should be based on proposals made by the Textbook Authorisation and Research Council (TARC). Its regular and temporary members are selected by the Ministry of Education among university professors and teachers of primary and secondary schools. Textbooks applied for the authorisation are firstly studied by the TARC and the textbook research officer(s) of the Ministry. Once the both parties think that closer examinations are necessary, the TARC sets up a special committee. This textbook authorisation system brought about much controversy from the 1960s, ironically by Ienaga.

4. 'Right turn' and the backlash by Ienaga: After the military occupation in the 1950 onwards

After the withdrawal of the US, the Ministry of Education had gradually taken full control over the contents of textbooks. Based on two laws enforced in 1963, the Ministry adopted a gratuitous measure for textbook distribution. Firstly in 1963, textbooks were given for free to the first grade pupils of primary schools, and by 1969 to all in compulsory education, *i.e.* primary and lower secondary schools. With the consultation of the local board of education, the individual municipal offices choose a textbook for each of study subjects. The municipal authorities inform the Ministry of Education about the textbooks which they will adopt. Accordingly, the Ministry makes the contract of textbook purchase with publishers, and orders them to distribute the textbooks to the schools where the municipal offices exercise jurisdiction.

Figure: The system of textbook distribution[1]



In other words, textbooks are not chosen by individual schools. In principle, children attending the public schools within the same village, town or city use the same textbooks. Since 1956, the system of public election for the educational board members had been replaced by the system of appointment by the head of the local government based on the agreement of the local parliament. Ergo, the selection of textbooks came to be largely influenced by the decisions of politicians.

At any rate, in the first place, textbooks must be examined and authorised as 'textbook' by the Ministry of Education. In post-war Japan, there have been a few historians who wrote about Japanese history on their own terms as opposed to those of the government. Ienaga was arguably the most prominent one amongst them. He wrote *Shin Nihon-shi (New Japanese History*) for upper secondary education. Its 1962 edition did not pass the ministerial examination, because there were too many 'inappropriate' descriptions about WWII. Ienaga was requested to make a large number of

[1] The Ministry of Education's chart (http://www.mext.go.jp/a_menu/shotou/kyoukasho/gaiyou/04060901/1235098.htm, access on September 10, 2015).

corrections, and the textbook was accepted by the TARC. In 1965, Ienaga filed a civil lawsuit by requesting a compensation for psychological damage he suffered from such heavy ministerial demand, and above all, by claiming the unconstitutionality of the system as such (Nozaki 2008). The key question was the interpretation of Article 21 of the Constitution. It states: "Freedom of assembly and association as well as speech, press and all other forms of expression are guaranteed. No censorship shall be maintained, nor shall the secrecy of any means of communication be violated."[2] In the first trial of this lawsuit, the Tokyo District Court did not recognise the system as censorship, but ordered the government to pay Ienaga 100,000 yen for a certain abuse of discretion *vis-à-vis* the correction request. Between 1965 and 1997, Ienaga had filed altogether three lawsuits against the state, and won a partial victory. But, essentially, the Japanese judiciary ruled that the textbook authorisation system was constitutional.

5. Close-up of Japan as 'aggressor' in the 1980s

Markedly, when Ienaga raised questions about the Japanese government's treatment of the war in history textbooks, the Chinese and South Korea governments virtually remained silent in that period. At least their voice was not big enough to be heard by nationwide Japanese public. It was from the early 1980s that the debate about Japanese history textbooks has become an international issue in East Asia.

In 1982, *Asahi Shimbun* and other Japanese and foreign media reported that the TARC requested a publisher to use the word *shinshutsu* (advancement) instead of *shinryaku* (invasion) to express the expansion of the Japanese army to Manchuria. The Chinese and South Korean governments promptly reacted to this report and conveyed their official protest against the Japanese government's measure. In the same year, the Chief Cabinet Secretary, Kiichi Miyazawa, stated that the Japanese government would revise the textbook authorisation guidelines to develop friendly and cooperative relations with neighbouring countries. This 'Neighbouring Country Clause' became a new criterion for textbook authorisation, and the Ministry of Education has been subject to due consideration of the treatment of history concerning Asia, especially WWII.

Afterwards *Asahi*'s report turned to be not based on the fact, and the media revised their earlier reports. However, this incident virtually triggered international controversies in Asia about the treatment of the war in Japanese history textbooks. Incidents such as the Nanjing massacre, so-called 'military comfort women' and human experimentation by Unit 731 have always been the centre of the controversy. In addition to it, the publication of the following new history textbook and the authorisation of it by the TARC have made the controversy even more poignant.

6. Backlash from a different direction in the 1990s

There are varying views about the Japanese government's policy for the treatment of the war past. Some group of people, as seen earlier, regard the policy as conservative and authoritarian. Other people deem it national dishonour. Among those people, a number of university academics, lawyer, corporate president, *manga* writer and so on showed their dissatisfaction with existing seven history textbooks which are, for them, too self-tormenting and thus a serious threat to the national pride of the Japanese youth. In 1996, they found Atarashii Rekisi Kyokasho wo Tsukurukai (Japan Society for History Textbook Reform).

Table 1: The examples of textbooks criticized by the Society[3]

Textbook	Criticisms

[2] The English translation is drawn from the Prime Minster's Cabinet site (http://www.kantei.go.jp/foreign/constitution_and_government_of_japan/constitution_e.html, access on October 30, 2015)

[3] The Society's webpage (http://www.tsukurukai.com/02_about_us/02_maso_01.html#, access on 30 November, 2008).

Publisher	
Shimizu Shoin	Japan is described as an instinctively acting beast which single-mindedly rushed to invasion. But there must have been historical background and reasons for Japan's activities.
Tokyo Shoseki	It states that the reason for dropping an atomic bomb in Hiroshima was because it was 'the capital of the military', and states as if Japan was responsible for the bombing. Such a view will lead to an argument that the use of atomic bombs can be accepted, depending on the aims.
Osaka Shoseki	There is a simplistic distinction between hero (good guy) and villain. The former is China and South Korea, and the latter is Japan. The leaders of riots are described as the former and the rulers (shogunate, government or state) are the latter. Can history be explained in such simplistic dichotomy?
Nihon Bunkyo	"The Great Nanjing Massacre of 300,000 People" is not revised yet. All textbooks except for one by Fusosha (the Society's textbook) are written on the presupposition that there was a systematic massacre of people who were all civilians. The number of massacred people is noted as 300,000 which is not based on reliable evidence. This is all the extremely biased political view of China and left-wing scholars, as the incident has still been under scrutiny in academic societies.

The Society wrote a new textbook, *Atarashii Rekisi Kyokasho* (*New History Textbook*). In it, *Shinto* myths are sparsely introduced as to show 'important cultural heritage'. A 4-page section tells how the 8 islands of Japan were created by two gods, and how one of the gods became the first emperor (Nishio *et al* 2001, 60-63). The textbook names WWII in Asia 'Daitoa Senso' (the Greater East Asian War) instead of commonly-used 'Taiheiyo Senso' (the Pacific War) by noting that the use of the first one had been banned by the US. The first name apparently rationalises Japan's idea of waging the war for the sake of the construction of the Greater East Asia Co-Prosperity Sphere and a salvation of Asia from the yoke of the West. This textbook also shows how valiantly the Japanese people, especially boys and girls in Okinawa, had fought against the enemy. This way of glorifying civilian valour is not popular in Japan, and definitely not acceptable for most Okinawan people.

To this textbook published by Fusosha, the Ministry of Education requested a number of corrections, and at last authorised in the following year. A number of political and civil groups staged a boycott of the textbook. In reality, the municipal offices which chose it were 0.4% of the entire ones in the country in 2005.[4] Nonetheless, the authorisation of such historical views was not acceptable for the Chinese and Korean authorities. The bureaucracy in Tokyo tried to clear up their 'misunderstanding'. In 2005, the Public Diplomacy Department of the Ministry of Foreign Affairs decided to make Chinese and Korean (later along with English) translations of the modern parts in all eight history textbooks for lower secondary schools.[5] The Ministry commissioned a private translation company to make these three versions and to publicise them in its website which is linked to the Ministry's one. It states that the current debates on Japanese history textbooks have often been based on not correct understanding about them, and the purpose of this linguistic measure is to promote the understanding of actual history teaching in Japan.

7. Japan as aggressor and victim in the 2000s

But the controversy over the treatment of the Battle of Okinawa cannot be explained as a matter of

[4] The Society's newsletter released on 2 September 2005 (http://www.tsukurukai.com/01_top_news/file_news/news_050902.html, access on 20 December, 2008).

[5] The Ministry's statement (http://www.mofa.go.jp/mofaj/press/release/17/rls_0823a.html, access on November 30, 2015).

Japanese proficiency. The question in this case is in which processes and circumstances the so-called 'collective suicides' of the residents in the Okinawa islands had taken place. In dozens of the suicides, the Okinawan people killed their friends, neighbours, family members or themselves after the American troops effected a landing there. The prefectural government, the media and many people of Okinawa argue that the central government in Tokyo must admit that the suicides were not voluntary ones but by the coercion of the Japanese imperial army which had trained the soldiers to maintain good grace by choosing suicide over captivity by the enemy.

In March 2007, the TARC requested the following 5 publishers to delete narrations about the direct involvement of the Japanese military in those collective suicides from the history textbooks for upper secondary schools. Descriptions about the Okinawan collective suicides in history textbooks before and after TARC's suggestions are as follows (Ryukyushinposha 2007, 13):

Table2 : Initial and revised descriptions about the Battle of Okinawa (translation by the author)

Textbook Publisher	Initial text	Revised text
Yamakawa Shuppansha	There were some local residents who were expelled from trench shelters or driven into collective suicides.	There were some local residents who were expelled from trench shelters or a committed suicide.
Tokyo Shoseki	There were some civilian residents whom the Japanese army massacred on suspicion of espionage or people who were forced to commit collective suicides.	There were some civilian residents who were driven into collective suicides or whom the Japanese army massacred on suspicion of espionage.
Sanseido	As many people were forced to commit collective suicides by the Japanese army or murdered because they were burdensome in the battle or suspected of espionage, the battle of Okinawa was a tragedy in the extreme.	As many people were driven into collective suicides or murdered because they were burdensome in the battle or suspected of espionage by the Japanese army, the battle of Okinawa was a tragedy in the extreme.
Jikkyo Shuppan	The Japanese army expelled Okinawans from trench shelters, murdered some people on suspicion of espionage, made people commit collective suicides by hand grenades given by the army or kill each other, and engendered over 800 victims.	The Japanese army expelled Okinawans from trench shelters or murdered some people on suspicion of espionage. Committing collective suicides and killing each other occurred by hand grenades given by the Japanese army. The number of victims amounted to over 800.
Shimizu	There were some people who were forced to commit collective suicides by the Japanese army.	There were some people who were driven into collective suicides.

In the eyes of many people in Okinawa, all the revised texts blur the direct involvement of the Japanese in the collective suicides. They have long been arguing for the military's coercion of the suicides from the time of the Ienaga case. This time in 2007, many civilians stood up and took action. Over 116,000 people in Okinawa, whose residents are about 1.3 million, gathered to protest against this 'distortion of history'. The case of Okinawa is more complex than the others, because the perception of aggressor and victim is not readily dichotomised. It is not simple, also because the case of Okinawa concerns not only the matter of WWII, but also of its earlier history before the Meiji Restoration, of the still debated government's recognition of Okinawans as 'indigenous people', and *inter alia* of the national security inseparable from the large American military base residing after the

war.[6] The reason why so many Okinawan people jointed the campaign cannot be explained without their suffering during as well as after the war.

8. History textbook controversies in the light of international politics in post-WWII Asia

When the Greater Japanese Empire was vanquished in the war, a Japanese philosopher Ikutaro Shimizu said that "The Japanese became once again Asians by recognising Japan's inferiority to the West" (Shimizu 1992, 10). For him, Japan had been obsessed with a sense of inferior complex about its status among the Western countries. Like Shimizu, those who had reservations about Japan's partial but deliberate inclination to Western civilisation had only minor influence before the war. Yet again, he was one of the few Japanese intellectuals who voiced scepticism about the American way of reconstructing Japan after the war.

The thoroughgoing reconstruction of Japan had gone along with the appreciation of American leadership by the Japanese. It was 'American through and through.'[7] At the end of WWII in Europe, the so-called 'German problem' was at the top of the great powers' political agenda. The question was: "How should we position German power within the post-war European and international system of politics, military and economy?" By contrast, the international role of Japan remained, just like the country itself, an 'enigma' to the great powers. What was clear to the occupation authorities was a need to reform the 'infantile' nature of the country. Cancelling *Shinto* myth from Japanese history was a reform of major importance along with the abolition of *shushin*, the Imperial Rescript on Education and the multi-track secondary school system.

Notably, the major reforms had been mostly completed by the middle of 1948. From this period when communist power became noticeable in East Asia, the US policy for Japan shifted. It changed from 'mistrusted enemy' to the 'most important ally' in Asia for the US (Ward 1966). Now Japan should be strengthened economically and militarily. Initially, according to the plan of Edwin Pauley, the head of the Allied Reparations Committee, the reconstruction of the Japanese economy had to be paralleled with that of the other countries in Asia. The government of the Republic of China was also suggesting to the Allies about its plan for war reparations paid by Japan to China. However, these ideas of the immediate post-war period had lessened the influence on the American treatment of Japan. They now aim to bring up Japan in the pre-eminent position in politics and the economy in Asia. Japan's reparation for the war to South Korea was waited as late as 1965. It was called economic aid instead of indemnity, and not stated in the main text of the Treaty on Basic Relations between Japan and the Republic of Korea but in the attachment.[8] This post-war US-Japan alliance has had a great impact on the settlement of the war in Asia and consequently the treatment of Japan's conduct of the war in the post-war period (Shibata 2008).

Japan's responsibility for the conduct of the war was judged at the International Military Tribunal for the Far East in Tokyo (May 1946 - November 1948), also known as the Tokyo Trial.

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[6] As of February, there are the US military bases of 303,765km^2 in Japan, and 74.46% of the area are in Okinawa. The figures are drawn from the Ministry of Defense's website (http://www.mod.go.jp/j/defense/chouwa/US/sennyousisetutodoufuken.html, access on February 1, 2016).

[7] Interview with Delmer Brown, by Harry Wray on 19 January 1986, in *Harry Wray Oral History Collection*, a recording interview stored at the National Institute for Education Research in Tokyo, Japan. Brown had served the Civil Information and Education Section in SCAP between January 1946 and April 1951.

[8] The Agreement says that Japan and South Korea wants to promote the economic cooperation between them "in the hope that the two countries can solve the problems of the property rights and the claim rights of both nations." It was decided that between 1965 and 1975 Japan should grant 500 million US dollar (equivalent to 180 billion yen in 1965), of which the gratuitous aid was 300 million US$ (108 billion yen) and the rest of 200 million US$ was long-term, low-interest yen loan. (Kashima Heiwa Kenkyusho 1984, 584-585).

There, twenty-five Japanese leaders were condemned as 'Class-A' war criminals, and seven of them were sentenced to death by hanging, but Emperor Hirohito (1901-1989) had never been brought into the prosecution. At the Trial, the judges were selected from eleven countries, namely the US, Britain, the Soviet Union, France, the Netherlands, Australia, New Zealand, Canada, India, the Philippines and the Republic of China. Korea was given no place. The long occupation ended in 1952 after the Allies concluded the Treaty of Peace with Japan in San Francisco. This San Francisco Peace Settlement was signed by forty-nine countries, excluding yet again Korea and both Chinas (the Republic of China and the People's Republic of China) which the Allies disqualified. Overall, the political structure grounded on the San Francisco Treaty has dominated the international relations between Japan and countries in Asia-Pacific. For Japan's revival in international community, the decision of the government was to repair the relationship with the US, rather than that with the neighbouring countries.

After the demise of the Greater Japanese Empire, the ideology of State *Shinto* and the Emperor State faded away from the Japanese landscape. In general, some 'ethnic source of state legitimacy' remains after the war (Bobbitt 2002). In Japan fanatic attempts to revive the old imperial nationalism were doomed to be irrelevant. Nonetheless, the post-independence circumstances, notably the withdrawal of the Americans from Japan and the rise of communism in East Asia, helped the Japanese government adopt conservative policy for the overall reconstruction of Japanese society. The policy for textbook in the 1950s and the 1960s had such political and social background.

Despite the renunciation of war in Article 9 of the Constitution, Japan's rearmament has accelerated from the early 1950s. The US government re-interpreted the own-drafted Article 9, and permitted the Japanese government to form the *Keisatsu Yobitai* (Police Reserve Force), which has developed to the present Japanese Self-Defense Force. A renewed notion of the *raison d'être* of the state was sought in the legitimacy of the war as such. A number of the war criminals sentenced in Tokyo were eventually released from prison after a resolution of the National Diet in June 1952. Some of them regained their pre-war leading position in the state affairs. The Yasukuni Shrine, the former edifice of the State Shinto ideology, decided to enshrine the souls of Class-B, Class-C and eventually Class-A war criminals (National Diet Library 2007, 219, 225, 229, 232). The document released by the National Diet Library in 2007 shows that the decisions were made with the attendance of the Ministry of Welfare (the present Ministry of Health, Labour and Welfare).

In education, the Ministry of Education have installed a new subject of moral education, *dotoku*, in the school curricular from 1958. Japan Teachers Union (*Nihon Kyoshokuin Kumiai*, in short *Nikkyoso*) protested against this measure considering it as the revival of *shushin*, in which children had been taught how to make a harmonious society, love their country and revere the emperor before 1945. In 1966, the Central Council for Education, an advisory body of the Ministry of Education, proposed its idea of "*Kitaisareru Ningenzo*", the 'expected human character', for the students in upper secondary education. It suggested that the Japanese youth should retain a sense of 'true Japanese identity'. These arguably too-early revivals of political conservatism in post-war Japan had gone hand in hand with indications of the growth of the national economy within which the people gradually had overcome the malaise of the war (Shimazu 2003).

As said earlier, owing to the American support for the economy and the national defence, Japan has thrived in the post-war period. In the 1970s, Japan again started to seek economic ties in Asia. It was also the time when American's political and economic influence in Asia was lowered, particularly after the Nixon Shock and the Vietnam War. While American leaders were experiencing their *Nation at Risk*, Japan began to achieve a major position in the world economy and gained influence in Asia. In due course, Japan established a stable trading and production bloc in Asia. Ironically, the pre-war idea of the Asian Co-Prosperity Sphere virtually came true after, and arguably because of, her defeat in the war (Hatch & Yamamura 1996; Hofheinz & Calder 1982). This time, unlike in the pre-war period, the government's nationalist policy surfaced along with its awareness that Japan should stand on a more friendly footing in the international community than it had during

the war time. In 1977, the Japanese Prime Minister Takeo Fukuda pronounced that Japan would develop 'hear-to-heart diplomacy' for Asian countries. The so-called Fukuda Doctrine was indeed epoch making, and its idea set out the basis of Japan's ODA policy which has intensely focused on Asian countries. The shift of Japanese governmental policy for Asia coincided with the increasing voice from China and Korea about Japan's war responsibility.

China's intensified attention to the treatment of the war history in the 1980s can also be explained by the domestic affairs, that is the demise of Maoism and the rise of Deng Xiaoping (1904-1997). Deliberately, Mao Zedong (1893-1976) had downplayed the history of 'national shame' under Japan's occupation. Rana Mitter rightly notes that "Throughout the period up to the 1970s, the most traumatic of the many disastrous events to affect China in the twentieth century, the Sino-Japanese War, had been dealt with relatively cursorily in public memory and education. The need to appease Japanese sensibilities had meant that it was simply not tactful to recall the horrors of the war in detail" (Mitter 2003, 118). But Mao's death brought about a significant policy shift of the Chinese government about the war past. Moreover, at the height of the Cold War, China was keen for the international recognition of it as a legitimate state and had taken a policy of appeasement towards Japan as well. Therefore, Japan's official choice of China over Taiwan in 1972 had eventually changed the policy in Beijing. In these political circumstances, Deng began to highlight the image of China as the victim of Japan's invasion, and the Nanjing Massacre rapidly appeared in educational materials from the 1980s (Mitter 2003).

Within Japan, the death of Emperor Hirohito in 1989 certainly made the theme of the war a less heavy topic and eased the taboo of loud public voice about Japan's war responsibility. In the 1990s, leading politicians in Japan also began to pronounce a sense of guilt and remorse for the wartime suffering of neighbouring countries. In 1993, Yohei Kono, the then Chief Cabinet Secretary and the present Speaker of the House of Representative in the Japanese Diet, officially admitted the governmental involvement in the organisation of the war-time prostitution of Korean women. The pronouncement about Japan's guilt in the war made by Prime Minister Morihiro Hosokawa (1993-1994) of the conservative Liberal Democratic Party (*Jiyuminshuto*), was even ahead of that by Prime Minister Tomiichi Murayama (1994-1996) of Social Democratic Party Japan *(Nihon Shakai-to*). The fiftieth anniversary of the end of the war apparently drew political, public and media attention to the war greatly. In Japanese public culture as well, there has been an increasing number of TV programmes which denounce the Japanese army as aggressor from the middle of the 1990s (Shimazu 2003).

Japan's policy for reconciliation with Asian countries and their intensified attention to the war past brought about a backlash. Japanese educators and historians, who were annoyed by the political and social atmosphere, wanted to revamp Japan's 'diplomacy of humiliation' and the 'historical view of 'masochism'. The background of this has certainly much to do with the overall decline of left-leaning ideology and the substantial decay of Japan Teachers Union which retains little vestige of earlier power.[9]

The manifestation of Japanese cultural identity and a sense of national pride are articulated in the private sphere as well. The four-volume series, *Kyokasho ga oshienai rekishi* (*History that textbooks do not teach*)', authored by Nobukatsu Fujioka, the president Japanese Society for History Textbook Reform, sold over 1.4 million copies. The sense of national pride is explicit in popular sub-culture. Among the young generations in particular, expressions of an abhorrence of *Hinomaru* (the national anthem) and *Kimigayo* (the national flag) have been less and less popular, while some

[9] Cf. Duke (1973) argued that teachers in Japan as 'militant'. According to the Ministry of Education, in 1958, 86.3% of the entire school teachers in Japan belonged to Japan Teachers Union. As of 2012, however, the figure is merely 25.8%, and even 18.0% as for newly employed teachers. (http://www.mext.go.jp/a_menu/shotou/jinji/__icsFiles/afieldfile/2013/03/07/1331316_01_2.pdf, access on January 31, 2015).

school teachers still reject their presence in the school. *Manga* (Japanese comic books) also show strong interest in traditional culture among young readers. A series of *Gomanizumu Sengen*, drawn by Yoshinori Kobayashi, a cartoonist and an initial member of Japanese Society for History Textbook Reform, was also a million seller. However, on one hand, a most recent event concerning the interpretation about the war seems to have confirmed the government's determination of, and the public support for, a politically proper one about it. In 2008, Toshio Tamogami, the chief of staff in the Japanese air force, was discharged immediately after the disclosure of his winning a prize for his article about the 'false accusation' of Japan's conduct of the war. The government's decision was so quick that Tamogami had a very few chances to argue before the sacking. On the other, questions remain how a serviceperson with such political views could, in the first place, be promoted to that rank in the Japanese military (The Economist 2008, 41).

9. Concluding remarks

Things outside the school still matter greatly. The history textbooks controversies are not merely a matter of pedagogy. They are the immediate concern of politics, the economy and society in Japan and Asia Pacific. The Greater Japanese Empire had pursued a particular notion of progress in the context of international political discourses. The adamant policy of for the West and Asia, and the more recent troubled treatment of national history are entwined in the positioning of Japan in Asia and the world by itself. Varying interpretations about WWII reflected its elusive settlement in East Asia and the balance of power in international politics in the region after 1945. The increasing complexity of centre-periphery position in this area is a key to account for the development of Japan's history textbook controversies. In post-war Japanese education, the history of Japan's war in Asia has been demonstrated within their collective memory of Japan largely as victim and barely as aggressor unlike the memories of Chinese and Korean people. WWII is often regretted by highlighting the two atomic bombs in Hiroshima and Nagasaki. Naming the war 'Pacific War' averts people's eyes from the conduct of the war by the Japanese imperial army in East Asia. The fierceness of the Battle of Okinawa has also been overshadowed.

A dominant paradigm of historiography has been that the 'past' and 'history' of events are different (Jenkins 1991). Logically, past events as such cannot be present on the pages of textbooks, but only the texts of part of them can be presented. Interpretations of the war vary. After the war, in the very Euro-Russian context of international discourse, Winston Churchill called WWII the 'Necessary War'. In the eyes of many historians, the collapse of the Greater Japanese Empire was a necessary defeat. It was so, needless to say, for the victims of Japan's aggression. Ironically, it can also be said for Japan's post-war prosperity. Indeed, as John Dower (1992) points out, the Pacific War was a 'Useful War' for Japan, which has thrived hand in hand with this defeat and the dependable alliance with the American super power in the long post-war period. With the deliberate 'post-war consciousness' after 1945, the Japanese government and the people distinguished themselves from those before 1945. The post-war modifications have contributed and still contribute to the creation of anecdotes about the war.

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Determining the Effectiveness of Technology Supported Guided Materials Based on Cognitive Load Theory Principles Related to Celestial Bodies

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The aim of this study is to investigate the effect of guided materials based on Cognitive Load Theory principles related to celestial bodies on 7th students' performance, cognitive load and instructional efficiency. Semi-experimental research design was used in this study. Main application is carried out with 67 grade 7 students and one science and technology teacher in in Ordu. Data are obtained with; science test, performance test and Cognitive Load Scale. Science test was used as a pretest to determine the equivalency of the groups. Performance test and Cognitive Load Scale were implemented at the end of the learning session. The quantitative data analyzed with independent samples t-test was used to compare the differences of the experimental and control groups.
It is determined that guided materials based on Cognitive Load Theory principles made significant meaningful effect on students' performance and cognitive load compared with current instruction program. It was found that; learning environment enriched with animations developed Cognitive Load Theory principles provide the learning environment by having fun, permanent and meaningful learning. Compared to students in the control group, students in the experimental group learned with technology supported guided materials based on Cognitive Load Theory principles have lower cognitive load and it was concluded that they provide more effective learning.

Keywords: Cognitive Load Theory, Cognitive Load, Instructional Efficiency, Animation

1. Introduction

Information technology tools are contemporary tools which should be used for the people, institutions and companies to make their jobs more efficient, more qualified and faster (Sağıroğlu, 2001). With the development and progression of technology in all areas, information technology tools have also begun to be used within the process of education. In order to be able to appeal to more sense organs, multimedia should be included in the education process. Multimedia is the integration of different symbol systems such as text, graphic, animation, photograph, video and sound in a way that they complement each other in order to present a specific content (Aldağ and Sezgin, 2002). These symbol systems should be integrated according to specific design principles. To do this, human cognitive architecture, especially the working memory, which is one of the components making up the structure, should be known well. One of the instructional design models which use human cognitive architecture as base is Cognitive Load Theory.

Cognitive Load Theory is an effective theory in the areas of educational psychology and instructional design, which was suggested by John Sweller. According to the Cognitive Load Theory, it is accepted that of the memory types which make up the human cognitive architecture, working memory has a limited capacity to store and process information while long term memory has an unlimited capacity. It is suggested that learning will be negatively affected when working memory is overloaded. Working memory has two sub components as visual and verbal channel with limited capacity (Baddeley, 1992). Verbal expressions are processed in the audio channel of the working memory, while visual expressions are processed in the visual channel. Thus, material which appeals' only to visual or verbal channel will cause the capacity of working memory to exceed and as a result, cognitive overload. Materials which can use both visual and verbal channel distribute the load to two channels, decrease the cognitive load and support learning.

If the capacity of working memory is exceeded during the processing of information, cognitive load will occur. Cognitive load is defined as the pressure a specific learning job forms on the cognitive structure of the students (Sweller, van Merrienboer and Paas, 1988). Three types of cognitive loads are defined. They are *intrinsic cognitive load* which results from the learning content, *extraneous cognitive load* which results from instructional design and *germane cognitive load* which is caused by the processes which enable the formation and organization of mental schemas. Intrinsic and extraneous cognitive loads have an inhibitory effect, while germane cognitive load has a supportive effect on learning. The working memory capacity spent for extraneous cognitive load is decreased with an effective instructional design, the gap that occurs is assigned for germane cognitive load and thus mental structures can be formed more easily. With the formation of mental structures, cognitive load decreases in the next stage (Takır, 2011).

Cognitive Load Theory comes up with instructional design effects which aim to balance the intrinsic cognitive load and to decrease the extraneous cognitive load which results from the learning environment and thus to open up more space for the working load of the students. During the development of Cognitive Load Theory, various cognitive load effects have been put forward as a result of random and controlled experiments. These effects have generally been compared with traditional methods and their efficiency has been proved (Sweller, 2008). *Split-attention*, *modality* and *redundancy* effects were used in the preparation of the materials used in this study.

Split-attention effect emphasizes that cognitive load will increase as a result of the split of attention with the presentation of different information which appeal to the same perception channel of the working memory and states that this situation should be avoided (van Gevren, Paas, van Merienboer and Schmidt, 2006; Sweller and Chandler, 1994; Sweller, 2004). When

the information that has to be processed in visual channel exceeds the capacity of the channel, extreme cognitive loading occurs. In order to prevent this, some of the information that needs to be processes should be transferred from visual channel to the audial channel. Studies have shown that verbal presentation of the text instead of written presentation is more effective in learning. This situation is explained as the *modality effect* (Schnotz, 2005; Mayer, 2009). Studies have shown that verbal presentation of the text instead of written presentation is more effective in learning (Mayer and Anderson, 1991; Mayer, 1997; Moreno, Mayer, Spires and Lester, 2001).

One should avoid presenting a text that explains a visual both in written and verbal presentation. This is called *redundancy effect* (Chandler and Sweller, 1991). When both animation and written text are presented to students simultaneously, students' attention is split between animation and the text since both components appeal to the visual channel of the working memory. This in turn prevents the effective use of working memory and causes cognitive overload. In order to prevent this, it is recommended to use verbal presentation that appeals to visual channel instead of written text which uses visual channel (Kalyuga, Chandler, & Sweller, 1999).

In order to be able to make effective use of multimedia which has begun to be used frequently in learning process, the concept of cognitive overload, which is the leading problem experienced in these environments, should be understood and this problem should be solved. Mental load, mental effort and performance are three measurable dimensions of cognitive load (Paas & van Merriënboer, 1994). Mental load is the portion of cognitive load that is imposed exclusively by the task and by environmental demands. Mental effort refers to the cognitive capacity actually allocated to the task. Performance is a reflection of mental load, mental effort, and the above-mentioned causal factors (Kablan & Erden, 2008; Kirschner, 2002).

The purpose of this study was to compare the performance, mental load and instructional efficiency between the experimental and the control group. It was expected that the experimental group would require less mental effort and show better performance than the students in the control group. Therefore, it was assumed that instructional efficiency in the experimental group would be higher than the control group.

2. Method

2.1. Participants

The participants were 67 seventh-grade students (30 female, 37 male) from primary school in Ordu. They were attending science classes with the same curriculum. The subject of the experimental instruction was celestial bodies, chosen from the national seventh-grade science curriculum.

In this study, students were randomly selected and allocated to two groups according to the instructional materials. Control group studied the subject from course book and student book (31 students); experimental group studied from guided materials based on the Cognitive Load Theory principles (36 students). The subject of instruction was new to all participants and they were randomly assigned to two groups. The two groups were compared with independent samples t-test analysis according to their pretest performance scores on seventh-grade science test.

Independent samples t-test revealed no significant differences between the experimental and control groups for science test. Means, standard deviations and the p-value are displayed in Table 1. The p-value obtained indicated that the two groups were equal according to their pretest score.

Table 1. Independent samples t-test on pretest scores

Groups	N	$\overline{X}$	Ss	sd	t	p
Experimental	36	8.78	2.929	65	1.375	0.174
Control	31	9.84	3.387			

Note: maximum pretest score = 24.

2.2. Materials

Instructions for control group were carried out course book and student book by teacher and for experimental group instructions were delivered electronically using computer and projector by researcher. Firstly, researcher designed all computer-based instructional materials using "Adobe Flash Professional CS6". The subject of instruction was chosen from the seventh-grade national science curriculum and materials were prepared according to the objectives and content of the curriculum.

Celestial bodies subject are consist of five concepts: stars, constellations, comets, planets and meteorites and meteors. An animation is prepared for each concept. Subject completed by 12 practice animations after studying concept animations.

Computer-based instruction software was prepared to provide tutorial allowing students to learn at their own pace. Students can watch the animation, listen the audio again and again, and the move on to the next screen using the mouse when they want to.

2.3. Performance Testing

According to Cognitive Load Theory, performance is most often measured by a test taken at the end of the lesson or sometimes measured by the time required to complete a lesson or a test (Clark, Nguyen, & Sweller, 2005). In order to measure the performance of the participants, a multiple choice test consisting of 35 questions was used in the study. Items of the test must be dichotomously scored (0 for incorrect and 1 for correct responses). Reliability of the test was calculated using Kuder-Richardson formula 20 (K-R 20). The K-R 20 reliability of the test was found to be 0.83.

2.4. Subjective Cognitive Load Scale

In order to measure cognitive load that occurs on students' cognitive structure, a nine-point Likert-type scale developed by Paas and van Merriënboer (1993) was used. This scale accepted as a valid method for measuring cognitive load (Paas & van Merriënboer, 1994; Yeung, Jin, & Sweller, 1998; Kalyuga, Chandler, & Sweller, 1998). In this study, participants were asked "How much effort do you spend when studying the concept? Select your answer". The participants selected one of the nine options: "extremely little", "very little", "little", "relatively little", "neither little not much", "relatively much", "much", "very much", "extremely much". A mental load rating ranging from 1 to 9 was therefore collected from each participant. They were asked to rate the instruction they had just finished the subject.

2.5. Instructional Efficiency

Cognitive Load Theory is about instructional efficiency. According to Paas and Merriënboer (1993), it was important to consider the cognitive costs of learning. Efficiency is defined by the theory in terms of two variables: performance and mental effort. Efficiency (E) was

calculated by $E = (Z_{performance} - Z_{mental\ effort})/\sqrt{2}$ formula where $Z_{performance}$ represents the standardized (Z scores) test scores, and $Z_{mental\ effort}$ the standardized mental effort scores collected after the testing period. When using this formula, if Z scores for performance and mental effort are equal, efficiency is zero($E = 0$); if Z scores for performance higher than mental effort, efficiency is positive($E > 0$). Otherwise; if Z score for mental effort higher than performance, efficiency is negative($E < 0$). Instructions that result in higher learning outcomes with less mental effort are more efficient that instructions that lead to lower outcomes with greater mental effort.

2.6. Efficiency Graph

In order to visually represent the efficiency, efficiency graph is used like the one shown if Figure 1. Efficiency graph is a two-dimensional diagram in which average performance Z scores are plotted on the vertical axis and average mental effort Z scores are plotted on the horizontal axis. Point A indicates high efficiency which means high performance with low mental effort. In contrast Point B indicates low efficiency which means low performance with high mental effort. The upper left quadrant of the graph is considered the high efficiency area of the graph and the lower right quadrant of the graph is called the low efficiency area of the graph. The most efficient instructions are those that fall into the upper left quadrant of the graph, indicating instructions that result in high performance with low mental effort.

2.7. Design and procedure

The experiment was carried out in the computer lab for experimental group and classroom for the control group. Computer lab contains 25 IBM compatible computers, one projector and sound system. Because of the insufficient number of computers, the experimental group was divided into two groups consisting of 18 students. Rules and how to use computer-based instruction were explained to students before the instruction began. The length of two instruction period was 40 min. After completing the instruction, all students were asked to fill out the subjective cognitive load scale and then an achievement test was administered to measure the performance of the students. All students were tested individually and all tests were conducted in a single session.

3. Results

The obtained data were analyzed using independent samples t-test. The dependent variables were test performance score, subjective rating scale of cognitive load and efficiency. Means and standard deviations of variables are displayed in Table 2.

Table 2. Descriptive statistics on performance, and rating scale.

Variable	Group	N	Mean	Standard deviation	Standard error mean
Performance	Experimental	36	32.39	1.554	0.259
	Control	31	21.77	4.232	0.760
Rating Scale	Experimental	36	1.94	1.013	0.169
	Control	31	5.35	0.950	0.171
Efficiency	Experimental	36	1.130	0.422	0.070
	Control	31	-1.312	0.675	0.121

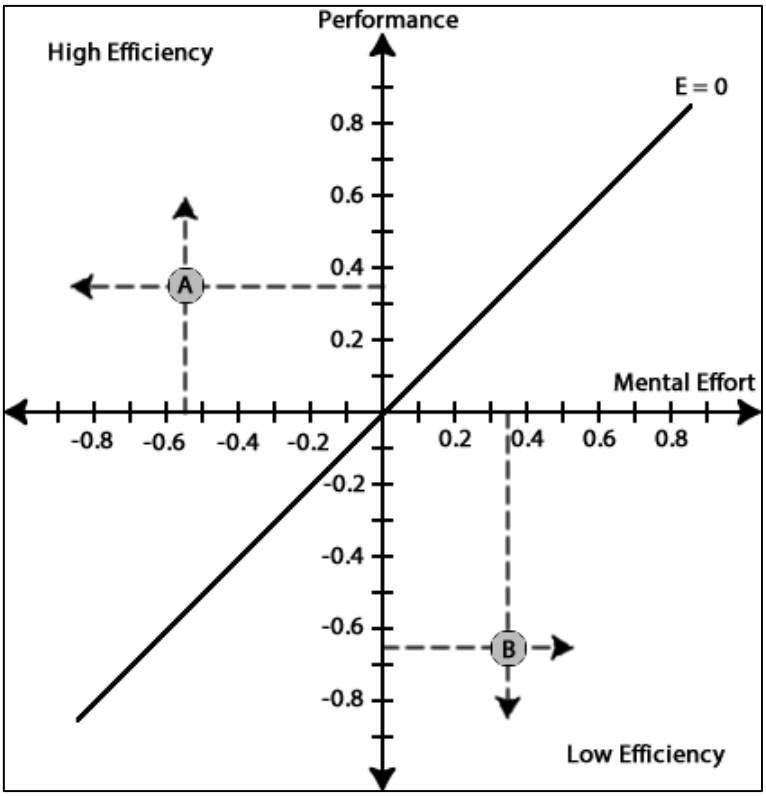

Figure 1. Efficiency graph.

3.1. Performance Testing

According to Cognitive Load Theory; if cognitive load on learners' working memory can be reduced during instructions then test performance of learners increase. Therefore, the authors expected that the experimental group should outperform the control group. The analysis revealed significant differences in test scores between the groups. The obtained p value indicated that the experimental group outperformed the control group (Table 4).

3.2. Subjective Rating of Cognitive Load

The authors had hypothesized that the experimental group would require the least mental effort to process the instructional materials. The analysis produced significant differences between instructional formats using subjective rating scale data. The obtained p value indicated that the experimental group required significantly less mental effort than the control group (Table 4).

3.3. Instructional Efficiency

Average performance Z scores, average mental effort Z scores and calculated instructional efficiency points are displayed in Table 3.

Table 3. Average performance Z score, average mental effort Z score and instructional efficieny point of groups.

Group	N	Performance Z score	Mental Effort Z score	Instructional Efficiency
Experimental	36	0.798	-.0800	1.130
Control	31	-0.927	0.929	-1.312

The authors had predicted that instructions that performed for experimental group was high efficient than control group. The independent samples t-test results revealed significant differences in efficiency between the experimental and the control groups. The obtained p value indicated that experimental group learned more efficiently than control group (Table 4).

Table 4. Independent samples t-test on performance, rating scale and efficiency.

Variable	Group	N	$\overline{X}$	Sd	df	t	p
Performance	Experimental	36	32.39	1.554	65	-14.01	0.000
	Control	31	21.77	4.232			
Mental Effort	Experimental	36	1.94	1.013	65	14.14	0.000
	Control	31	5.35	0.950			
Efficiency	Experimental	36	1.130	0.422	65	-18.01	0.000
	Control	31	-1.312	0.675			

3.4. Efficiency Graph

Figure 2 illustrates the results for instructional efficiency. The efficiency point of experimental group is located in the upper left quadrant of the efficiency graph (higher performance with lower mental effort), whereas the efficiency point of control group is located in the lower right quadrant of the efficiency graph (lower performance with higher mental effort).

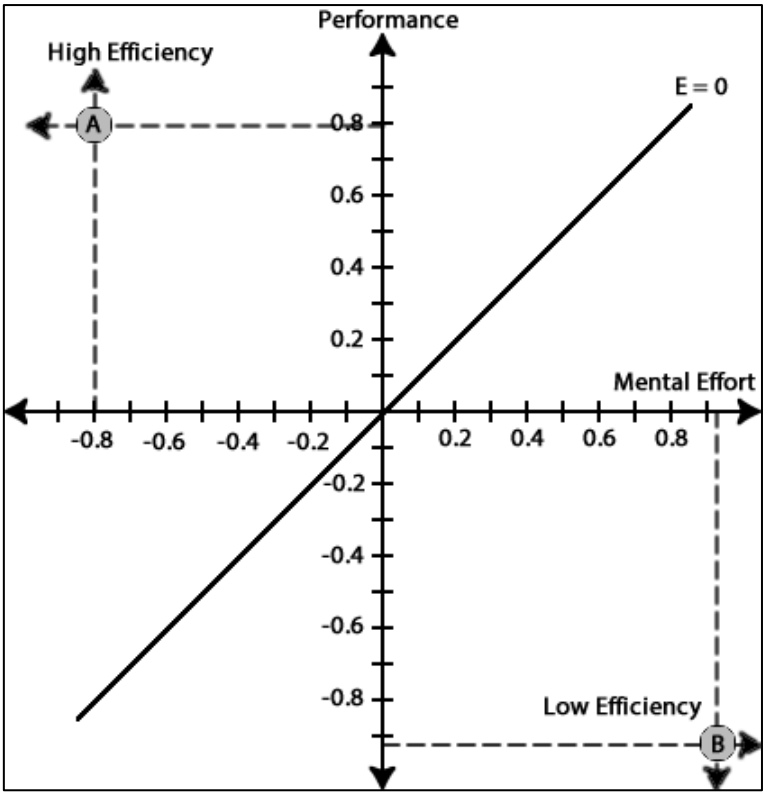

Figure 2. Illustration of efficiency points of groups on efficiency graph (A: Experimental Group, B: Control Group).

4. Discussion

In this study, the effectiveness of technology supported guided materials based on Cognitive Load Theory design principles related to celestial bodies subject on 7th grade students' were compared with respect to performance, mental effort and instructional efficiency between the two groups.

The first result indicated that the performance of the students in the experimental group was better than that of the students in the control group. It had been expected that successful mental integration of two different information sources (visual and verbal) during instruction should decrease extraneous cognitive load on working memory that improve test performance. Therefore, the students in the experimental group should outperform those in the control group. Students' performance was measured using a multiple-choice test, and the results showed that performance scores of the experimental group were significantly higher than those of the control group. Therefore, it is possible to conclude that students learn concepts better with technology supported guided materials based on Cognitive Load Theory design principles in science instructions. This finding is consistent with previous research (Kalyuga, Chandler, & Sweller, 2000; Tindall-Ford, Chandler, & Sweller, 1997).

The second result was that instructions with the experimental group required less mental effort than instructions with the control group. Cognitive processing of visuals and related text, including dynamic visualizations such as animations and simulations, involves the selection and organization of relevant elements of visual and auditory information distributing cognitive load on the two channels of working memory. This finding is consistent with previous research which showed that complex visuals are understood more efficiently when explanatory words are presented in an audio modality than when presented in a written

modality. (Mousavi, Low, & Sweller, 1995; Mayer & Moreno, 1998; Moreno & Mayer, 1999)

Finally, the third result was that instructional efficiency in the experimental group was higher than in the control group. Instructions that result in higher learning outcomes or performance with less mental effort are more efficient than instructions that lead to lower outcomes with greater mental effort. The result of this study showed that instructional design principles of Cognitive Load Theory increases instructional efficiency. (van Gog & Paas, 2008).

I this research, we try to develop narrated animations fostered meaningful learning without increasing cognitive load. However, additional research is needed to determine the role of individual differences in visual and verbal learning styles in influencing cognitive load.

Subjective rating scale of cognitive load was used to measure cognitive load in this research. Cognitive load can be measured by various methods. Additional researches would be useful to have direct measures of cognitive load.

In this research, level of learners' expertise was ignored. Using visuals with audio narration of text usually enhanced learning outcomes for students with low prior knowledge levels, but not for those with higher knowledge levels. Further researches would be needed to compare the effectiveness of Cognitive Load Theory design principles between the novel and more knowledgeable learners.

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Emancipation of the Dispossessed through Education

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ABSTRACT

Dispossessed of land, language and culture, Māori have struggled over the last century to regain these vital components of their spiritual, physical, emotional and mental being. Initiatives to revitalise the language and customs has been the focus for the past 40 years. Te Whare Wānanga o Awanuiārangi (TWWoA), a tribal University in Whakatāne Aotearoa is one of these initiatives that offer Māori students the opportunity to succeed as Māori. All programmes at TWWoA are underpinned with a Māori world view and epistemologies. The uara or values of TWWoA align with Kaupapa Māori Theory, that is, a theory creating space for Māori philosophies. These are, manaakitanga, whanaungatanga, pūmautanga, tumu whakaara, and kaitiakitanga. The values, the Māori worldview and the heutagogical practices of the teachers at TWWoA enable educational emancipation of students from various whānau (families), hapū (subtribes) and iwi (tribes) who come to TWWoA to succeed as Māori, with Māori values and beliefs. Educational emancipation refers to the educational freedom as Māori with our own epistemologies and educational initiatives like Kohanga Reo (Indigenous language nests), Kura Kaupapa Māori (Schools with Māori epistemological orientation), Wharekura (secondary schools) and Whare Wānanga (Indigenous Tertiary Institutions). This paper critically analyses the ūara (values) of TWWoA and discusses why these are important for the educational success of the dispossessed.

INTRODUCTION

Historically, Māori did not receive an emancipatory education, instead the educational options available post colonisation were fraught with western ideologies and values. The curriculum on offer did not encourage Māori students to further their academic careers, instead farming and home making were the options many Māori were encouraged to pursue (Simon and Smith, 2001). The dispossession of land, language and culture that followed the arrival of tauiwi (foreigners) to Aotearoa are still evident today and many Māori are left to search for their whakapapa (genealogy), attend courses at Universities and Whare Wānanga to regain their language and culture. During the post colonisation period from 1852 to 1867, Māori were powerless as a result of the Constitution Act of that time. According to Tawhai & Gray-Sharp (2011), dispossession was prevelant during this time as Māori were not permitted to vote or make decisions about any laws. Land, language and culture declined rapidly with the introduction of the Native Schools Act in the 1930s. Prior to this the medium of instruction in the Missionary schools was taught in te reo Māori (Māori language). According to Simon & Smith (2001) the bible had been translated into the Māori language and this was taught in the Missionary schools (p.159). The Native schools act had a devastating effect on Māori epistemology and worldview. As a result of the Tohunga Suppression Act 1907, Māori spiritual leaders were intellectually emasculated as they were longer permitted to practice traditional spiritual values and beliefs (Mead, 2003; Walker, 1990). The devastating effects on the traditional Māori way of life included land confiscation, language decline, health decline and culture. Waretini-Karena (2013) in his unpublished doctoral thesis highlights the intergenerational trauma experienced by Māori communities as a result of the effects of colonisation. Waretini-Karena (2013) refers to Dr Bruce Lipton's research on stem cell research conducted in 1967;

> The experiment of putting three stem cells into three different petri dishes and then changing
> the constituents of the environment to test the outcome on a celluar level brought forth
> an amazing discovery. The fact that one petri dish grew bone, another formed muscle, and the
> final dish grew fat cells lead Dr Bruce Lipton to conclude that at a cellular level genetics down
> control the environment, his test revealed that genetics respond to the environment
> (Waretini-Karena, 2013, p. 104).

This leads the authors to believe that we respond to our environments rather than being controlled and our responses to deprivation and dispossession have been internalised thus passing down intergenerationally.

Te Whare Wānanga o Awanuiārangi in Whakatāne is a tertiary provider that offers all students a range of programs to choose from for their tertiary education. Māori school leavers, young adults and adult returning students make up the student base at TWWoA. Māori andragogical and heutagogical principles are necessary for the educational emancipation of Māori adult students within this context. Teaching from a critical lens is important for all tertiary teachers including teachers at TWWoA as many of the students are adult returning students. Many of these students may not have had the positive educational experiences that all students deserve. Consequently, enrolment in the programs on offer at TWWoA is a second chance for many of these students. Similarly, the majority of the teachers at TWWoA are part of this group we call 'the dispossessed'so the dispossessed are the educators of the dispossessed. Many cultures believe

that in order to teach or research within an indigenous environment, one must be an 'insider' (see Berryman, SooHoo & Nevin, 2013; Brandt, 2013; Cleary, 2013; Mulholland & McIntosh, 2011;Smith, 1999). Being an 'insider' within an indigenous educational organisation means that shared experiences between student and teacher ensures that a high level of understanding of student needs and aspirations occurs. It is the authors belief that knowing and an intimate understanding of the dispossessed, of where they came from and where they intend to go ensures that the teacher can provide the necessary strategies to empower and encourage students. In other words, only the dispossessed can fully understand the holistic, spiritual and emotional needs of the 'dispossessed'.

In 2015 a set of Ūara (values/principles) were proposed and sanctioned by Te Whare Wānanga o Awanuiārangi Kaunihera (Council). The principles that make up the Ūara reflect many aspects of the Māori world view. The authors maintain that these Ūara are aspects of Māori life, they are a 'lifestyle' for many of the dispossessed or Māori who have been dispossessed of land, culture and language. The Ūara are not new concepts in te ao Māori (Māori world), instead they are part of the wairua (spirit), tinana (physical being), hinengaro (mental wellbeing) and whānau (family [values]). What are these Ūara and why are these so important for educating the dispossessed?

MANAAKITANGA

Our first Ūara is manaakitanga. In the Māori world, all principles are seen as one and are interrelated. Therefore the following explanations are interelated and do not exist in isolation. According to the first sanctioned Ūara in Te Whare Wānanga Prospectus (2016);

> 'Manaakitanga acknowledges our responsibility to give at all times with generosity and respect, and in a manner that is consistent with enhancing the wairua and mana (pride) of past, present and future. It is grounded in working with and for each other in the spirit of reciprocity and demands a high standard of behaviour toward each other' (p.4)

Mead's (2003) interpretation of manaakitanga is basically "hospitality" and this is applicable to "all social occasions" (p.120). The social occasions where manaakitanga is practiced include but are not limited to the home, the marae (meeting place) and schools or any learning environment. In any education setting manaakitanga is essential. Kura Kaupapa Māori (Schools with Māori epistemological orientation), Kohanga Reo (Indigenous language nests), Wharekura (Secondary schools) and Whare Wānanga (Indigenous tertiary institutions) are underpinned with this principle. Kura Kaupapa Māori have their own philosophical framework called Te Aho Matua. According to the Ministry of Education (2010), Te Aho Matua is "underpinned by a Māori worldview. Key tenets of a Te Aho Matua approach include a child is happy and stimulated, the importance of preparing a child for learning through settling the spirit, the application of whanaungatanga ie – aroha[1], manaakitanga, tuakana-teina[2], honouring kaumātua"[3] (p.17). Kohanga reo however are guided by Te Whāriki Curriculum document. Established in 1981 for the sole purpose of regenerating te reo Māori (Māori language) in a total immersion environment. In the report by the Ministry of Education (2010) called Te Piko o te Māhuri: The key attributes of successful Kura Kaupapa Māori, these key attributes included, "human kindness, care and respect", or manaakitanga (p. 4). However, it must be noted here that these

[1] Aroha = love.
[2] Tuakana/teina = Tuakana (older sibling of the same sex), teina (younger sibling of the same sex). Tuakana are placed by the teina to support and encourage learning.
[3] Kaumātua = elders.

attributes or values are not confined to the indigenous space, instead these are global values for many people regardless of race, colour or creed.

WHANAUNGATANGA

The next Ūara is Whanaungatanga. Whanaungatanga means to establish relationships. A brief interpretation of whanaungatanga is that it 'empowers and connects people to each other and the wider community'(Te Whare Wānanga o Awanuiārangi, 2016, p.4). Whakapapa (genealogy) is very important to Māori, whakapapa connects us to our whenua (land) and provides us with a tūrangawaewae (place to stand). Mead (2003) insists that whanaungatanga was and is a "fundamental principle" and extended "beyond actual whakapapa relationships and included relationships to non-kin persons who became like kin through shared experiences" (p.28). As previously mentioned the interrelationship between these principles sees whanaungatanga and the following principles as one. For example, caring for people means relationships are formed consequently resulting in oneness of spirit, mind and body. In an educational environment, educators / teachers are always connecting with their students and their whānau. At TWWoA, whānau members will often visit the students and share kai (food) with them and their kaiako (teacher). This is one example of whanaungatanga in action within Māori educational environments. A further example can be found in Māori customs surrounding the marae or meeting place. Māori gather at the marae for several reasons, for tangihanga (deaths), huritau (birthdays), hui (meetings) and hura kohatu (unveilings).

PŪMAUTANGA

The principle of pūmautanga follows and this is also synonymous with manaakitanga and whanaungatanga and could be interpreted as the ultimate work ethic at TWWoA. An interpretation by TWWoA is, 'Pūmautanga is to be steadfast and committed to doing the right thing in the right way, in all that we do with and for Te Whare Wānanga o Awanuiārangi (Te Whare Wānanga o Awanuiārangi Prospectus, 2016, p.4). All kaimahi (workers) at TWWoA who currently teach on Te Tohu Paetahi Ako (Bachelor of Education) are here on the understanding that student needs are paramount and that collectivism and the Māori world view is the philosophy that underpins all that they do. The commitment to TWWoA further extends to whānau (family), hapū (sub-tribe) and iwi (tribe). An intergenerational system is evident at TWWoA as the students enrolled will more often than not, had whānau members attend and graduate from the various programmes before them.

TUMU WHAKAARA

According to TWWoA (2016), 'tumu whakaara acknowledges that all staff at TWWoA are leaders, decision makers and the navigators of our journey' (p.4). Shared leadership amongst indigenous people is not new. For example, "shared leadership was the term used to describe how the teachers dispersed power in the classroom when the role of the teacher was shared with others" (Goulet & Goulet, 2014, p.213). Shared leadership is important when trying to reclaim the loss of language and culture in an indigenous educational environment. Aguilera-Black Bear & Tippeconnic (2015) state that to be successful at reclaiming and restoring, frameworks should include "shared leadership visions and strategic plans to establish a culturally responsive educational system and standards (p.198). However, leadership changes within these indigenous

organisations and when this happens new styles of leadership appear and the sharing of the leadership role could become difficult depending on the style of the new leader.

KAITIAKITANGA

And finally, kaitiakitanga acknowledges the unique obligations and responsibilities that Ngāti awa have as kaitiaki (guardians) of TWWoA (Te Whare Wānanga o Awanuiārangi Prospectus, 2016, p.4). The iwi (tribe) of Ngāti awa are the guardians over the Whakatāne area where TWWoA is situated and they are known as holding mana whenua or power over these lands. Kaitiakitanga is broad in the Māori world and from birth many Māori have this belief instilled in them. The belief is that we are mere guardians of the whenua (land), moana (sea) and in short, the taiao (environment). Many researchers hold this view about kaitiakitanga (see Cajete, 2000; Doyle, 2014; Lai, 2014; Mead, 2003; Thornberry, 2002). Ownership was promised in the Treaty of Waitangi, a document signed by Māori and the colonial government in 1840. However, Māori don't see themselves as 'owners' instead kaitiakitanga is the preferred term. Acknowledging an iwi (tribe) as the kaitiaki of an organisation ensures that non-Māori who are employed here understand how important the role of kaitiaki is and the significance of mana whenua. Te Whare Wānanga o Awanuiārangi is a tribal university and the student base are no longer confined to the Mataatua rohe (district). Students come from all over New Zealand, including internationally to attend TWWoA. Knowing ones place is important to promote respect for one another.

The context in which we teach we take students through a historical journey of discovery in order to awaken the sublimated trauma. Once awakened we start the educational process of healing through understanding. We do this through manaakitanga, whanaungatanga, aroha, pūmautanga, tumu whakaara and kaitiakitanga.

CONCLUSION

Values and beliefs are important for the emancipation of the dispossessed. It is a long journey for many Māori who enrol at Te Whare Wānanga o Awanuiārangi, having been born into a colonised world. The emancipatory education we provide at TWWoA is cathartic and healing for many adult students and staff. For many students, they leave Te Whare Wānanga o Awanuiārangi with a renewed sense of pride in themselves as Māori with an optimistic view for the future and a commitment to Māori education. Many of these students are leading productive lives within the Māori education sector in Aotearoa New Zealand. The research recorded by Waretini-Karena (2013) was important as it highlighted a scientific viewpoint that Māori responded negatively post colonisation and was indeed a leading factor for the over representation of Māori in deficit areas of justice, education and health systems, very similar to the experiences of other indigenous peoples globally. This paper has introduced the Ūara of Te Whare Wānanga o Awanuiārangi from the perspective of two senior lecturers on Te Tohu Paetahi Ako: Bachelor of Education. Further research in this area is recommended especially to ascertain whether or not the initiatives of Kohanga Reo, Kura Kaupapa, Whare Kura, and Whare Wānanga are continuing to make a difference lowering the deficit statistics of the over representation of Māori in the justice, health and education sectors.

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ENTREPRENEURSHIP EDUCATION FOR SELF RELIANCE AND ECONOMIC DEVELOPMENT IN NIGERIA

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Abstract

The Nigeria government introduced entrepreneurship education as a pathway to stimulate self- sufficiency, self-sustainability and self-support culture in students. The aim is to ensure graduates take advantages of personal resourcefulness to be self-employed. This is because entrepreneurship concerns the persistent pursuit of opportunities to create wealth through innovative creation of a product or service that meets customer's needs using scare resources in a way that results in a growth enterprise which satisfies the expectation of stakeholders whose roles sustain the business. Against this backdrop, therefore, the paper examines the concepts of entrepreneurship, entrepreneurship education and self-reliance. The paper equally examines the role of entrepreneurship education in self-reliance and economic development and highlighted the challenges for entrepreneurship education in Nigeria such as inadequate funding, lack of materials, entrepreneurship teachers among others. Finally, it recommends that the government should strive to release up to 26% of their annual budget for education as suggested by UNESCO.

Keywords: ***Entrepreneurship, Entrepreneurship Education, self-Reliance and Economic Development***

Introduction

Nigeria experienced a robust economy during the era of "oil-boom" in the 1970s. Then those who graduated from school were easily absorbed into the available job vacancies in the country. But all these changed in the mid-1980s, with worldwide depression and significant depression in the Nigeria's economy. This resulted in unemployment around the world, most especially developing countries such as Nigeria. The outcome of the high rate of unemployment was social vices like armed robbery and kidnapping for ransom. More recent is the global economic meltdown that led to youth and graduate unemployment to hit the roof. In this regards, various governmental and non-governmental organizations have initiated policies through support agencies such as National Directorate for Employment (NDE), the National Poverty Eradication Programme (NAPEP), Small Medium Enterprises Development Agency (SMEDAN), National Office for Technology Acquisition and Promotion (NOTAP), Raw Materials and Development Council (RMRDC) among others to address the problems of unemployment among Nigerian citizens (Olayinka 2010, Emmanuel 2012, Akluemonkhan, Raimi and Sofoluwe 2013). The aim of these programmes, agencies and councils was with the belief that the development of self-employment and small enterprise initiatives would unlock the economic potentials of the people increase the capacity to empower and equip individuals in society to participate and benefit from their national economy as well as facilitates economic development which forms the bases for transformation (Ekpo and Edet 2011 in Babatunde and Babatunde 2014). Admittedly, in line with the National Productively Day of 21st February, 1991 theme of "Productivity for Self-Reliance and Excellence", the Nigeria government introduced entrepreneurship education in schools as a pathway to stimulate self-sufficiency, self-sustainability and self-support culture in students. The aim is to ensure graduates take advantage of personal resourcefulness to be self-employed. This is because entrepreneurship concerns the persistent pursuit of opportunities to create wealth through innovative creation of a product or service that meets customers' needs, using score resources in a way that results in a growth enterprise which satisfies the expectation of stakeholders whose roles sustain the business. Entrepreneurship education provides knowledge, skills attitude and motivation to students for entrepreneurial success in any setting. It equips people with the ability to seek investment opportunities (Azonuche and Umeri, 2012).

Concepts Clarification

a. Entrepreneurship

Entrepreneurship is the ability to perceive and undertake business opportunities, taking advantage of scares resources utilization. Entrepreneurship is the process of creating something new with value by devoting the necessary time and effect assuming the accompanying finance psychic and social risk and reserving the resulting rewards of monetary and personal satisfaction and independence (Hisrich and Peters, 2002).

b. Entrepreneurship Education

Entrepreneurship education is a form of education that seeks to provide knowledge, skills, attitude and motivation to students for entrepreneurial success in any setting. It equips people with the ability to seek investment opportunities (Azonuche and Umeri, 2012). Entrepreneurship education according to Paul (2005) is structured to achieve the following

objectives:

- To offer functional education for the youth that will enable them to be self-employed and self-reliant.
- Provide the youth graduates with adequate training that will enable them to be creative and innovative in identifying novel business opportunities.
- To serve as a catalyst for economic growth and development
- Offer tertiary institution graduates with adequate training in risk management, to make certain bearing feasible.
- To reduce high rate of poverty
- Create employment generation
- Reduction in rural-urban migration
- Provide the young graduates with enough training and support that will enable them to establish a career in small and medium sized business.
- To inculcate the spirit of perseverance in the youths and adults which will enable them to persist in any business venture they embark on.
- Create smooth transition from traditional to a modern industrial economy.

c. **Self-Reliance**

Self-reliance is synonymous with self-sufficiency. It means doing things for ourselves rather than having things done for us. Self-reliance is the personal initiative in the ability and effort to identify, harness and manage effectively and efficiently the personal and collective resources, human or natural in the immediate surroundings in order to uplift one's or a people's life quality, standard and condition of existence (Olayiwola, 2012). He noted that self-reliance cautions against dependency-syndrome on the government as the monopoly of development. Self-reliance and its kin-terms accentuates people's primary role as principal agents of development and self- determination both on the individual and collective levels.

Entrepreneurship Education in Nigeria

The history of Nigeria educational system could be traced back to the colonial period. The educational system was tailored towards serving the interest of the colonial masters in terms of supplying manpower for their effective administration of Nigeria as a colony and protectorates (Alade-Komo, 2004). The policy was aimed at producing Nigerian graduate who could read and write to hold certain positions such as clerks interpreters, inspectors and so on. Without any entrepreneurial skills or professional skills to stand on their own or establish and manage their own ventures. The Nigerian industrial policy that came immediately after independence placed emphasis on the establishment of big companies while completely neglecting the development and growth of small scale sectors (Alade-komo, 2004). This together with the poor educational policy of initial stage no doubt led to the neglect of a foundation for entrepreneurship. This neglect invariably meant destroying entrepreneurship at the micro level in Nigeria at the very beginning, which is considered to be very essential for economic growth and development. The ever pressing demand for white collar jobs for majority of graduates is certainly an upshot of colonial educational policies.

In the mid-1970s, however, the federal government because of perceived importance of small scale industries to the economy, shifted focus and attention to the development of small scale sectors. Some industrial centers and some institutions were established to support the activities

of entrepreneurs in the country. Some of the institutions set up during this period include the Nigerian Industrial Bank (NIB), Nigerian Bank for Commerce and Industrial (NBCI), Nigerian Agricultural and Cooperatives Bank (NACB). The 1984 National Policy of education attempted to link the policy with the issue of self-employment and the industrial policy. The emphasis-on primary and secondary education. The higher education policy as stipulated was expected to produce graduates to cater for the introduction of scientists and technologists and absolutely not directed at self-employment, but for the few vacant positions in private (Multi-National cooperation's and government or public offices (Iniobong, 2013).

In order to overcome these short comings and in response to the current socio-economic problems of the country, particularly the problem of youth unemployment, questions were raised by various stakeholders as to what kind of education may be suitable in propelling development in the country- Many suggestions were made in favour of refocusing the current Nigerian educational system to reflect present realities. As a result technical and vocational education received a lot of attention at both the state and federal levels. To this ends different institutions were established to offer technical education. They included technical colleges, polytechnics, Colleges of Education, Vocational Schools and Centers in different parts of the country. In recent times, the most visible educational reform in the country is on higher education. Under this reform, Vocational Enterprise Institutions (VEI) and Innovation Enterprise Institutions (IEI) was introduced by the government to provide another dimension for Higher Education in Nigeria. The VEI's and IEI's are principally private institutions that offer vocational, technical, technology professional education and skill-based training at post basic (VEI) and post-secondary (IEI) levels to equip youths and working adults with employment skills knowledge to meet the increasing demand for technical manpower by various sectors of the nation's economy (Iniobong, 2013). This notwithstanding, many graduates still come out of Universities and other higher institutions of learning with the expectation to work for others and not for themselves. This perhaps may be traceable to lack of or inadequate finance and the will to take off on their own. The unprecedented increasing number of graduates without corresponding and unemployment generally has become a taking shop in the country. Thus, refocusing on entrepreneurial education has become necessary to make this increasing number of graduates self-reliant.

Entrepreneurship Education and Self-Reliance

Quality entrepreneurship education will enhance job creation which will subsequently reduce unemployment, poverty and social vices in Nigeria. This will also help to improve the standard of living; hence promote social economic and political development in Nigeria which is the cardinal objective of Millennium Development Goals (MDGs) (Maina, 2014). According to him, for recipient of entrepreneurship education to be a job creator rather than job-seeker, he might acquire essential basic skills and attitudes which will be enable him to function as an entrepreneur. Thus, entrepreneurship education would lead to self-reliance improves the quality of life and the general standard of living of the masses. It reflects in the following economic indicators such as Higher Profit Employers, more employment, Higher Productivity, Promotion of Innovative Technologies, products and services and increase in local sourcing of raw materials (Okoba, 2000). Therefore, for a country striving to attain self-reliance economy, its educational system should be designed to involve robust entrepreneurial curriculum. In order to achieve viable entrepreneurship education that will enhance self-reliance, education planning effort must therefore:

- Recognize the technological imperatives in modem industrialization and provide suitable arrangements for orientation of the labour force towards technology adoption;
- Ensure that the educational system is geared not only for quality, because high quality academic preparation is a prerequisite for the type of industrialization that will transform the nation;
- Eradicate imbalance in skill formation through meaningful attention to the enhancement of intermediate technical skills and artisanal training.

Entrepreneurship Education and Economic Development

Skills and knowledge are the driving forces of economic growth and development for any country. Countries with higher and better levels of skills adjust more effectively to the challenges and opportunities of world of work (National Skill Development Policy, 2009). Entrepreneurship education helps in developing skills that generate an entrepreneurial mindset and preparing future leaders for solving more complex, interlinked, test-changing problems, develop the human capital required for building the generations societies of the future. It serves as engine fueling innovation, employment generations, economic growth and social welfare (Schward, 2009). This is because entrepreneurship education tends to make the curriculum more functional. Functional curriculum, according to Esu (2010) is designed to teach students skills that will equip them to function as competent and accepted adults in the society. In this way, entrepreneurship education equips youths with passion and multiple skills to operate a successful business on their own (Izedonmi and Okafor, 2010).

Recommendations

1. The government should strive to release up to 26% of their annual budget for education as suggested by UNESCO. This enhances the provision of necessary materials, equipment and personnel needed for full implementation of entrepreneurship education in Nigeria.
2. A new and workable education policy should be provided that favour the smooth implementation of entrepreneurship education at all levels of education.
3. Government should ensure that there are adequate provision of materials, equipment and facilities for proper teaching of entrepreneurship skills in schools.
4. There should be adequate and robust entrepreneurship education curriculum/contents in teacher's education in Nigeria.
5. There should be properly re-training. Programmes for teachers on entrepreneurship education since they are the personnel that will implement the entrepreneurship curriculum.

Conclusion

An attempt has been made in this paper to highlight the insights of entrepreneurship education for self-reliance and economic development in Nigeria. The paper equally examined the concepts of Entrepreneurship, Entrepreneurship education, self-reliance and development. The lessons from entrepreneurship education in form of creating job for one's self, crime reduction, poverty reduction, and provision of the necessary means of economic growth and development were highlighted.

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Feedback on Undergraduate Students' English Communication Ability and Opinions from English Communication Placement Test and Questionnaire

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ABSTRACT

This study was conducted with the aims to investigate students' levels of English communication ability, explore their opinions toward the importance of English in different contexts, and needs for improving their English communication ability.

Participants were 301 first-year students from six majors from the faculty of Science and Arts, Burapha university, Chanthaburi campus in academic year 2014. Research instruments included the questionnaire and the English communication placement test. The quantitative data of students' questionnaire and English placement test was analyzed and calculated by the SPSS computer program by means of descriptive statistics, such as mean, percentage, and standard deviation, and inference statistics, e.g., ANOVA, and Duncan.

The findings revealed that the English communication ability of the majority of students was at an elementary level. The average scores were significantly different at 0.05 level. Additionally, it was reported that asking for personal information was the function that got the highest average scores. On the other hand, telephone conversation was the function that got the least average scores. About the findings from the questionnaire, it was found out that students revealed that English was highly important in future career, academic context, and daily-life communication, respectively. Female students rated the importance of English in three contexts higher than male students. For needs for improving English communication ability, students reported that they had moderate to high needs in improving English communication ability. Female students, similarly, had very high needs to improve their English communication ability compared to male students.

Key Words: English communication ability, placement test, opinion

With the upcoming of ASEAN Economic Community in 2015, teaching English in ASEAN community has been shifted from teaching English as a Foreign Language (EFL) to teaching English as a Lingua Franca (ELF) which stressed using English communicative competence appropriately and effectively in multilingual working environments (Crocco & Bunwirat, 2014). As a result, mastery in English proficiency provided better opportunities in communication, business, academic achievement, and professional advancement (Foley, 2005) The matter of fact that English is elected as the sole official language of AEC (ASEAN Economic Community) could do a favor for some ASEAN countries, such as Malaysia, The Philippines, Brunei Daryssalam, and Singapore. Unfortunately, the level of Thailand English proficiency was ranked at 55th place, as "a very low proficiency" level, from all over 60 countries where English was not used as the first language (English Proficiency Index (EF EPI), 2014), while neighboring countries as Indonesia and Vietnam are placed in "a moderate proficiency" level.

In several big cities in Thailand, English is frequently used in several domains besides education, for example, inter- and multi-national companies, IT, business organizations, international conferences, business transactions, investment, tourism, hospitality, and media.

Theoretically, Thai learners who have passed the formal education system are supposed to have foundation knowledge and skills in English; however, a lot of Thai undergraduates and new graduates are not aware of the significance of AEC which will have a direct impact on their job opportunities. Many students misunderstand the importance of English proficiency in their future.

Several Thai university students usually pay attention to courses related to their majors or future careers, but ignore English courses which they, themselves, think that they are not necessary in their career paths. Students do not realize that once the AEC is fully implemented, they have more opportunities to work in and/or cooperate with foreign companies and organizations or work with foreign colleagues, so that they need to use English as the corporate language.

Objectives of the study

This study intended to measure English communication ability of first-year undergraduate students, explore their opinions toward English communication ability in different contexts, and investigate their needs for improving English communication ability.

Methodology

There was a total of 301 students, different six majors, from the faculty of Science and Arts, Burapha university, Chanthaburi campus who participated in this study. Both placement test and questionnaire were administered in the second semester of the academic year 2014.

Two research instruments included 1) the English communication placement test with the test scores descriptor and 2) the questionnaire. The English communication placement test was developed from three remarkable sources including the Oxford Quick Placement test version 1.1, Cambridge University Quick Placement Test version 2, and Target Score Second Edition Final Practice TOEIC Test. As a result, there was a total of 80 test items provided in multiple choices. The test was divided into two main parts conprising 30 test items in a listening part, focusing on business communication. The other part focused on daily-life communication, 50 test items, divided into seven functions regarding daily-life situation, locations, personal information, suggestion, telephone conversation, opinion, and public signs (choosing places where one can find those public signs). The test scores descriptors table used in this study was developed based on the TOEIC test scores and conversation table and the Global Scale descriptions for the Common European Framework of Reference for Languages (CEFR) levels (council of Europe 2001: 24), to serve the level of the test takers' English communication ability. The table was divided into six different levels starting from beginner to advanced level.

For the questionnaire, it was designed based on one of the objectives of this study which aimed to explore students' opinions toward the importance of English in three contexts and students' needs for improving their English communication ability. The questionnaire was prepared in Thai for the purpose of facilitating the students' comprehension and preventing students' misunderstanding. Later on, all research instruments were tried out in order to ensure the reliability of the developed instruments that it matched the set research objectives. After that, research instruments were revised and adjusted based on comments and feedback.

Both English communication placement test and questionnaire were conducted by 301 students, divided into groups based on their majors, through the network of BUU called Learning Management System (LMS). On the test day, all 301 students were divided into three groups depending on their majors. Beginning with completing the questionnaire for five minutes, students, later, had 60 minutes to finish all 80 test items. After submitting the test online and waiting a few seconds, students would know their scores but not the level.

Afterward, the results of students' questionnaire and English placement test were analyzed and calculated by the SPSS computer program by means of descriptive statistics, such as mean, percentage, and standard deviation, and inference statistics, e.g., *t*-test, ANOVA, and Duncan.

Results

Findings regarded students English communication ability were presented in the following table.

Table 1: ANOVA Analysis of Variance of Students' English Communication Ability

	Sum of Squares	**df**	**Mean Square**	**F**	**Sig.**
Between Groups	1491.87	5	298.37	3.48	.005*
Within Groups	25321.65	295	85.84		
Total	26813.52	300			

Findings in Table 1 indicated that students' English communication ability scores of students from six different majors were significantly different at 0.05 level.

Mean scores of students' English communication ability in majors were presented in Table 2 below.

Table 2: Mean scores of Students' English Communication Ability

Majors	**Numbers of Students**	**Mean scores**	**S.D.**
EBC	16	43.19	9.93
AT	17	35.76	8.61
LBT	141	35.39	9.74
BA	87	33.61	7.55
IT	24	33.29	10.83
IS	16	31.94	9.41
Total	301		

Table 2 revealed that the scores of students in English for Business Communication major (EBC) were the highest with the gained scores at 43.19%, which could be classified in the pre-intermediate level, with S.D. 9.93**.** Gained scores of students in Agricultural technology (AT) and Logistics and Cross-border Trade Management (LBT) were the second and third highest at 35.76% and 35.39%, respectively, which were ranked in the elementary level. On the other hand, IS students made the least gained scores at 31.94%, also placed in the elementary level.

Findings regarded functions in the placement test were presented in Table 3.

Table 3: ANOVA Analysis of Variance of Functions in Students' English Communication Ability

	Sum of Squares	df	Mean Square	F	Sig.
Bet. Groups	301913.43	7	43130.49	82.19	.000*
Within Groups	1259501.80	2400	524.792		
Total	1561415.23	2407			

Data from this table showed that students' scores in each function were significant at .05 level, which meant students' English communication ability in each function was statistically different.

In-depth data concerning students' English communication ability in each function was clarified in Table 4.

Table 4: Percentages of the detailed Components in the Students' English Communication Ability Scores (Majors)

	AT	BA	EBC	IS	IT	LBT
1	34.12	34.71	40.42	31.27	35.56	32.87
2	54.3	47.66	63.46	47.12	46.79	52.10
3	64.71	56.32	81.25	63.75	56.67	65.11
4	63.53	61.38	82.50	61.25	60.83	67.94
5	39.12	39.66	40.63	30.21	31.25	39.95
6	36.47	29.2	51.25	25	31.67	30.92
7	46.08	47.13	62.5	43.75	45.14	51.77
8	51.18	44.48	58.75	45	45	50.57

Remarks:

1. Listening
2. Daily-life situations
3. Asking for locations
4. Personal information
5. Suggestions
6. Telephone conversations
7. Opinions
8. Public signs

According to Table 4.5, it could be concluded that EBC students, the major that gained the highest average scores, got the highest percentage was personal information, at 82.50%. Their second highest function was location, at 81.25%. Nevertheless, listening was the function that they got the lowest scores, at 40.42%. Their second and third least functions were suggestions and telephone conversations, at 40.63% and 51.25%, respectively.

For IS, the major that gained the least mean scores (at 31.94), the function that they received the highest percentage was location, at 63.75%. The second and third highest were personal information and daily-life situations, at 61.25% and 47.12%, respectively. On the other hand, the function that they gained the least percentage was telephone conversations, at 25 %. The second and third least belonged to suggestions and listening with 30.21% and 31.27%, respectively.

Considering students' opinions toward the importance of English communication ability in different contexts the findings were presented as follows:

Table 5: Mean Differences of Students' Opinions toward the Importance of English Communication Ability in Different Contexts

	Academic Context	Daily-life Communication	Future Career
AT	4.06	3.74	4.59
BA	4.11	4.00	4.56
EBC	4.13	4.44	4.81
IS	4.06	3.75	4.56
IT	4.08	3.88	4.38
LBT	3.84	3.57	4.43
	4.05	**3.85**	**4.56**

Findings revealed that students realized that English was highly important in their future career. At the same time, students, additionally, rated that English was moderate to highly important in both academic and daily-life communication.

Data regarding two genders toward the importance of English communication ability in three contexts was presented in Table 6.

Table 6: Mean Differences of Students' Opinions toward the Importance of English communication ability in different contexts and Genders

	Academic Context	Daily-life Communication	Future Career
Female	4.13	3.90	4.55
Male	3.70	3.52	4.41
	3.92	**3.71**	**4.48**

Data from this table revealed that both females and males rated that English communication ability was very highly important in all three contexts. This table, in addition, showed that females rated higher average scores regarding their opinions than males in all three contexts.

Findings concerned with students' needs were shown in Table 7.

Table 7: Mean Differences of Students' needs for improving their English Communication Ability

Majors	Mean differences of Students' Needs
AT	3.82
BA	4.17
EBC	4.44
IS	4.19
IT	3.75
LBT	4.17
	4.13

Findings pointed out that the gained scores of average of students' needs for improving their English communication skills was rated at 4.13, in a moderate to high level. Talking in majors, EBC was the major that rated their needs the highest, at 4.44 or the moderate to high level. The fourth and fifth were AT and IT, at 3.82 and 3.75 respectively.

Data in genders were presented in Table 8 on the next page.

Table 8: Mean Differences of Students' needs for improving their English communication ability in Genders

Genders	Mean differences of Students' Needs
Female	4.25
Male	3.92

This table showed that both female and male revealed that their needs to improve English communication ability were at a high level. However, when taking a look at genders, it could be seen that female students had slightly higher needs their improvement compared with male, between 4.25 (the high level) and 3.92 (the moderate to high level) respectively.

Discussion and Conclusions

Based on the findings mentioned in the previous chapter, the discussion will be declared in the following aspects:

5.2.1 Students' English Communication Ability

Although the findings revealed that EBC students gained the highest average scores in English communication ability, they were still in the same level as other four majors, the pre-intermediate level which meant their scores were between 14%-60% from the total scores. This insufficient difference could be the background in English ability of EBC students was limited, not outstandingly significant compared with other majors.

The findings, additionally, presented that asking for information was the function that the students gained the highest average scores; conversely, telephone conversation function gained the least average scores. This could be because asking for personal information is the function that always used in daily routines. It was also the function that possibly used in classroom activities. For the reason why students had difficulty with telephone conversation in English could be talking on telephone in English is a type of communication that the majority of students rarely have directed experience of even never experienced in their lives before.

2. Students' Opinion toward the Importance of English

The results from chapter four pointed out that students rated future career as the highest context. This issue was in accordance with the findings found in previous studies that claimed that English communication ability was apparently important in authentic workplaces in various aspects including recruitment, promotion, daily tasks, intimacy, and both internal and external communication in EFL countries (Barbara, et al., (1996), Mean, (2000), and Chew, (2005) cited in (Kassim & Ali, 2006); Ingram & Sasaki, 2003; Phang, 2006). This pointed out that students realized that English communication ability directly influenced their future profession.

However, the potential assumptions considering why daily-life communication was rated the least context could be the environment both in academic and daily-life in students' reality. Though Chanthaburi is one of the touristic provinces, the percentage of Thai tourists is higher compared with foreign tourists. Foreign tourists could be sometimes found in the center of Chanthaburi;

unfortunately, Chanthaburi campus has been located in a remote area, approximately 30 kilometres from the center

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From My Hands to Yours:
Pre-service Teachers' Empathy and Understanding of Exceptionalities

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Abstract

Within North America students with exceptionalities are integrated into the regular classroom environment. As such, pre-service teachers must be prepared to teach in an inclusive environment. To be successful in an inclusive classroom the pre-service teacher should possess empathy towards individuals with exceptionalities. This study defines empathy as the ability of an individual to understand and respond to the unique and affective experiences of an individual who has an exceptionality. A common method used to modify and develop pre-service teachers' empathy toward individuals who have an exceptionality is simulations. The current study examines the effectiveness of a seven-day simulation activity in developing 127 primary/junior pre-service teachers' empathy towards individuals with exceptionalities. Finding suggest that the simulation enabled the pre-service teachers to develop sufficient empathy to enable them to appreciate the strengths possessed by individuals with exceptionalities rather than focusing on their weaknesses. The pre-service teachers also realized that an individual's exceptionality is only one aspect of a person's life. Overall participants reported that the experience was very positive, that they gained insightful knowledge and felt they were more empathetic towards individuals who have exceptionalities.

Keywords: empathy; simulations; special education; pre-service teachers

In Ontario approximately 17% of elementary students and 23% of secondary school students are receiving special education assistance; of this, 83% will spend the majority of their day in the regular classroom (People for Education Report, 2015). Similar numbers are found in the United States with approximately 81% of American students with exceptionalities spending the majority of their day in the regular classroom (United States Department of Education, 2014). As such, it is essential that pre-service teachers be prepared to teach in a diverse and inclusive classroom. The purpose of the current study was to examine the effectiveness of a seven-day simulation activity in developing primary/junior pre-service teachers' empathy towards individuals with exceptionalities.

An essential attribute possessed by teachers who work in diverse and inclusive classrooms is empathy towards individuals with exceptionalities (Peck, Maude, Brotherson, 2014; Mauceri, Di Marco & Licciardello, 2012). Empathy enables teachers to understand, feel, communicate and respond to variations in students' perspectives; for it is through empathy that teachers foster inclusive practices and understand the behaviour and experiences of students with varying abilities and socioeconomic backgrounds (Peck et al., 2014; Tettegh & Anderson, 2007). Despite its importance, empathy has not been well researched, perhaps in part because empathy is difficult to define (Broomhead, 2013). In its simplest form, empathy has been defined as the response of one individual to the experiences of another (Dvash & Shamay-Tsoory, 2014; Tettegh & Anderson, 2007). For the purpose of this study a more specific definition will be used. Empathy is defined as the ability of an individual to understand and respond to the unique and affective experiences of an individual who has an exceptionality.

It is important to note that empathy is not interchangeable with sympathy or pity. Sympathy is a vicarious emotional reaction based on the apprehension of another's emotional state of a situation resulting in the feeling of care and concern for someone accompanied by a wish to see the person better off or happier (Cuff, Brown, Taylor & Howat, 2014; Burton, 2015). The distinguishing factor between empathy and sympathy is that sympathy drives the observer to take action to alleviate a person's suffering (Baron-Cohen & Wheelwright, 2004). Within the classroom setting, it is important that teachers do not view individuals who have exceptionalities as suffering from an infliction that must be alleviated. Therefore it is empathy, not sympathy, which enables a teacher to understand an individual's emotional and cognitive state so that accommodations and modifications to the curriculum can be made. Pity, on the other hand, is the feeling of discomfort at the distress of another and often has paternalistic or condescending overtones (Burton, 2015). A teacher who feels pity for a student may be less likely to implement affective programming for a student because they may view the challenges of an exceptionality as being a burden that cannot be overcome. For example, the teacher may offer more constant assistance than the student requires thereby by sending low-ability cues to the student (Clark & Artiles, 2000). Overall, pity is less engaged that empathy or sympathy, as it is little more than a conscious acknowledgement of an individual's plight (Burton, 2015).

Empathy can be best understood through the examination of its three main components: sensitivity, cognitive and inhibition. Sensitivity is an affective response to another person, which can include the sharing of the person's emotional state (Decety & Jackson, 2004; Dvash & Shamay-Tsoory, 2014). Thus, sensitivity occurs through a person's ability to temporarily identify one's self with another person's life and share one's ideas and emotions (Baron-Cohen & Wheelwright, 2004; Klis & Kossewska, 1996). Within the sensitivity component Baron-Cohen and Wheelwright's (2004) four forms of affective empathy exist: 1) The feeling of the observer matches that of the person observed; 2) The feeling in the observer is similar to, but does not exactly match that of the person observed (e.g., feeling pity for a person's sorrow); 3) The feeling in the observer does not match that of the person observed (e.g., an observer feeling pleasure at another's pain); 4) The feeling in the observer is one of concern or compassion to another's distress. Therefore, in terms of sensitivity, empathy is a teacher's emotional response to a student's feelings. On the other hand, it is the cognitive component of empathy that enables a teacher to identify, evaluate and understand a

student's perspective (Baron-Cohen & Wheelwright, 2004; Decety & Jackson, 2004; Klis & Kossewska, 1996). Through the act of role-taking, assuming another person's perspective, and non-egocentric responses an individual sets aside their personal perspective in order to infer the mental and/or emotional state of another (Baron-Cohen & Wheelwright, 2004; Dvash & Shamay-Tsoory, 2014). Hence, the cognitive approach to empathy enables an individual to make predictions regarding another person's emotional and mental state. Finally, the inhibitory component of empathy involves the use of a regulatory mechanism to keep track of the origins of self- and other-feelings (Decety & Jackson, 2004). Through inhibition an individual is able to evaluate another person's perspective by adjust and regulating one's personal perspective. In other words, inhibition enables the regulation of the affective and cognitive components so that the observer does not experience severe emotional distress.

Since empathy plays an important role in the classroom, Mauceri et al. (2012) believe that pre-service teacher training must focus on developing the sensitivity and cognitive capacities of empathy in order to foster positive feelings within the interactions between teachers and students with exceptionalities. Research suggests that providing pre-service teachers with opportunities to cultivate empathy may increase the quality of student-teacher interactions (Leo & Goodwin, 2014; Peck et al. 2014; Maurceri et al., 2012). Specifically, teachers who are able to empathize with their students are able to improve student motivation, academic performance and student behaviour (Broomhead, 2013; Cruz & Patterson, 2005; Peck et al., 2014). As Peck et al. (2014) found "teachers who made empathic statements reported more successful partnerships with parents and a finely attuned understand of the behaviour in their classrooms" (p. 8) and were able to use their empathic inferences to develop appropriate pedagogical practice for inclusion. It may be inferred, therefore, that empathic teachers may be more successful because they are able to recognize their students' strengths rather that focusing on their weaknesses (Peck et al., 2014). In order to foster positive interactions between teachers and students with exceptionalities, teacher-training programs need to look beyond competency testing and content knowledge to include a focus on the capacity to care (Hong, Ivy & Schulte, 2009).

A common method used to modify and develop pre-service teachers' empathy toward individuals who have exceptionalities is simulations (Colwell, 2012; Leo & Goodwin, 2013; Stamou & Padeliadu, 2009). Simulations are an instructional processes that imitate a system, entity, phenomenon, or process for the purpose of gaining information, clarifying values, understanding others or developing a skill (Cruz & Patterson, 2005; Lean, Moizer, Towler, & Abbey 2006). Overall, simulations provide pre-service teachers with the opportunity for experiential learning that requires them "to integrate and make sense of the meanings embedded in their experiences and knowledge" (Leo & Goodwin, 2013, p. 460). The objective of exceptionality simulation activities is to enable pre-service teachers to develop favourable attitudes towards people who have an exceptionality, empathetic responses to exceptionalities, and insight into the issues of inclusion (Lean et al., 2006). Therefore, through kinaesthetic and affective simulations pre-service teachers are provided with the opportunity to learn by doing, feeling, analyzing and reflecting thereby developing attitudes of emotional decentralization and the ability to enter the private perceptual world of others (Cruz & Patterson 2005; Mauceri et al., 2012).

Simulations of exceptionalities are often used because they reportedly (a) facilitate interaction among participants, (b) provide opportunities to practice decision-making skills and resulting behavioral consequences, (c) convey important social messages regarding inclusion, (d) facilitate exploration of personal values and attitudes, and (e) foster empathy and insight regarding events and issues being simulated (Herbert, 2000; Leo & Goodwin, 2013). Research has found that pre-service teachers who participate in simulations had a more positive attitude toward mainstreaming students with special needs (Colwell, 2003). Specifically, simulations helped them to develop a basic understanding of the difficulties faced by individuals' with exceptionalities (Colwell, 2003) as well as a greater level of sensitivity, awareness and compassion towards

individuals with exceptionalities (Colwell, 2003; Wadlington, Elliot & Kirylo, 2008). Overall, pre-service teachers indicate that simulations help them become an effective educator (Wadlington, Elliot & Kirylo, 2008).

In spite of these potential benefits, research also suggests that the use of simulations does not necessarily result in the fostering of positive attitudes, but rather negative views such as displeasure with self, embarrassment, frustration and reliance on others (Herbert, 2000). Furthermore a simulation of an exceptionality does not enable the participants to truly perceive the skills and dexterities possessed by individuals who have an exceptionality (Stamou & Padeliadu, 2009). Instead, simulations portray individuals with exceptionalities as victims or heroes (Leo & Goodwin, 2013; Stamou & Padeliadu, 2009). Finally, simulations are criticized for not addressing the social aspects of an exceptionality (Leo & Goodwin, 2013; Stamou & Padeliadu, 2009). These negative affects may be tempered through the combining of disability simulations with courses pertaining to disabilities, such as special education, discussions with persons with disabilities and reading/viewing material related to disability issues (Herbert, 2000).

This study aims to address some of the major limitations found in previous research. First, there is a lack of research citing evidence that simulations effectively alter the attitudes and behaviours of participants or that the participants develop an awareness of the coping strategies utilized by individuals with exceptionalities (Colwell, 2012). Second, as Colwell (2003) indicates simulations often fail to include the public venue. This study addresses this limitation by providing pre-service teachers with the opportunity to conduct the simulation during daily activities such as grocery shopping. Third, while many simulation activities have short durations (e.g., Colwell, 2012; Leo & Goodwin, 2013; Stamou & Padeliadu, 2009), the simulation used in the current study current spanned across an entire week. By using qualitative methodology the following research question will be addressed: Does the use of a simulation assignment help develop pre-service teachers' empathy and understanding of exceptionalities?

Methodology

Participants. The participants were pre-service teachers enrolled in a small northern Canadian university's one-year Bachelor of Education degree program. All of the 127 participants were in the primary/junior division. A convenience sample was used because all of the primary/junior pre-service teachers had participated in the simulation activity and written a reflective essay based on the simulation activity. The participants were recruited on the last day of their compulsory, 36-hour special education course to ensure that all of the participants' required assignments have been marked and returned to the participants. Of the 157 pre-service teachers enrolled in the four sections of the primary/junior division 127 consented to participate in this study. The majority of the participants were female (n = 109; male n = 18), which is representative of the program and 14 of the participants (female = 11; male = 3) identified themselves as having an exceptionality.

On the last day of class, the researcher, who was also the instructor of the course, verbally explained the purpose of the study, the students' freedom to decline participation and requested that their reflective essay be used as research data. The researcher then left the classroom and a graduate student reiterated that participation was not a requirement of the course, they were free to decline to participate, and that the professor would not have access to the consent forms until marks for the course had been submitted to the registrar's office. The graduate student then distributed the consent forms, collected the consent forms and placed the consent forms in a sealed envelope. The graduate student gave the sealed envelope to a professor who was not affiliated with the study. This professor kept the consent forms in her office until all marks for the course were submitted to the registrar's office in May 2015. Once the marks were submitted to the registrar's office, the researcher obtained the consent forms from the professor. Upon receiving the consent form, the researcher matched the

consent form with the electronic copies of the reflective essays on the researcher's computer. The essays of the students who denied consent were deleted from the researcher's computer.

Simulation. Herbert (2000) suggests that when using a disability simulation it is important for the learner understand the purpose of the simulation. Therefore, prior to beginning the simulation activity all of the students had completed six weeks of teaching practicum experience in elementary schools and written mock individual education plans for students with exceptionalities. In addition, prior to commencing the simulation activity both the course syllabus and the professor outlined the purpose of the simulation. Finally, during the week of the simulation, the participants were learning about learning disabilities and had an opportunity to listen two individuals with exceptionalities discuss their personal experiences. All of these learning opportunities reinforced the purpose of the simulation.

On the first day of the second term, the participants were given an assignment for the compulsory special education course that required the pre-service teachers to wear mittens 24 hours a day for a period of one week, including the weekend. The participants' could wear any type of mittens (not gloves), provided that they were not form fitting. The participants were to wear the mittens at all times (i.e., at night in bed, showering, shaving, making a meal, at the bar, buying groceries, in class, on the bus, etc.). The only time they were to remove the mitts was for using the washroom and in any situation where the participant deemed it unsafe to wear the mittens. In addition, one of the students who had a physical disability spoke to each class about the importance of the assignment as it related to his personal challenges. Following Heyman's (1975) advice that the facilitator should "run the simulation not the learners" (p.21). The professor introduced the activity to the classroom, including the objectives and then did not interfere with the students' experience. This enabled the learning to stem from the simulation rather than from the professor. As with Leo and Goodwell (2014) the professor did not have control over the learning environment once the student left the classroom. To help monitor the participant's use of the mittens, each participant was randomly assigned a secrete monitor who rated the amount of time the participant wore the mittens. This was done to help ensure that the participants wore the mittens; however, the monitor was not able to watch the participant all of the time (e.g., within the home environment).

Upon completion of wearing the mittens for one week, the participants were required to write a reflection paper. The participants were provided with the following guiding questions to assist with their reflection: How did this simulation affect your perception of self? How did it affect your perception of exceptionalities? What are your thoughts/feelings entering your next practicum? How will this experience impact your teaching? The reflective essay was marked and returned to the pre-service teachers prior to the recruitment process. This procedure was followed for three main reasons: first, to help control for bias in the marking of the assignment by helping to ensure that the professor was not influenced by the objectives of the research study when marking the assignment. Second, to help control for response bias by ensuring that the participants were not writing their essays in an attempt to met the objectives of the study. Finally, to ensure that the participants' marks would not be influenced by their consent to participate in the study.

Data Analysis

A qualitative approach was used to analyze the participants' reflective essays. Qualitative methodology is particularly appropriate for examining the effect of a simulation activity on pre-service teachers' empathy and understanding of exceptionalities as the focus is on the participants' experiences, as well as on the meaning that they assign to various aspects of those experiences (e.g., see Bogdan & Biklen, 2002). When analyzing the essays a whole text narrative analysis was used. That is, after a thorough reading of the essays, a line-by-line approach was used to identify segments of the text that reveal an aspect of the phenomenon being investigated; such as, elements of the narratives (e.g., setting, events, relationships); themes; and the larger cultural narrative of disability (Lean et al., 2006). Coding categories consisting of a brief phrase were assigned to each excerpt to capture its meaning. The coding categories was modified throughout the analysis as new categories and subcategories evolved.

Findings

Almost all of the participants began their reflection essay by commenting on the emotional impact of the assignment. The emotions expressed by the participants were negative and included frustration, embarrassment, humiliation, discomfort, and helplessness. Two of the participants who had exceptionalities had particularly strong emotions. One of the participants who had an exceptionality indicated that experience made her feel incompetent and another participant, who indicated that she had anxiety issues, found that the activity increased her anxiety.

> At first it was unusual and fun at times, but towards the end of the week I felt defeated, tired and slow.
>
> I slowly started to feel helpless with only a few hours into my first day of wearing mitts.
>
> Wearing the mittens was more frustrating then I imagined it would be and had me feeling insecure. It felt like people stared when I struggled and simple tasks like making dinner became very difficult. I felt trapped wearing the mittens and could not wear them 100% of the time as I found it very mentally draining to constantly struggle. I didn't have the mental strength to constantly struggle but for those with exceptionalities, they don't have the choice to take their mittens off.

Due to these strong negative emotions, some of the participants began to avoid situations that would trigger these emotions. Activities that were avoided were both public and private activities. The public activities included grocery shopping and working out in the gym. The private activities included personal hygiene, meals, and clothing.

> When I got dressed in the morning during the week of the assignment, I avoided all my button up blouses because I lacked the capability of being able to button them up on my own.
>
> I think that feeling like people were always watching me with my mittens made me avoidant of public situations. If I didn't have to leave the house throughout the week, I wouldn't.

Another category that arose pertained to the impact that the simulation had on their daily routines. Many of the participants reported that they were surprised at how quickly their lives became impacted by the activity. Through this realization the pre-service teachers were able to acknowledge not only how an exceptionality can impact a student beyond the realm of the classroom, but also how the impact affects students performance and behaviour in the classroom.

> My greatest struggles I found were with things like turning pages in books, preparing meals, doing my hair, putting on jewellery, getting dressed etc., all of which are daily actions for me. These struggles really made me appreciate the amount of effort some individuals have to put into everyday tasks and why there may not be enough effort left for other things like school.
>
> Grocery shopping posed a very large challenge not only because I struggled with fine motor skills to buy an item such as broccoli and put it into a bag, but also paying for the items required assistance from others. I had to ask the grocery clerk or someone behind me to help me take the card out of my purse to pay. I will definitely have more patience for those people who take their time in a line because they need some extra assistance. I will also be more willing to offer an extra hand if they need one in the future as I am beginning to understand what they are going through everyday.
>
> Simple tasks become extremely difficult and frustrating. Something as simple as getting dressed in the morning became a lengthy and exhausting process. This experience affected every aspect of my daily life. I had to make sure I got up early enough in the morning because my normal routine took twice as long. I had to plan ahead for simple things such as paying for my morning coffee. Using a laptop and cellphone became nearly impossible because of the restriction of the mittens

Since the simulation impacted the participants' daily routines the participants began to use accommodations. All of the students, as part of their special education course, had learned about the importance of accommodations, the types of accommodations, and why accommodations are provided to students with exceptionalities. However, once the participants personally experienced the need for accommodations, they began to truly understand how accommodations enhance a student's learning and self-perception.

> During the mitten assignment I was required to be creative on several occasions in order to accomplish daily tasks. For example, I used a mouse with my laptop because the touch pad did not work with mittens and HB pencils (eraser end) were used for typing. In my classroom, when I encounter a student with an exceptionality, I will apply that same creativity to find ways to facilitate my student's learning.
>
> While wearing the mitts I realized how I was successfully able to still use technology by using voice to text software, and electronic pens to work my devices. When I was able to use the voice to text software on my technology, I for once felt I was not so helpless. As an educator I will continue to incorporate advancing technology for my students with exceptionalities as it provides students with a chance to work to the best of their ability and not feel so frustrated.

A fifth category that was addressed in the participants' reflective essay was the judgement they felt from the general public. The participants reported that they felt fairly comfortable wearing

the mittens at school because so many of them were participating in the activity. However, when they were away from the university and their peers they felt like they were constantly being judged.

> Although completing tasks was very difficult I found that how people treated me might have been the worst struggle. I found I was irritating people with being too slow and found many people were staring at me. Many students questioned me on why I was wearing mittens and having to explain myself every time started to get very frustrating.
>
> During the week, I ended up having to go to the grocery store twice and both times I felt like everyone around me was watching me and judging me because I was wearing mittens. The worst was in the produce section trying to open the plastic bags to put my vegetables in. I stood there for awhile getting frustrated trying to open the bag with my mittens and I felt like everyone around was just staring at me wondering what I was doing. I felt like I was being judged and made fun of, all because I had my mittens on. I felt vulnerable and helpless. I felt so embarrassed that I took my mittens off quickly to open the bag to stop the stares. Once I had the bag open, I put my mittens back on to continue my grocery shopping. However, those with exceptionalities cannot take something off quickly to not feel embarrassed and to stop the stares when completing a task. Those with exceptionalities have to live through this each and every day.

The participants who had an exceptionality also commented on the judgement that they experienced. Their reflections focused on how readily people judge a person's ability based on their exceptionality and how quickly limitations are put upon them. One participant also commented on how they began to judge themselves.

> The mitten project was not only the physical limitations placed upon us, but equally important were the social barriers it represented. Wearing the mittens where they didn't belong resulted in strange stares and awkward questions—something I have dealt with for years. All my life, I have always had the problem of people seeing me as a disabled person, not a person with an exceptionality. Countless times I have had people tell me they are surprised by how intelligent I am. As if someone's intelligence is somehow influenced by a physical impairment. Indeed, even neurological and psychosocial exceptionalities often have nothing to do with true intelligence
>
> In my own experience with my invisible disability, people are less understanding when they do not know what is happening because cannot see physical evidence of a disability. It seems to me that the people who helped me (with the debit machine at the cafeteria, for instance) were understanding and helpful because they could see my disability, and possibly because they figured that I did not have a "real" disability – I was a "normal" person, "like them", who was just wearing mittens. My experiences of the past week confuse me because they contradict my personal experiences; I know for a fact that people are not always accommodating when it comes to disabilities, especially outside of a progressive university environment.
>
> My ADD is not always obvious to everyone and I can sometimes hide or cover up aspects of it. Where as, a physical exceptionality is evident to everyone around him or her. On several occasions, especially while in public (grocery store, school) I found myself constantly judging myself (probably more than the others did) and worrying

about holding others up at the cash or about how others were judging me. As a result, I discovered myself explaining to other what I was doing and apologizing for taking longer. The looks, glares, rolling of the eyes, and sense of judgment all were observed from others around me and even though I do not have an everyday physical struggle, I sure felt what some of these people go through.

A sixth category is the connection between the simulation activity and students with exceptionalities. By making this connection the participants were demonstrating the cognitive component of empathy because they were demonstrating their ability to identify, evaluate and understand the perspective of an individual with an exceptionality. This is demonstrated by the participants' ability to make predictions regarding the emotional and mental state of an individual with an exceptionality.

This mitten experience allowed me to consider how some students in my practicum may have felt. I had a handful of students with exceptionalities in the kindergarten classroom that I was placed in. At the time, I would have difficulty adapting my lessons to properly suit their needs. Now, I can understand that these students were equally frustrated, and had so many more challenges to face on a day-to-day basis.

It was insightful to see what students with exceptionalities are dealing with internally but I also experienced the emotional stresses from outside sources. When I was getting ready one morning, one of my little brothers laughed at me and my other siblings were starring at me as I tried to do something that should have been a simple task. My family members were also frustrated and told me to hurry up because I was taking too long to get ready. Although I took no offense, I believe that a student with exceptionalities experiencing these pressures from people they do and do not know would feel extremely uncomfortable. Overall, I gained insight to what students with exceptionalities are dealing with emotionally.

I think that this had a profound effect on my view of exceptionalities. I have a much more real understanding of avoidance, and why students who are faced with an exceptionality would want to avoid difficult situations. I saw a few examples of this while on placement. I was placed in a grade two classroom, and while only one student in the class had been identified and required an IEP, many of the students would use avoidance when they did not think they could effectively complete a task. An example of this would be, a student having a math assignment to complete, and instead of sitting down and getting to work, wandering around the room to sharpen pencils, visiting the washroom, and distracting other students in the class.

One of the criticisms of simulations is that they do not accurately reflect the experiences of individuals with exceptionalities. A few of the participants who had exceptionalities commented on the relationship between the simulation and their personal experiences. The main commonality between the simulation and their personal experiences was how having an exceptionality affects all aspects of their lives. Interestingly, this is one of the connections that the typically developed participants learned as a result of the simulation.

This assignment was important to me because I have an exceptionality that effects my everyday life. While it is not visible it is very real, and very tiring. I cannot get rid of my OCD, I can only adapt to it. Some things will always take me longer than

> they take other people. Some people might not understand my exceptionality, or take me seriously. These feelings were all heightened by this assignment.

In contrast, two participants who had an exceptionality reported that the activity did not reflect their personal experience of having an exceptionality. Their comments support the argument that simulations cannot provide a realistic representation of an exceptionality.

> The mitten assignment could not teach me what it feels like to have other people judge someone you love. While I was teased mercilessly as a child for having so many issues it is nothing in comparison to how I feel when someone treats my mother badly or when someone tries to discriminate against my mother.

> The mitten assignment was a challenging task but if I were being honest with myself then I would have to say that I did not learn anything new. Throughout my life I have had multiple experiences that have had a deeper and more meaningful impact on myself than this assignment has.

Overall both the participants who had an exceptionality and those without an exceptionality found that the simulation was beneficial.

> Wow! What a meaningful learning and teaching activity. Personally, I found this assignment to be very valuable and it helped to put many things we educators face into perceptive. As an individual with ADD and difficulties in reading and writing, I was excited and motivated to complete this activity for several reasons. First, I was up for the challenge of experiencing the physical side of exceptionalities both at home and at school; secondly, I was interested in seeing how others (without an exceptionality) felt before, during and after the assignment; and finally, I was hoping to feel understood and accepted a little more by those who don't experience a personal exceptionality on a daily basis.

Discussion

The purpose of the current study was to examine the effectiveness of a seven-day simulation activity in developing primary/junior pre-service teachers' empathy towards individuals with exceptionalities. By providing the pre-service teachers with a week to experience an exceptionality it provided sufficient time for the pre-service teachers to overcome their initial negative emotions of frustration and embracement and move towards more positive emotions. By experiencing a range of emotions the participants were able to enter into the sensitivity state of empathy. Furthermore, the participants, without interference from the professor, moved from the sensitivity state of empathy into the cognitive. Specifically, the participants were able identify, evaluate and understand the challenges faced by individuals who have an exceptionality and identified strategies for addressing such challenges should they occur in the classroom.

In addition, since the pre-service teachers were able to transition from the sensitivity state to the cognitive state of empathy, the pre-service teachers moved beyond a succumbing framework (the focus on what the individual cannot do) to a coping framework (a solution-focused approach) (Herbert, 2000; Wright, 1983). This was demonstrated by the fact that many of the pre-service teachers began the simulation experience by relying on others to complete tasks for them (e.g., zipping up a jacket). As time progressed, they gradually moved towards independence through the development of coping strategies and accommodations. This enabled the pre-service teachers to realize that just because an individual may have to approach a task in a different manner, it does not

mean that they are less capable or that they are suffering. It also helped to illustrate that when provided with the required supports and opportunity individuals with exceptionalities can be self-reliant.

As the simulation in the current study extended a full week and included all aspects of an individual's life it provided the pre-service teachers with the opportunity to "find solutions to problems, not to remain with stuck them" (Wright, 1983, p. 463). This realization demonstrates that the participants experienced the inhibition phase of empathy, which requires that they adjust and regulate their personal perspective. For example, through the realization of how an exceptionality impacts an individual's life, the participants gained an understanding of the importance of accommodations. Accommodations are sometimes viewed as an unfair advantage provided to a limited number of students (Berry, 2010; Elhowerls & Alsheikh, 2010) or as an automatic accompaniment to an exceptionality. Through the use of a simulation the pre-service teachers were able to develop a greater understanding and appreciation of the fact that accommodation are about equity not equality. Specifically they realized that accommodations enable students to accomplish the same tasks as their peers and ensures that students are not defined by their exceptionality.

A criticism of exceptionality simulations is that the social and environmental interactions are often over looked (Lean et al. 2006). The current study addressed this criticism by providing pre-service teachers with the opportunity to participate in all their regular daily activities. The extended time period enabled the participants to no longer focus on having a disability, but to begin to focus on the impact it has on them emotionally and socially. For example, when shopping for groceries, participants reported the occasional negative reaction to their disability and were surprised by the visceral reaction they felt in return. They were further amazed by how many people in the general public seemed to avoid, ignore or blatantly stare at them while simulating the disability. Based on these experiences the participants realized that an individual's exceptionality is only one aspect of a person's life and should not be viewed a life that is lacking or requiring pity.

Overall pre-service teachers felt very positive about the experience and stated that they felt they were more empathetic and gained insightful knowledge. It appears that the extended simulation helped the pre-service teachers to develop a basic understanding of the difficulties faced by individuals' with exceptionalities (Colwell, 2003) as well as a greater level of sensitivity, awareness and compassion towards individuals with exceptionalities (Colwell, 2003; Wadlington, Elliot & Kirylo, 2008).

Future Implementation

There are several recommendations regarding the future implementation of this activity. First, some participants reported that their hands became hot and sweaty wearing the mittens all the time. In the future, it is recommended to implement mitten-free time periods. For example, the participants would not have to wear the mittens at night or while watching television. A second recommendation is to implement either a checklist of daily tasks that must be completed while wearing mittens or to have the participants keep a log of the tasks they completed each day. The advantage of a checklist is that it ensures that more challenging tasks are completed (e.g., grocery shopping). In contrast, the advantage of a log is that it enables the participants to maintain consistency in their daily routine. Third, while all of the participants' professors were consulted prior to the activity and were provided with the option of telling the participants that they may remove their mittens while attending their class, too many professors took up this option. While this cannot be addressed in some courses that required labs (e.g., science and art), obtaining a stronger commitment from fellow professors would help improve the impact of the simulation.

Conclusion

Simulations can be a beneficial method for developing pre-service teachers' empathy towards students who have an exceptionality. To increase a simulations' effectiveness the simulation must be of sufficient duration to ensure that the participants have time to overcome their initial negative emotions. It is only after these negative emotions are addressed that the participants can progress through the sensitivity, cognitive and inhibition phases of empathy.

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Giving cyberfeminism and coeducative proposals for a longstanding problem

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Abstract:

The present communication belongs to the "Gender and Education" topic and it is presented as a theoretical work, where the second gender digital divide is described –. This is understood as the inequality between women and men which exists in the intensity, abilities, and capacities of using electronic instruments. This makes the incorporation of women in the digital world difficult - ; and the third gender digital divide –which is comprehended as the different ways of using technologies according to sex-.

Throughout this theoretical work it is verified that both divides share common elements which are based on the traditional patriarchal culture produced by the sex-gender system. In fact, they are transmitted by social agents (such as school, family, ICTs or their peer group). Everything structures a "digital gender socialization". This cybernetic reality would pose a scenario based on an andocentric view and a masculine domination in the Internet world. And the same as it is created in real life or "off-line", it would promote a hostile space prone to "gender cyberbullying" in which the main aggressions have a sexual character and the main victims are teenage girls

On balance, we are in front of a new trend, but the origin of the problem is longstanding, so the way to tackle this problem (as we do with violence against women) is using coeducative strategies. In this way, the main objective of this communication is to give several coeducative proposals that follow a cyberfeminist perspective. In other words, it wants to give different coeducative alternatives to manage the emotional egalitarian digital literacy.

Key Words:

Gender digital divide; teenager; cyberfeminism; coeducation.

Introduction

Nowadays we live in a social reality which is involved in and governed by technological instruments. Our way of communicating, interacting and having relationships has changed. Information and communication are essential elements of our modern society, therefore, it creates a society which is based on the importance of the accessibility to open information; information which is produced by other people. In this way, modern society is overhauled and "Information Society" appears, which is characterized by speed and instantaneousness (Intituto de la Mujer, 2008b, Zafra, 2010). Thus, we are living in the Information Society whose most important elements are electronic appliances or the ICTs (Information and Communication Technologies) (Castells, 2005).

It is unquestionable that ICTs have given us a large number of comforts, possibilities and technological advances. We have learned to handle a different world full of opportunities for personal and communitarian development. However, this technological, social and cultural development has also brought about digital risks which belong to the "real life" or "off life" world (Zafra, 2005a, 2010; Wajcman, 2004). In this way, the traditional identities are transformed, while others are preserved, as it is the case with the patriarchal system and masculine domination (Bourdieu, 1999; García y Nuñez, 2008).

In the same way, we are conscious that we are living a postmodern period where the personal image has acquired a special importance, we value ourselves through others' eyes, and with that, the virtual corporeal world becomes the protagonist in our lives, as a research of Gobierno Vasco (2013) said, we find ourselves involved in "a virtual and social window display".

In this context, the gender construction is a focus of attention and a subject of study of a lot of authors because due to these technological changes a lot of those sources contemplate the role that gender identity plays in the digital world (Turkle 1997; Alcañiz, 2001; Boix, Fraga, y Sedón, 2001; Castaño y Caprile, 2010a; Castaño, 2005, 2008; Zafra, 2005a,2005b, 2010; Díaz, 2001; Wajcman, 2004; Instituto de la mujer , 2008b; Haraway, 1991).

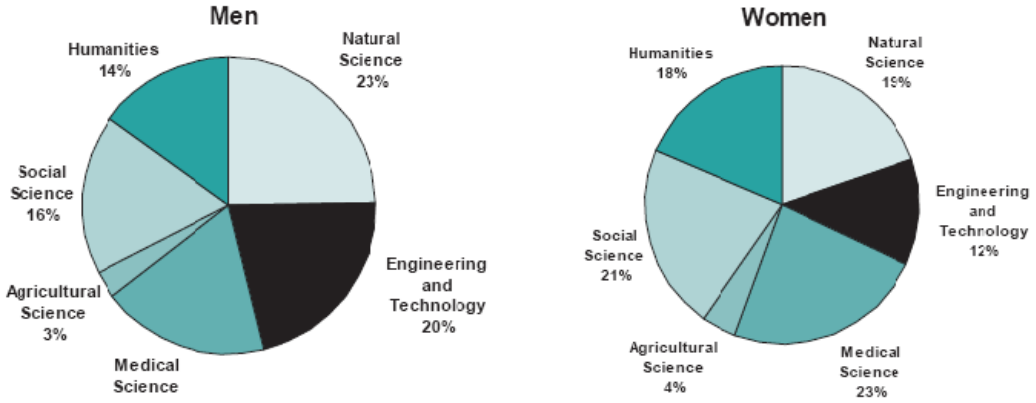
It is evident that gender construction in the virtual era and the future of its development is interesting, and its analysis is necessary; but the aim of this communication is different, and it wants to go beyond, in fact, it positions in one of the vital periods of the gender construction: adolescence (Jiménez-Albiar et. al., 2012; Vázquez, Estébanez, y Herbón, 2013; Tubert, 2008).

According to this, we understand adolescence and gender as constructions which are marked by the sociocultural context in which we live. It is necessary to establish adolescence and gender into the technological cultural context; actually, not only are ICTs usually used, but also they are key instruments for their socialization, self-esteem and in sum, their gender construction (Capdevila, & others, 2008; Connell, 1995; Emakunde, 2004; Valdemoro y Peyró, 2009; Espín, 2011, Tubert, 2008).

In this ambivalence of the Information Society and dependence on ICTs, teenagers have created a virtual world of their own where gender constructions achieve a relative importance, generating gender digital divides. Up to now the main studies were focused on basically two gender digital divides, the first one is understood as the inequality in the access to the ICTs, which is comprehended as a problem of structural equipment, so it belongs to the economic capital of each country, generating a transnational divide where women from less developed countries –technologically speaking- are more excluded from the technological space than men (Observatorio e-Igualdad, 2011; Merchán, 2014; Castaño, 2008).

As far as the second gender digital divide (2GDD) is concerned, which was been the centre of study of a variety of researches, it covers the inequality between women and men in the intensity, skills and capacities in the use of ICTs, making the integration of women in the technological world difficult. This 2GDD would be one of the principal technological democratization challenges in occidental countries, actually, the first one in these countries would be overtaken (Castaño, 2008; INJUVE, 2011: Merchán, 2014; Observatorio e-Igualdad, 2011). Besides, as UNESCO (2007) claims, the 2GDD is replied internationally. In the two graphics below, the gender division in the research fields at European level can be observed:

Graphic 2. Researcher's distribution in EU according to field specializationand sex, 2003

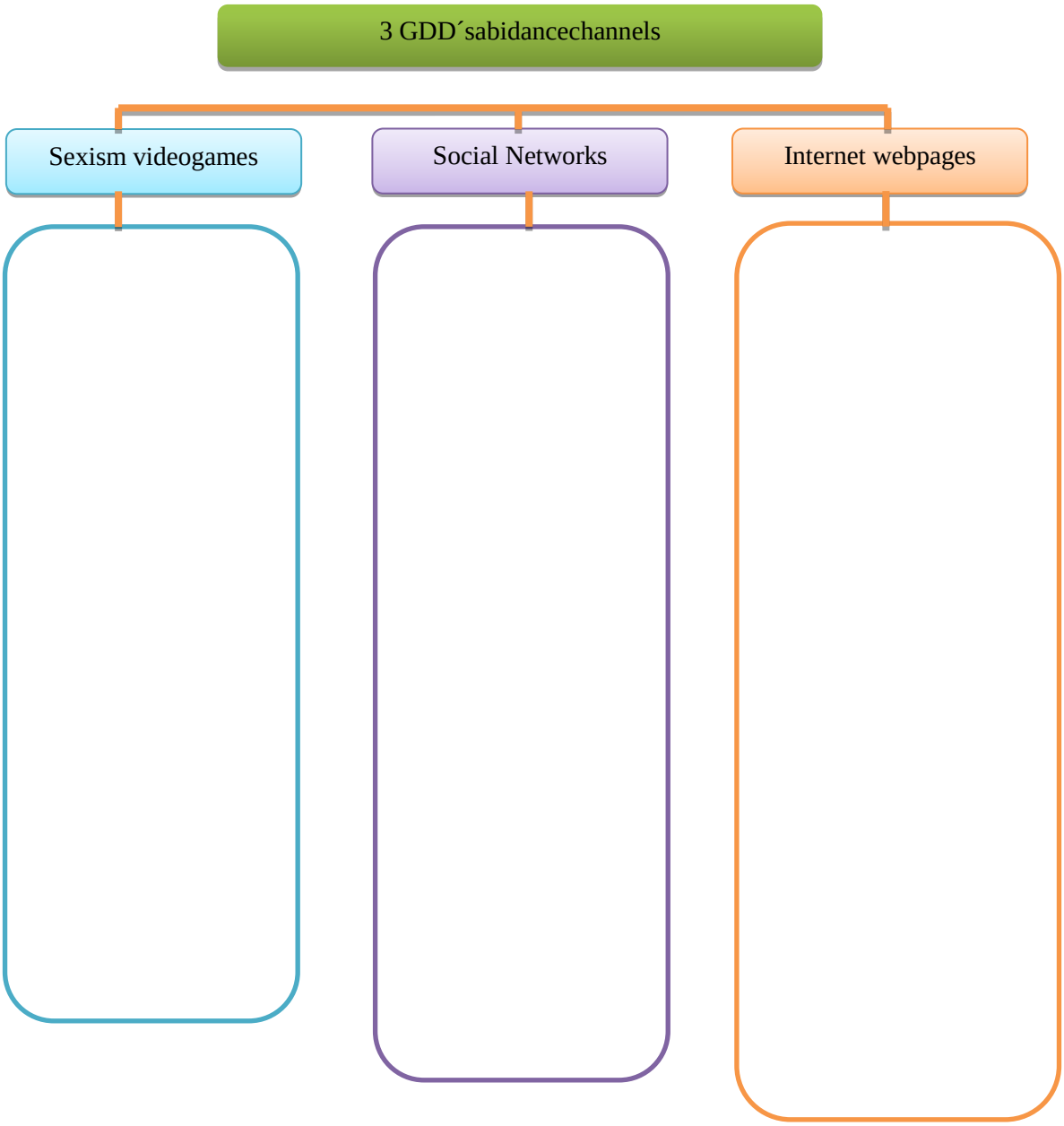


Source: Extracted graphic from UNESCO (2007)

Nevertheless, going deep into the analysis of 2GDD, other complex relationships into the virtual life have been detected, which require a deeper and more qualitative analysis (Gil-Juáres, Feliu & Vitores, 2012), so new researches speak about a third gender digital divide (3GDD) understood as the different ways of usability according to sex, supporting longstanding relationship patterns and asymmetric powers from patriarchal tradition (Gobierno Vasco, 2013). Thus, Jiménez-Albiar, &others (2012), UCM (Universidad Complutense de Madrid) (2012) and Diaz (2001) note that almost most videogamers are still boys, while the main protagonists in social networks are girls.

Regarding the 3GDD, it must be outlined, contrary to what happens in 2GDD [in this case, exact and international percentages are not obtained. Although according to several sources it is agreed that 3GDD has been installed among teenagers in occidental countries, above all in digital natives] it is a more qualitative divide, and in consequence, it is more difficult to measure. Even so, if we analyse profoundly the channels that teenagers frequently use, we could notice some differences between girls and boys. Due to this, and with the objective of summarizing the differences in the uses which girls and boys make depending on the channel –according to the search of many sources-, the following diagram has been drawn up:

Illustration1. 3GDD´sabidance channels



Sources: This diagram was created from Ararteko (2009); Carnagey, Anderson, & Bushman (2006); Diez (2009ª; 2009b); Fundación CTIC (2008); Gobierno Vasco (2013); Instituto Andaluz de la Mujer (2005); Instituto de la Mujer (2004; 2011); INJUVE (2011); INTENCO (2009); Jiménez-Albiar, et. al. (2012); López (2010); Merchán (2014); Perales, Adam, & García (2008); Ruiz (2014); Zafra (2010)

Therefore, and fitting to what has been said, this communication would like to do a theoretical review about the main factors which cause the 2GDD and 3GDD among teenagers (or digital natives). At the same time, it wants to know the effects of both

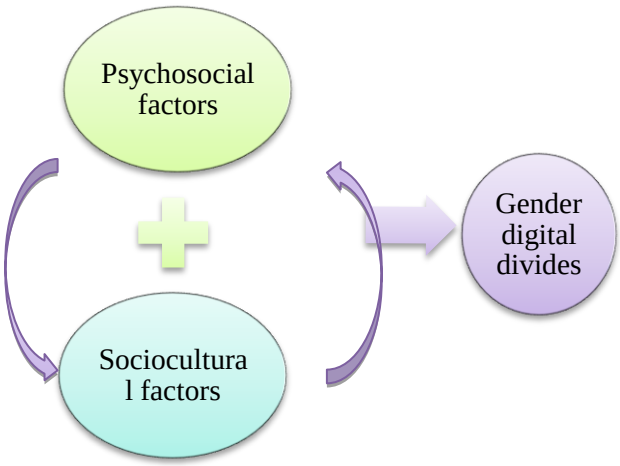
digital dividesin the teenagers' digital world. All with the aim of understanding the structure of those digital divides with the objective of proposing some educative guides which could be integrated in high schools classes. These educative guides will use a cyberfeminism perspective and a coeducative pedagogy, which can make the improvement of the gender and critical digital literacy possible. In other words, it will give proposals to deconstruct what we have learned and known.

1. Factors involved in the creation of 2GDD and 3GDD

To explore the different factors which cause both gender digital divides, and then to understand how they are interacting, the "Model of election differences based on gender" has been chosen, which was proposed by Eccles (1985), and López (1996:30-40; 2003), who gathered it up. This model explains from a gender perspective the segregation in the degrees, where the mix of psychosocial and sociocultural factors is taken into account. Likewise, Sainz (2007) and Sainz & González (2008) claim that in order to study gender digital divides it is necessary to use a psychosocial perspective, since the creation of those divides is complex, not linear, and it is the result of an interaction of different factors.

So–as we could observe in the graphic below –the factors do not go by, and neither do they happen in an independent or linear way. In spite of the fact that to make a summary of those, two charts have been designed which gather all of them in a concise and schematic way, therefore favouring an easy undersatanding.

Illustration 2 Gender digital divides´ factors mixing



Source: Own creation

1.1 2GDD´s sociocultural and psychosocial factors

We will start with the itemization of the factors which interact in the 2GDD. For that a supervision of numerous sources has been provided (you can find them at the bottom of this table) and, as a result, we could structure the following table:

Table 1. 2GDD´s sociocultural and psychosocial factors

Sociocultural factors	Sexual division	The first element would answer the oppressive exclusion and androcentric history which has conditioned the sexual division at work (women into the private sector; and men into the public one). So that, and attending to this traditional division, the ICTs would set themselves as part of the logical, rational, objective and public sphere, and therefore, into the masculine field, as an opposite to the feminine. That is to say, the technological field, just as the science field, is a culture which is based on gender bias, in spite of the objectivity and neutrality of scientific ideals, this field has been developed without feminine presence.
	Technological design	It is interesting to integrate this factor, actually, technology, and its design, also understands about stereotypes and discriminatory and dividing lines, which would suppose a key factor for women's exclusion in this field, in fact, it creates a masculine technological culture.
	Absence of positive models	Moreover, and as a result of other factors which have been mentioned, but at the same time as a cause of these factors, an absence of patterns and positive models for young girls is created. These would motivate and encourage them to choose these kind of technological careers and avenues.
	Gender socialization	The differentiated socialization which is based on gender constructions, like dichotomous and opposed

		pairs on which we are educated, promotes that girls gain expressive-communicative characteristics, which are linked to care, fondness, social and artistic; while boys learn instrumental-agent characteristics, related to masculine features such as exploration, discovery, competitiveness, individuality, instrumentality and effectiveness, so that they are more exposed to this electronic appliances than girls. In this way, the main agents of socialization(school, family, and mass media) transmit several clichés which are related to the dichotomy between woman and man, science and social.
	Collective imagination	A stereotyped and archetype idea about IT technicians is created, as white, intelligent, creative, reasonable, but also little sociable men (without social skills), reserved, grey and great workaholics, who could lock themselves in their office for long hours programming and isolated. They are known as "freaks" or "nerds".
Psychosocial factors	Role conflict	In this figuration of the technological field as something which belongs to the masculine sphere; it would be in contradiction with the interiorized blueprint of girls, their feminine role. What we assume to be necessary to study an IT degree does not fit with what girls have learned and it can make them live in an ambivalent way their decision to study a related degree, owing to the roles mismatch.
	Self-concept	Another psychosocial process, which is conditioned and subjected to sociocultural factors, is the technological self-concept of girls. Due to their gender socialization and being involved in the patriarchal system, girls feel more insecure when

		they have to face machines. Throughout their education they were not taught to explore and discover, in this way, they feel concerned about breaking any machine (this is also highly conditioned by the self-request that they learned since their childhood).
	Experiences	Girls have been gaining a lot of negative experiences with ICTs, as they are separated since childhood from electronic appliances. Their relationship with technology is so distant.
	Technological feminine hostility	All in all, all these insecurities, self-discrediting and self-assessment, as an opposite of technologies and technological degrees, have created a technological feminine hostility. They perceived ICTs as instruments for "others", in fact, they do not feel motivated to study this type of degrees.

Sources: This table has been created following Alcañiz (2001);Castaño, (2008); Castaño y Caprile (2010); Castaño y Müller (2010); Elejabeitia, (2003); Diaz (2001); Instituto de la Mujer (2008); López (1996/2003); Phipps (2002); Rubio (2009); Sainz (2007); Sainz y González (2008); Sánchez, Ortega y Vall-llovera (2012); Sarsaneda (2012); Stonyer (2002); Unesco (2010); Vázquez (2010); Veikeri (2010).

1.2 3GDD´s sociocultural and psychosocial factors

We are in front of a cultural obstacle belonging to the patriarchal system, where the biggest lack of proportion structures in spare time and purchase (Castaño, Martín, & Martínez, 2009: 51). Consequently, and taking into account that the 3GDD is starting to be researched right now and discovering what the main factors in the creation of the divide are, it is not easy to do a great theoretical frame related. Therefore, considering different sources here and there and with the definition given initially of what we understand by 3GDD, we have tried to specify the factors that create this 3GDD.

Apart from limitations, below the main factors which cause the 3GDD are shown, which are organised –as in the previous section- in a table (however, it should be remembered that it does not mean that factors are given in a linear way):

Table 2. 3GDD´s sociocultural and psychosocial factors

Sociocultural factors	Technological design	As it happened in the previous digital divide, the technological design is not exempt from patriarchal context, and its content is so connected with this system and gender stereotypes, based on masculine necessities and tastes, and they are designed from a totally androcentric perspective. In fact, girls would feel more comfortable in communication spaces as social networks, actually, and due to their gender role, they would see them more practical than videogames.
	Digital orphanage	Our entrance in the technological world, at least so far, has been given as a passive and self-taught learning. Above all, teenagers enter in the technological world alone, actually, parents become aliens for them not only in the real life, but also in the online life, which is generating a digital generation divide.
	Gender socialization	Gender roles are also principal agents to create this digital divide, in effect, girls use more social networking fostering this communication pattern which is linked to the feminine role, while boys share aggressive, competitive and violent spaces, which have more in common with the hegemonic masculinity, which supports virility. Furthermore, we must remember that boys, on the contrary to women, are in direct touch with technologies since early childhood. This structures and draws an image in which women do not like technologies, and men

		love them.
	Collective imagination	As it is said, there is a cultural and social collective imagination which is related to the image of being IT technicians, who are known as “freaks”. A masculine image that doesn’t help girls to approach technology in a natural way. In this way, they prefer sharing spaces where this stigmatized ideal does not exist.
Psychosocial factors	Role conflict	In the particular case of videogames, due to the fact that they are based on masculine codes -as violence, or competition-, they are opposite to feminine role. This supposes a rejection and repudiation of this type of games. In this way, and giving an explanation to the difference in the uses of videogames, those girls who initiate themselves in videogames prefer playing videogames which suggest logical challenges rather than commercial videogames, where the woman´s body is categorized as a secondary character or a sexual object.
	Self-concept	Both boys and girls face ICTs in different ways, while girls are guided by their typical feminine role (as the weak, irrational and dependent on others’ eyes gender), they see themselves less capable and skilled to use the ICTs; whereas boys see themselves more capable and skilled to use them, and they aren’t afraid of facing them and discovering them. In fact, since they are infants they are encouraged to have this approach, while girls are put off.
	Technological feminine hostility	That gender stereotype links technophile to masculinity and technological feminine hostility. This leads to a self-fulfilled prophecy and to a technological self-discrediting where girls feel

	distant from technologies, not seeing them as playing and learning instruments.

Sources: This table has been created following Bonder (2012); Castaño, Martín, y Martínez (2009); Castro, (2010); Díaz (2001); Gil-Juáres, Feliu y Vitores (2012); Merchán (2014); Sainz (2007); Sánchez, Ortega y Vall-llovera (2012); Sarsaneda (2012: 203); Turkle (1997, 286); UCM (2012: 15); UNESCO, (2010); Veikeri, (2010); Wajcman (2004:170)

2. Feedback of gender digital divides

As it has been proven, there is still a lot to be researched and discovered regarding the factors of gender digital divides. In order to we have shown, these divides display a great outlook of study, where we can find different discriminatory situations. And although we must still discover more weaknesses and assumptions, it can be observed after this analysis that teenagers live with an unequal special distribution into ICTs, which are principally considered as masculine spaces. Moreover, we see that stereotyped behaviours and attitudes are revealed in the Red, in fact, they become a virtual and symbolic reflection of the patriarchal system.

We can observe, at the same time, that there are interactions and similarities between the two gender digital divides, even they get a feedback where a flow exchange is generated, in which we cannot appreciate which precedes the other. Nevertheless, we could know that the origin of both gender digital divides is set in the gender culture which belongs to "off-line" life, some structures, as Bordieu (1999) said, which are imbued in ourselves and they have created an "ethics naturalization" inside the cybernetic world, structuring feminine and masculine spaces.

Everything draws a complex and no-linear universe, in which the study requires a deep analysis that describes the structural framework, the "loom" which is created in this world (Gil-Juáres, Feliu y Vitores 2012). We don´t speak about quantity but about a structure which is more abstract and more invisible, something so human as our own culture. In this way, and with the aim of seeing the common elements of both divides clearly, the following table has been done:

Table2. Factors which interrelate in the 2GDD and 3GDD

Factors		2GDD	3GDD
Sociocultural factors	Sexual division	X	
	Technological design	X	X
	Digital orphanage		X
	Absence of positive models	X	
	Gender socialization	X	X
	Collective imagination	X	X
Psychosocial factors	Role conflict	X	X
	Self-concept	X	X
	Experiences	X	
	Technological feminine hostility	X	X

Source: Own creation

We could confirm, therefore, that a digital gender socialization exists, imbued in a technological collective imagination in favour of the white masculine profile (we must remember that the profile of IT technicians as "nerds" has been naturalised: a white and young man who loves technologies and videogames). Thus, a hegemonic masculinity would be built, similar to the high masculinity described by Connell (1995), and this leads to the fact that girls don´t see themselves as active agents into the cybernetic space, finding themselves in a world totally contrary to theirs, making a basic use of technology and moticing themselves as victims.

In the same way, we would like to emphasize the importance of the first technological contacts. As it happens in the "real world", the first gender roles are learned with games, in this case, videogames, which nowadays have so much influence in the routine of teenagers. Game instruments –as we have seen- which are defined by a sexism halo and masculine culture, stereotyping the feminine and masculine profile (the same as happens in the traditional toys catalogues), this would be one of the first steps to a technological feminine hostility, and to adopt prototypical masculine and feminine roles which finally influence in their posterior career decision (Gil-Juáres, Feliu y Vitores 2012).

On the other hand, a technological educative gap can be noticed, above all in informal education (families or partners). In case of the formal education–the main interest of this communication-, we should speak not about an absence, but about how the knowledge

is transmitted, what type of message is sent to girls and boys. As we know, the hidden curriculum still exists, which is camouflaged in an apparent equality, and which requires to be reviewed (INE, 2008).

3. The effects of gender digital divides in the high schools

Zafra (2005b) sees these situations as silence discriminations and, in her words, they could be called "gender technology". In this way, due to the closeness to traditional gender socialization, we could say that a gender digital socialization in the digital world is produced, in which a dichotomy world is founded based on the traditional sexual pairs, generating a power and gender asymmetry, and promoting –as we could see at the beginning- a digital masculinity domination.

A predominance of patriarchal speech can be found on the Internet, which comes from men´s domination of technological tools and uses, and this supports the system of men´s values in the Red (Castaño, 2005). Furthermore –as it has been said- a technological hegemonic masculinity has been generated, a selective masculine policy which is based on the patriarchal ideology(Castaño & Caprile, 2010).

In this way, as Connell (1995:268) said, despite the heterogeneity and diversity of our world, because of capitalism –the system which has a close relation with the patriarchal system- has carried out a global idea which runs through borders of what it is the meaning of technologic hegemony -obviously always white and masculine- and thus, men who are from metropolitan countries and have a high status are the principal beneficiaries of this representation. Because of this, a masculine technological organisations have been created, such as videogames, arms industry, economic industry, pornography, social networks, technological advances. In other words, the main technological advances are held by white and rich men, generating a gender, race, and ethnic stratification on the Internet.

Everything makes more sexist contents into the Red and videogames possible, which is absorbed also by teenagers, producing a symbolic violence for example in their selfies and digital behaviour. This symbolic violence is characterized by a high sexual load, and this has promoted violence and risks against women (Castaño, Martín, y Martínez, 2009: 51). Therefore, Gobierno Vasco (2013) points out girls are more afraid than boys of suffering from cyberbullying which is related to –above all- the diffusion of images,

photos and videos where they usually appear naked or seminaked, or in a sensual posture.

The study gathers that through social networking girls are more insulted and denigrated because of their body image. At the same time, they feel that they are more sexually harassed than boys, actually, almost of them have suffered a sexual proposal. Additionally, in this research it is said that a controlling situation and harassment–which are established in teenagers relationships- are naturalised by girls, and they interpreted them as a "loving" action (Gobierno Vasco, 2013:18). Also we must underline that smartphones have increased control and harassment, and when they live in a toxic and male chauvinism relationship those devices become risky controlling instruments.

All these types of violence have adopted different names such as: cyberbullying (a harmful, aggressive and intentioned behaviour, during a long period of time through digital channels), grooming (harassment from an adult to a child through digital channels), sexting (the act of sending photos, images or videos which have a sexual nature, with and without –there is a terminological gap- consent) (Buelga y Pons, 2011:91; Buelga, Cava y Musitu, 2010; Delegación del Gobierno para la Violencia de Género 2014, 18; INTENCO, 2013: 21-2011; Lenhart 2009; Strassberg, y otros ,2012). However, due to the characteristics which are being adopted by these ways of violence against girls, and because of their chauvinistic background, it is believed that all these ways of violence could be denominated as chauvinistic cyberviolence.

4. A different and cyberfeminist proposal for the digital equality at high schools

We face a structural problem, and as Merchán (2014) &Castaño, Martín, & Martínez (2009: 145) said, exceeding it is so complicated. We should deconstruct what is constructed; elaborate new experiences, ways, formats, and speeches which demystify what is imposed by the patriarchal system. We should change the way in which information and training are conveyed. We must create a different way of training which does not validate the androcentrism and male chauvinism. We are speaking about a different education, or as the aforementioned sources claim a "digital literacy".

In this way, a more positive perspective wants to be adopted. A perspective which provides solutions and proposals to surpass these divides in the classes of secondary

education. According to this, ICTs are instruments which increase risky situations, but at same time, they could change and vindicate the digital world. Also, education, or in this case the digital literacy, would not be perceived exclusively as a transfer of knowledge of basic technical skills for the use of ICTs –although essential for our daily life- (Milic & Skoric, 2010: Merchan, 2014); it would be seen as an important strategy to beat sexism in the Red and cyberviolence (Díaz-Aguado & Carbajal, 2011: 387).

On the other hand, education wants to be seen as a key element to eradicate sexism and promote awareness [in this case the prevention is understood as the capacitation of young people with the aim of gaining some personal resources to analyse the unequal situations of the daily life, with the intention of detecting the early stages of chauvinistic cyberviolence. In sum, it is a mechanism for the construction of social equality, with the objective of eliminating cultural and social patterns which determine the inferiority position of women (Instituto Andaluz de la Mujer, 2011:5; Díaz-Aguado, 2009:31-41)]. Education wants to be considered as a powerful strategy which is oriented to the democratization of technological rights from different levels of education, in order to guarantee the full citizenship and equality involvement of it on the Internet; making it possible to prevent, at the same time, risky situations and the creation of gender digital divides (Díaz, 2001; INTENCO, 2009; Milic & Skoric, 2010; Veikeri, 2010; Zafra, 2004, 33).

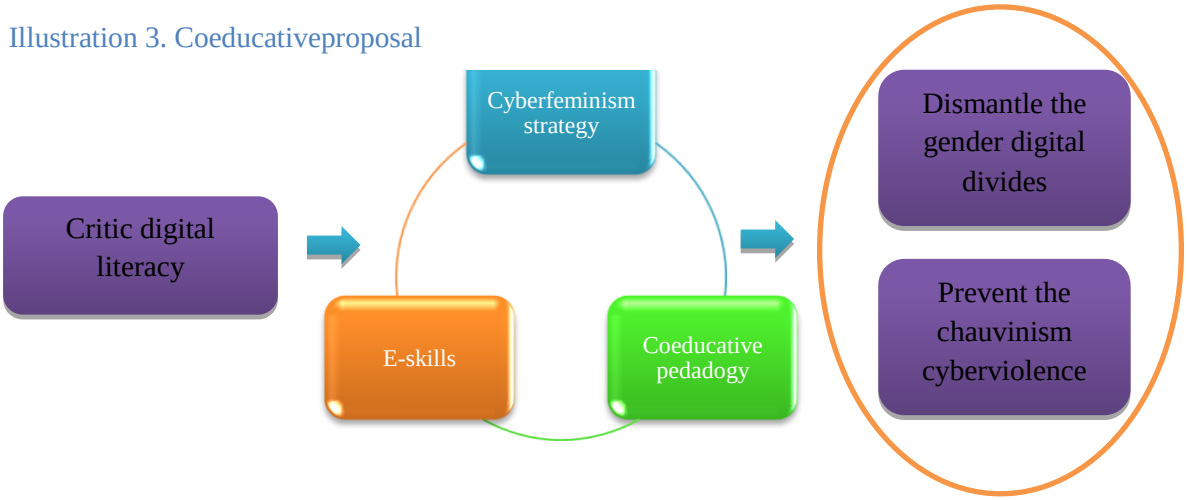
In this educative proposal the necessity of using a cyberfeminist strategy is set out, in this way this technophile perspective can be gathered and see ICTs as educative, leadership, citizenship and social change tools (Zafra, 2004). Likewise, as cyberfeminists would do, this critic digital literacy would look for the dismantling and demythologizing of the ideological link of the technological hegemonic power.

It is proposed, in the same way, that the educative practices would set a coeducative practice, actually, coueducation is the central axis of the intervention for surpassing gender stereotypes, in fact, not only is it a coeducation transmission of knowledge and information, but also a pedagogy which arouses the critical thinking and believes in the comprehensive citizenship and civil rights (Bonal y Rambla 2001; Feminario de Alicalte, 2009, Instituto de la Mujer, 2008: 16). In other words, traditional education imposes and runs, whereas coeducation improves the free thinking (Bonal y Rambla 2001).

It was mentioned before that digital skills configure the digital literacy. In this case, we do not speak about digital skills as technical skills, we would like to refer to digital skills as digital skills for the digital life (even no digital, actually the origin is the same) which could permit teenagers to develop skills and attitudes to face the digital obstacles. These skills would be understood as social and cognitive e-skills, which could handle emotions, where we must take into account the main 10 abilities of our daily life (self-knowledge, empathy, assertive communication, interpersonal relationships, decision taking, conflicts and problems solving, creative thinking, critical thinking, emotion and feelings management, and tension and stress management).

Once getting to this point, we could say that in this communication a digital critic literacy which uses a cyberfeminist strategy is proposed, and a coeducative pedagogy which uses e-skills of the digital life could dismantle digital gender divides. Also they could be a great option for the prevention against chauvinist cyberviolence. Thus, the aim is to inform, and educate about gender digital divides and risky situations, but it would also be far from prohibitions, control and negative indictments, actually, it is understood that ICTs could be coeducative tools which could change the digital sexism spaces. This coeducative proposal would search for a coexistence of teenagers into cyberspace in a healthier way, in few words, if these suggestions are implemented, they could see the digital world with other glasses and change it (Rubio, 2012:119). With the objective of showing what has been proposed in an easy way, the following graphic has been designed:

Illustration 3. Coeducativeproposal



Source: Own creation

Conclusions

Everything which has been aforementioned creates an ambivalent space on the Internet. While a myriad of change and actuation possibilities have been strengthened, also gender stereotypes are generated and perpetuated. Therefore, we propose to integrate cyberfeminism and coeducation in an integral way in the secondary classes, that is to say, strategies which look for the management of new, diverse and multiple identities and at the same time giving solutions with positive messages which lead to the technological change.

In the same way, we should work with sexism in the virtual world and it would be a means of change, in order to replace the patriarchal mechanism and symbolic violence. Actually, working the sensitivity of the 2GDD and 3GDD it would suppose to analyse, see and observe more critically, all in all, it wants to improve a critical conscience of our environment. Furthermore, it must emphasize the necessity of prevention in the risky situations –which are more and more common and diverse- that are given against girls in the technological spaces.

In the end, it is observed that the pattern and structure of the gender digital socialization are very close to the structures of the real life, in this way, as Ruiz (2014) said, ICTs don´t create inequality on their own. Therefore, the cultural models that we have interiorised are copied in the Red, creating a hybrid world, where possibilities, inequalities and risks are mixed (Delegación del Gobierno para la Violencia de Género, 2014); and also where coeducation is established as a revolution, deconstruction and construction channel.

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High school teachers' preparedness for the identification and nurturing of the mathematically gifted learners

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Abstract

Mathematical talent has received considerable attention during the last decade in a number of developed countries. However empirical evidence shows that this talent is neither recognized nor nurtured in many African countries. In South Africa critics argue that teachers were never trained to meet the needs of the mathematically gifted students. Yet it is the responsibility of teachers to provide opportunities for students to reveal their talents by eliciting ingenious solutions to challenging problems. Enabling teachers to confront and change this reality is of utmost importance for creating the fundamental shift in mathematics teaching and learning envisioned by many new reforms in developing countries. This study aimed at investigating the extent to which South African mathematics teachers recognised and supported the development of gifted students' creative potential. The study followed a Qualitative Secondary Analysis (QSA) approach. Four teachers had been observed teaching over a week and the current analysis focused on their representational fluency and how they responded to gifted students' creative ideas. The results show that in 63% of the micromoments students' creative ideas were considered disruptive and were therefore not recognized. In 70% of the episodes teachers representations were either mathematically faulty or correct but with no further justification or explanation. These results suggest that currently regular classrooms in South Africa might not be conducive for the development for the gifted students' creative potential

Introduction

Post-independent South Africa, like many other developing countries, has enacted legislation and formulated policy which abandoned a segregated system and adopted an inclusive education system. A specific concern that has been totally ignored within inclusive education is whether or not the regular classroom would expand or limit the mathematically gifted child's creativity. Creativity is generally viewed as an important life skill that must be developed in 'all children' and must therefore be a mainstream curricular goal (Beghetto 2010). While creativity must be developed in all children; within the context of gifted education creativity moves from being a background player to a key role player (Kaufman, Plucker, and Russell 2012). Intellectually gifted individuals are often seen as "the hope of the future" because of the special creative attributes that they possess (Wilms 1986). For this

reason Milgram and Hong (2009) warn that, societies that do not make every effort to ensure that the potential talents of their young and intellectually gifted people are utilized, are losing their most valuable natural resource - human capital. Leikin (2011) therefore proposed that mathematics education must pay more attention to research of different kinds of mathematical activities, with a clear focus on students' creative thinking and giftedness. Literature shows that teachers who are committed to supporting creative potential, take on a dual responsibility, that is, (a) teachers need to be able to make flexible use of representations (representational fluency) before they are able to create an environment that allows learners the freedom to use different representations and (b) teachers must provide students with opportunities to express their unique and personally meaningful ideas - they must encourage, accept, promote strange ideas but not criticize ideas immediately after the students presented them (Johanna 2003). Similarly Beghetto (2013) posits that the way teachers respond to students divergent reasoning has important implications for whether opportunities for nurturing such creativity will be supported or missed. Given this dual responsibility and linkages between creativity and the teacher's representational fluency this current study aimed at investigating the extent to which South African mathematics teachers recognised students' creative potential and how their teaching approaches supported/inhibited students' growth of such potential. The paper then raised two specific questions:

1. To what extent were the teachers able to make flexible representations of mathematical ideas?
2. How do teachers respond to gifted students' creativity?

Conceptualisation of different representations

It is important to show how the concept of different representations is conceptualised given its centrality to this paper. In the mathematics education community, the concept of mathematical representation has been based on different theoretical perspectives. In this paper the author adopts the widely used definition that a representation is a configuration that can represent something else (Goldin, 2002). Gagatsis and Shiakalli (2004) then suggest two major registers of representations, that is treatments and conversions which were considered useful for this paper. According to Gagatsis and Shiakalli (2004) conversions are transformations of representations that consist in changing the register without changing the object being denoted. For example the graph of a parabola is a conversion of $f(x) = ax^2 + bx + c$ because the two representations are from two different registers (graphic – symbolic). In contrast, treatments are transformations of representations, which take place

within the same register in which they have been formed. One example is 17 + 37 is equivalent to 37 + 17 is equivalent to 54. Within the literature the importance of learners being able to move comfortably between and among, within and across, these multiple representations is highlighted (Weinberg 2001). This suggests that both treatment and conversions should be encouraged. Consistent with this bifocal perspective, the term different representations is used in this paper in relation to both treatments and conversions. Classroom activities were therefore analysed to see the extent to which the teachers' representational fluency between and across different registers enabled or constrained learners' creativity.

Conceptualisation of creativity

Although creativity has been described as the most important economic resource of the 21st century (Florida 2002), there is lack of an accepted definition for mathematical creativity since there are numerous ways to express it (Mann 2006). However there seems to be consensus that in order for an idea to be creative it requires a combination of unexpectedness or novelty and meaningfulness, usefulness, or appropriateness as defined within a particular context or set of task constraints (Kaufman 2009). Beghetto (2014) proposed the Four C model (Figure 1) and argued that this model can help teachers understand the levels of creative expression most germane to the classroom environment (i.e. mini-c and little-c) and identify key factors necessary for supporting the development of creativity from one level to the next.

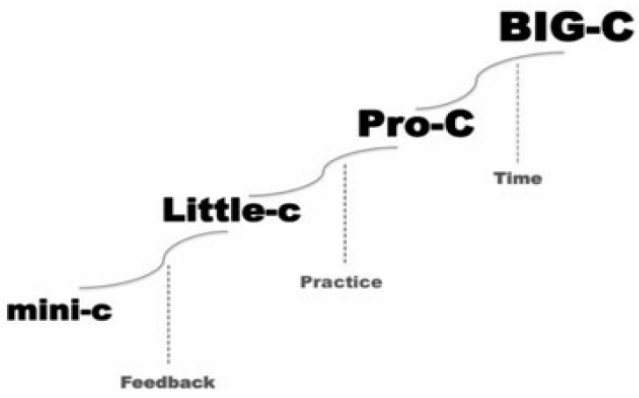

Figure 1 The developmental trajectory of creativity (Beghetto & Kaufman & Beghetto, 2014:55)

The justification of the mini-c level followed current conceptions especially of little-c creativity which were perceived as not inclusive enough to accommodate the personal

creative processes involved in students' development of new understanding and personal knowledge construction. Most teachers are aware that none of their students' creative ideas are likely to be in the Big-C category. Yet attempting to use the little-c category to classify students' creative insights can also be too restrictive - resulting in such insights being dismissed, discouraged, and overlooked (as opposed to being recognized and nurtured). Including the category of mini-c in the model of creativity helps guard against the neglect and loss of students' creative potential by highlighting the importance of recognizing the creativity inherent in students' unique and personally meaningful insights and interpretations as they learn new subject matter. In this case mini-c creativity represents the initial, creative interpretations that all creators have which later manifest into recognizable (and in some instances, historically celebrated) creations. This conceptualization of the mini-c creativity is important in this paper given the paper's focus on the support given by mathematics teachers to gifted students.

As illustrated in Figure 1, feedback is one of the most important things in helping shape one's mini-c ideas into little-c contributions. This highlights the need for individuals to receive cueing from their social environment when their ideas and contributions are not understood. In this teachers of mathematics can help encourage ideational-code switching between mini-c and little-c creativity by (a) taking time to hear and attempt to understand novice mini-c interpretations; (b) cueing novices when their contributions are not making sense given the domain constraints, conventions, and standards of particular activity or task, and (c) providing multiple opportunities for students to practice moving between mini-c and little-c creativity. The second research question for this paper is all about this feedback as it seeks to understand how teachers respond to their students' creative ideas. Given this neat dovetailing between the elements of the four c's model and the research questions the author was convinced that the model was appropriate for this study.

Teacher responses that support/inhibit the mini-c creativity

With reference to teachers' recognition and support of students' creativity, Beghetto (2013) posits that a potentially creative idea may first appear as an unexpected idea (micro-moment) which warrants some level of recognition and exploration by teachers. Beghetto defines micro-moments as brief, surprising moments of creative potential that emerge in everyday routines, habits and planned experiences. In these micro-moments, the students break from the normal set of responses to mathematical tasks and look at the mundane through a new set of eyes. When students respond in an unexpected way to known answer questions, teachers

are then confronted with a micro-moment decision (Beghetto 2013). The way teachers respond in these micro-moments has important implications for whether opportunities for nurturing mini-c creativity will be supported or missed. Given that creativity is a distinguishing characteristic of giftedness micromoments represent defining moments when it comes to nurturing students' creativity. Although there are a variety of ways teachers can respond to such student creativity, Rowland & Zazkis (2013) suggest that the teacher's response is one of three kinds - to ignore, to acknowledge but put aside, and to acknowledge and incorporate. While acknowledging an idea and putting it aside for some time might not have significant consequences, there are costs and benefits inherent in choosing between the two extreme responses i.e. 'ignoring' or 'acknowledging and incorporating' students' unexpected responses. In order to examine the extent to which the teacher's acceptance/dismissal of unexpected situations is of value/no value to the students, two important factors needed to be considered (a) the (non)mathematical nature of the student's interruption and (b) the (non) mathematical nature of the concomitant teacher's response.

Methodology

Research Design

This paper draws from archived data and follows Qualitative Secondary Analysis (QSA) approach which refers to the (re) using of data produced on a previous occasion to glean new social scientific and/or methodological understandings. This may involve prioritising a concept or issue that was present in the original data but was not the analytical focus at that time (Irwin 2013). In the present analysis the author prioritises gifted learners' creative potential which was present in the original data but which was evidently ignored previously when teachers were prioritised. Proponents of QSA contend that opportunities to ask new questions and so to draw new interpretations are some of the reasons for returning to own data or turning to the data of other researchers (Bornat 2010).

Participants

Four Grade 11 mathematics teachers (2 male, 2 female) were observed teaching in regular classrooms of ±40 students. In each of the four classrooms it was possible through the teacher's nomination and book inspection to identify four top performers who in Gagné's definition would constitute the 'garden variety' of intellectually gifted students. In this paper the author prioritised these 16 students' ways of creative thinking and how their teachers supported or hindered their progress.

Data Analysis Techniques

In order to answer the first research question the researcher analysed transcripts of 20 lessons and coded 377 teachers' different representations. Coding of teachers' mathematical representations was done in accordance with a Representational Reasoning Model (Mhlolo, Venkat & Schäfer, 2012) that we developed. In order to answer the second research question a classroom micro-moment was chosen as the unit of analysis. A micromoment emerges when a student presents an unexpected idea and the focus of analysis was on whether students' unexpected ideas were either mathematical or nonmathematical/disruptive and whether teachers responded in a supportive or inhibitive way to such students' creativity. In coding micromoments the researcher argued that a student's unexpected idea might be mathematical (creative) or non-mathematical (disruptive) and the teacher might respond by ignoring or acknowledging and incorporating.

Validity and Reliability

A number of measures were taken to enhance the accuracy, credibility and validity of data. Firstly participation was voluntary. During and after the lesson observations, there were frequent member checks with the participants. For example during the lesson observations there was constant dialogue with participants in order to verify the researcher's inferences. After the lessons participants were asked to read transcripts of dialogues in which they had participated in order to either agree or disagree that the summaries reflected their views, feelings and experiences. Throughout the research process the study was also subjected to peer scrutiny through conference presentations, peer discussions and research indabas.

Results

Different Representations

Below I now provide a summary of the different representation episodes for all the four teachers for the whole week.

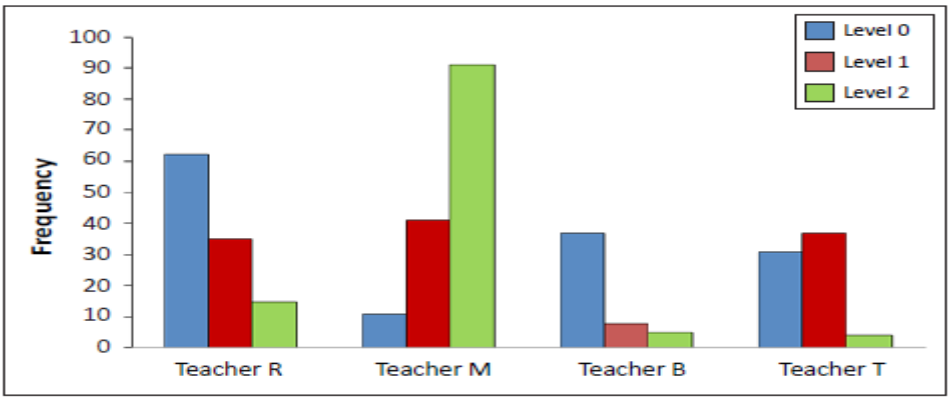

Figure 2 Summaries showing the quality of Different Representations by each teacher (n=377).

The results show that most of the four teachers' representations were either mathematically faulty (level 0) or correct but superficial with no further justification or explanation (level 1). When one considers that level 2 of the different representations should be the target of any effective classroom teacher, then it can be argued that teachers were off target in 70% cases of their different representations. This left only 30% of the different representations with the potential to support gifted students creativity.

Teachers' responses to students' creativity

Table 1 Summary of micromoments (n= 43)

		Teachers responses	
Nature of students' unexpected ideas		Acknowledged and incorporated	Ignored
	Mathematical	11 (26%)	27 (63%)
	Non-mathematical	0 (0%)	5 (11%)

Table 1 shows that throughout the 20 lessons that were observed over a period of four weeks, a total of 43 unexpected ideas were created by the mathematically gifted learners, 38 (89%) of which were mathematical/creative and 5 (11%) were non-mathematical and therefore considered disruptive. Of those which were mathematical, 11 (26%) were acknowledged and incorporated into the planned activities but 27 (63%) were ignored. Of those which were non-mathematical, none were acknowledged and incorporated and all 5 (11%) were ignored by the teacher.

Discussion

The first research question for this paper was about how teachers use different representations to create/hinder opportunities for gifted learners' creativity in the regular classroom. It would appear that gifted students in these regular classrooms lost opportunities to develop their creative potential given that only 30% of teachers' representations were mathematically accurate and supported with justification or further explanation and the majority (70%) of

teachers' representations were either faulty or superficial. Similar observations were made by Davis & Johnson (2007) who concluded that in South Africa teachers spent most of their time on explaining mathematical ideas, principles and definitions but without discussing or explicating the mathematical reasons for the productions of the ideas. All this seems consistent with other observations that in South Africa teachers' subject knowledge is weak (Adler 2009; Spaull 2013). Given that the instructional representations that gifted students encounter define the formal opportunities for learning about the subject content it can be argued that gifted students might not be developing to their creative potential under current conditions in South Africa.

The second research question had to do with the recognition of some of the creative abilities that are demonstrated by mathematically gifted learners in the regular classrooms. Generally the results show evidence of creative and productive thinking in gifted learners' contributions given that 89% of the students' unexpected ideas were mathematically reasonable in context. However such creative ideas were only acknowledged and incorporated into the teaching and learning in only 26% of the cases. In 63% of the cases such students' creative ideas were considered disruptive and were therefore ignored. This is despite that in some cases such learner contributions had potential to open up opportunities for more conceptual than procedural understanding.

The results from this study are similar to Kennedy's (2005) who noted that some teachers frequently mentioned a fear of chaos, others a need to stick with the plan, others a personal need for order. Similarly, Beghetto (2007) also found that unexpected student comments were generally viewed as less preferable and more likely to turn into potential distractions. Many teachers experience the same dilemma of wanting to incorporate creative learning activities into the classroom but feeling that doing so comes at the cost of students' academic subject matter learning. Despite these concerns gifted students require instructional and curricular adjustments that create a better match between their identified needs and the instructional services they typically receive. Opportunities must be presented to allow students to show these characteristics and if their needs are ignored this may lead to loss of motivation, thereby preventing such students from learning which in turn leads to their underachievement.

Conclusion

How can this lack of support for creative minds be explained in the South African context? There is empirical evidence to show that many regular classroom teachers find themselves

feeling caught between the push to promote students' creative thinking skills and the pull to meet external curricular mandates, increased performance monitoring, and various other curricular constraints (Beghetto, 2013). In spite of this dichotomous situation that teachers find themselves in, Baer and Garrett (2010) pointed out that teaching for creativity and teaching specific content knowledge (as stipulated in the curriculum) are not in opposition and teachers can successfully meet both accountability standards and promote creativity in their classrooms. Treffinger, Schoonover, & Selby (2013) indicated that teachers, who hold a belief that student creativity can and should be developed, can teach for creativity even if they face challenges and concerns related to the educational system. Therefore, teachers can develop student creativity in the mainstream classroom even without the expenditure of extra time or the introduction of new curriculum. However further research is needed to understand how this can be achievable in the contexts of meeting curriculum standards.

Implications

This study has both theoretical and practical implications. Theoretically teaching gifted students in the regular classroom should not be conceptualised as some special kind of teaching. Approaches that are recommended for teaching gifted students are good for both strong and weak students. Practically regular classrooms in South Africa might not be conducive for mathematical talent development for the gifted students because their potential in creative ideas go unexplored due to many factors some of which include teacher knowledge, curriculum expedience and exam pressure. This paper recommends that all teachers need to be trained in gifted education in a similar way that they are trained in special education. Currently gifted education is not included in most teacher education programmes. Further studies should be carried out to understand more about how gifted students are catered for in the regular classroom if inclusive education were to be truly inclusive and catering for the needs of all learners.

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Implementing Creative Teaching Program to Improve Quality of Primary School Education in Indonesia

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ABSTRACT

Research Objective

Education is a strategic way to improve the quality of a nation; however, the quality of education in Indonesia is very low. One of the causes of the low quality of education in Indonesia is a matter of effectiveness, efficiency, standardization of teaching, and the quality of teaching by teachers. Teacher quality is the primary determining factor in improving the quality of education, because they are directly interacting with the students in the learning process. Therefore, this research focus on develop and implement creative teaching program to improve quality of primary school education. Our Creative Teaching Program involves mind mapping, attractive presentation, educative games, and interpersonal skill training that implemented in two areas of primary school (Depok and Kramatjati Area).

Proposed Methodology

The method used in this community service program is a multidisciplinary application of Industrial Engineering, named Continuous Improvement that develop and improve products, services, or processes, in this case, improving the quality of teaching and learning process. The method used in this program is the DMAIC (Define, Measure, Analyze, Improve, Control) that is implemented into creating Creative Teaching Program.

Discussed of Expected Outcomes

Overall, the result of this program is satisfactory. Over 70% of the students experience positive changes of teacher's performance in teaching after this program conducted. Besides, the training was successfully conducted in two areas of primary school, and the teachers were very enthusiastic and active during training. The output of this program is also challenging teachers to develop their own educative games that can be applied into their teaching.

We also encourage teachers to submit their educative games into our creative design competition, where we can pick the winners. Some output of this competition are teaching games by pop up media with paper and color creation, teaching media using colored leaves, in-class games, and song creations. The purpose of this competition is to improve the creativity of teachers and to ensure program sustainability, so that this program can be continuously implemented.

Instructional Leadership Efficacy of Secondary School Principals in the Free State Province of South Africa

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ABSTRACT

This descriptive study is part of a bigger study which measured leadership efficacy of secondary school principals in different dimensions of leadership. This paper reports on leadership efficacy of these principals in one dimension, that is, instructional leadership. Cluster sampling was used to select 100 schools from five different districts of the Free State province. The 84 principals who participated in the study came from the five different districts. The sample was made up of 13 females (14.5%) and 71 males (84.5%). The teaching experience of the participants ranged from less than five years to more than twenty years. The school principals completed the School Administrator Efficacy Scale (SAES). SAES was adopted for use because it has already been tested for reliability and was also used to check its applicability in a South African context. The principals' leadership efficacy was measured on a seven point Likert-type scale in three sub-categories of instructional leadership, namely, staff support, instructional support and staff development. The findings suggest moderate to high leadership efficacy in these sub-categories of instructional leadership. The open ended questions which formed part of the adapted SAES indicated that, although the efficacy of the school principals in instructional leadership is moderate to high, there are contextual factors such as the location of the school, lack of resources and teacher behaviours that impact the performance of their duties negatively. Recommendations and suggestions on the way forward are made.

Introduction

Historical changes to the role of the principal have expanded the principal's role and increased its complexity, demanding more time of the principal than ever before (Goodwin, Cunningham, & Childress, 2003; Lashway, 2003). Instructional leadership, among others, has also been added to the list of the roles that a school principal has to perform. Thus, it becomes necessary to look into instructional leadership first, before dealing with leadership efficacy.

The term instructional leadership has been prevalent in educational leadership literature for the past two decades (Goddard, 2003; Goddard & Miller, 2010; Southworth, 2002). In his research on studies of instructional leadership, Hallinger (2008) found that, despite school restructuring and reform, the instructional leadership construct has maintained a consistent stronghold in leadership literature. As a result, instructional leadership is held as the model for emulation by school leaders for its part in monitoring, mentoring, and modelling, and for its promise to improve school performance. The instructional leadership framework (Hallinger & Murphy, 1985) consists of three main components: a) defining the school mission, b) managing the instructional program, and c) creating a positive school climate. Within these components, the instructional leader frames school goals, communicates, supervises and coordinates curriculum, monitors progress, and supports the learning culture through visibility, protecting instructional time, and providing professional development opportunities for teachers.

The term instructional leadership characterizes the collegial practice of working together to improve the quality of teaching and learning (Hopkins, 2001). Day *et al*. (2007) identified that setting directions, developing people, engaging in collaboration, and using data and research as indicators of the effectiveness of teaching and learning are primary components of instructional leadership. Day *et al.* further identified that the most effective practices within instructional leadership components were encouraging the use of data and research and aligning resources to support working with data. In addition, a large component of instructional leadership is modelling, mentoring, and monitoring (Southworth, 2009) and assumes that the principal can model effective instruction, lead others to understand effective instruction recognize effective instruction when it occurs, and understand the outputs of effective instruction. Moreover, monitoring (of student performance data) is required for an informed leader to maintain awareness of students' learning, progress, and achievements. As Southworth pointed out, "data are not an additional part of the work, as if they were an appendage to the teaching process to be consulted when there is time; they are an integral part of leadership and teaching" (Southwood, 2009: 96).

Southworth further identified instructional leadership as learning centered leadership. He thought school leadership is (and must be) primarily about teaching and learning and asserted that leadership becomes "more potent when it focuses on developing students' learning and strengthening teaching" (2009:93). Knowing that learning is constructive, instructional leaders can emphasize the importance of talking about teaching and learning and engage in dialogue as learners. These dialogues describe and analyse what works in the classrooms, what doesn't work, and what strategies are needed to achieve success. Such dialogue brings to the forefront assumptions about teaching and learning and forces the teacher to come to terms with successes and challenges. Instructional leadership requires that leaders understand teaching, learning, and assessment within their schools and that their leadership entails the strategies to effect improvement.

There are several criticisms of the instructional leadership model. One is that it is hierarchical in nature. There is a top-down relationship between the principal and the teachers, as the principal takes on the role of curriculum expert and supervisor of curriculum and instruction (Goddard, 2003). A second criticism is that even if a principal is engaged in instructional leadership, one principal could not be capable of being a curriculum expert in all areas (Hallinger, 2003). Thirdly, because of the fragmented role of the principal, a principal would not have the time to effectively engage in instructional leadership without committing significant time off the clock (Hallinger, 2003). For these simple reasons, among others, the concepts of distributed and transformational leadership have evolved. The description of transformational and transactional leadership is not the subject of this paper.

From the above exposition it becomes clear that instructional leadership is a challenging task for the school principal. We now look at leadership efficacy.

Leadership efficacy

Leadership efficacy is a specific form of efficacy associated with the level of confidence in the knowledge, skills and abilities associated with leading others. It can be clearly differentiated from confidence in the knowledge, skills and abilities associated with other social roles such as a teacher, that is, teacher efficacy or statesman, that is, political efficacy (Hannah; Avolio; Luthans and Harms, 2008: 669).

Principals with a strong sense of efficacy are dedicated in their efforts to achieve their goals, but they do not persist in unsuccessful strategies. Confronted with problems, principals with a high sense of efficacy do not interpret their inability to solve the problems immediately as failure. They regulate their personal expectations to correspond to conditions, typically remaining confident and calm and keeping their sense of humour, even in difficult situations. Principals with higher self-efficacy are more likely to use internally-based personal power, such as expert, informational and referent power, when carrying out their roles (Tschannen-Moran and Gareis, 2005:5).

When faced with obstacles or setbacks those principals with strong belief in their capabilities will redouble their efforts to master the challenge. Efficacious school leaders possess qualities that allow them to be more persistent in pursuing goals. However, efficacious leaders are also pragmatic in the sense that they adapt strategies to the present context so that they do not waste time on unsuccessful strategies. When confronting problems, efficacious principal interpret failure as a lack of effort, or application of an incorrect strategy rather than a lack of skill. Principals with high levels of efficacy believe by doubling their efforts or changing their strategy, they will realize success (Versland, 2009: 60, 66).

In contrast, principals with a low sense of self-efficacy have been found to perceive an inability to control the environment as failure. They tend to be less likely to identify appropriate strategies or modify unsuccessful ones. When confronted with failure, they rigidly persist in their original course of action. When challenged they are likely to blame others. Low self-efficacy principals are unable to see opportunities, to adapt, or develop support. They demonstrate anxiety, stress, and frustration and are quicker to call themselves failure. Those with a low sense of self-efficacy are more likely to rely on external and institutional bases of power, such as coercive, positional and reward power (Tschannen-Moran and Gareis, 2005:5).

According to Calik; Sezzin; Kavgaci and Kilinc school principals are expected to carry out a lot of duties at school. One of these duties is instructional leadership. According to Sindhvad

(2009:16), instructional leadership refers to a series of behaviours designed to affect classroom instruction. Such behaviours include principals informing teachers about new educational strategies and tools for effective instruction, and assisting them in critiquing them to determine their applicability in the classroom. Chell (2013:13) agrees with Sindhvad and states that instructional leadership encompasses "those actions that a principal takes or delegates to others, to promote growth in student learning. It comprises the following tasks: defining the purpose of schooling, setting school-wide goals, providing the resources needed for learning to occur, supervising and evaluating teachers, coordinating staff development programs and creating collegial relationships with and among teachers.

As school leadership continues to evolve, the challenge for principals is to stay abreast of the changes associated with educational evolution and maintain high levels of skill in all areas of instructional leadership. Since school principals are expected to possess competence in all areas of instructional leadership, the principal should therefore possess the capability of impacting educational practice and supporting services appropriate for all learners within the school setting.

This is the reason why a study in leadership efficacy of school principals in instructional leadership is necessary.

Theoretical Framework

The study is grounded in Bandura's Social Cognitive Theory. Central to Bandura's Social Cognitive Theory is the concept of self-efficacy. Perceived self-efficacy is concerned with people's beliefs in their capability to produce given attainments (Bandura, 2006:307). It is a judgment of capability to execute given types of performances. Perceived self-efficacy plays a key role in human functioning because it affect behavior not only directly, but by its impact on other determinants such as goals and aspirations, outcome expectations and perception of impediments and opportunities in the social environment. Efficacy beliefs influence whether people choose to pursue the challenges and goals they set for themselves and their commitment to them, how much effort they put forth in given endeavors, the outcomes they expect their efforts to produce, how long they persevere in the face of obstacles, their resilience to adversity, the quality of their emotional life and how much stress and depression they experience in coping with taxing environmental demands, and the life choices they make and the accomplishments they realize (Bandura, 2006: 309).

Motivation for the study

There is very little research pertaining directly to the leadership efficacy of school principals on instructional leadership. Research into self-efficacy beliefs of school administrators (principals in our context) regarding their ability to create and facilitate effective instructional environment has not enjoyed much attention (Kiefert, 2007:23). This study, therefore, investigated school principal leadership efficacy in instructional leadership focusing on staff support, instructional support and personnel development.

Aim of the study

The aim of the study was to measure the leadership efficacy of school principals in instructional leadership focussing on staff support, instructional support and staff development.

Research questions

The following questions guided the study:

- What is the level of leadership efficacy of school principals in different dimensions of instructional leadership in the Free State Province?
- Are there differences in leadership efficacy of school principals in the different dimensions of instructional leadership as differentiated by biographical factors, such qualifications, experience and gender of school principals?
- What other contextual variables affect the leadership efficacy of the school principals in instructional leadership?
- To what extent is the school affected by the influence of such factors on leadership efficacy of the school principal?

Method

Research Design

This survey employed a mixed method which was more quantitative than qualitative. Cluster sampling was used to select 100 school principals from the five districts of the Free State province.

Participants

The participants in the study were 84 school principals from secondary schools in the Free State Province. From the 84 school principals 84.5% were male and 15.5% were female. See Table 1 below.

Table 1		Frequency	Percent	Valid Percent
Valid	Female	13	15.5	15.5
	Male	71	84.5	84.5
	Total	**84**	**100.0**	**100.0**

Instruments

Data on leadership efficacy of school principals was collected utilising the School Administrators' Efficacy Scale (SAES). The original SAES is a **56** item scale used to assess the levels of efficacy in school principals in staff support, instructional support and personnel

development. The principals' leadership efficacy was measured on a seven point Likert-type scale ranging from 1 to 7. In this study 52 items were used.

Procedure

100 questionnaires were administered to school principals in the Free State Province. Some of the questionnaires were sent via e-mail and others questionnaires were delivered personally by the researcher after permission to conduct research was granted by Free State Department of Education. Eighty four (84) questionnaires were returned.

Ethical issues

Permission to conduct research was requested from the Free State Department of Education. The participants who participated in the study did so voluntarily. The aims of the study were made clear and the participants were assured of the confidentiality with which their responses would be dealt with. Questionnaires were either sent via e-mail or were delivered personally to the participants. Some of the participants sent their responses via e-mail or fax and other questionnaires were collected personally by the researcher from the participants.

Data Analysis

Descriptive and inferential data analyses were utilised.

Findings

Biographical data

Of the 84 school principals who answered the questionnaire 13 (15.5%) were female and 71 (84.5%) were male. The qualifications of the participants ranged from a basic Degree to a Master's Degree and their experience from less than five years to more than 20 years.

Leadership efficacy of school principals in instructional leadership and staff development

Table 2 Instructional leadership by gender and by qualification N=84

Statements	Instructional leadership efficacy by gender				Instructional Leadership Efficacy by Qualification							
	Male		Female		Master's		B. Ed. Hons		Bachelor's		Other	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
1. STAFF SUPPORT: How confident are you in:												
1. your skills to assess staff	5.08	1.38	5.38	0.93	5.57	1.02	5.47	0.98	5.15	1.04	4.33	0.52

development needs of your school.												
2. possessing the skills needed to implement the effective use of resources so that priority is given to supporting learners.	5.54	1.05	5.44	1.07	5.71	0.99	5.49	1.10	5.4	0.94	4.50	0.84
3. your skills to engage staff in the development of effective school improvement plans that result in improved learning.	5.54	0.97	5.63	1.15	5.79	0.97	5.63	1.27	5.5	0.89	5.17	0.98
4. understanding the development of a professional growth plan.	5.54	1.27	5.38	1.05	5.50	1.22	5.53	1.03	5.35	0.88	4.17	0.98
5. leading staff to appreciate the kinds of knowledge and skills learners and their families can add to the learning process.	5.38	1.19	5.08	1.17	5.07	1.21	5.23	1.31	5.05	0.94	4.67	0.82
6. your ability to understand and communicate to staff the complex instructional and motivational issues that are presented by a diverse learner population.	5.62	1.12	5.35	0.97	5.64	1.08	5.56	0.93	5.15	0.99	4.33	0.52
Overall Mean	**5.45**	**0.20**	**5.37**	**0.18**	**5.55**	**0.25**	**5.49**	**0.14**	**5.27**	**0.18**	**4.53**	**0.36**

The overall mean for leadership efficacy in staff support for male principals was 5.45 (SD=0.20) and for female principals was 5.37 (SD=0.18). The male principals therefore had a higher leadership efficacy than females.

The overall mean for principals with Masters degrees was 5.55; with B.Ed (Hons) 5.49; with Bachelor's degree 5.27 and other 4.53. The efficacy of principals in this category was directly related to the qualifications. The higher the qualification, the more efficacious the principals thought they were.

2. INSTRUCTIONAL SUPPORT: How confident are you in:

	Gender				Qualification							
	Male		Female		Masters		B.Ed/Hons		Bachelors		other	
	M	SD	M	SD	M	SD	M	SD	M	SD	M	SD
7. your knowledge of best practice research related to instructional practices.	4.92	0.95	5.23	1.06	5.50	1.09	5.21	1.06	5.1	1.02	4.50	0.84
8. your ability to develop a systematic process for mentoring teachers in your school.	5.15	1.52	5.10	1.30	5.21	1.31	5.21	1.32	5	1.49	4.33	0.82
9. understanding the process of curriculum design, implementation and evaluation.	5.38	1.19	5.35	1.06	5.79	0.89	5.35	1.09	5.35	0.88	4.17	1.17
10. your understanding of all of the instructional programs in your school.	5.31	1.38	5.27	1.19	5.36	1.22	5.33	1.34	5.3	0.98	4.50	1.05
11. your ability to demonstrate the effective use of technology to your fellow teachers.	4.77	1.01	4.77	1.44	5.57	0.85	4.49	1.45	5	1.34	4.17	1.17
Overall mean	**5.11**	**0.26**	**5.14**	**0.23**	**5.49**	**0.22**	**5.12**	**0.36**	**5.15**	**0.17**	**4.33**	**0.17**

Instructional support by gender: The overall mean score for male principals (5.11) and that of females (5.14) were found to be similar, although the females had an edge over the males. **Instructional support by qualification: Principals with Master's degrees appeared to be more confident or efficacious than those with lower qualifications.**												
3. PERSONNEL DEVELOPMENT: How confident are you in:												
12. your skills to lead staff to understand and respect the diversity of your learner population.	5.54	1.05	5.39	1.25	5.57	0.94	5.42	1.42	5.45	0.94	5.00	1.26
13. having a clear sense of your own personal development needs and the resources you can access to address those needs.	5.62	1.26	5.46	1.12	6.07	0.92	5.56	1.18	5.2	1.01	4.50	1.05
Overall Mean	**5.58**	**0.06**	**5.43**	**0.05**	**5.82**	**0.35**	**5.49**	**0.10**	**5.33**	**0.18**	**4.75**	**0.35**
Personnel development by gender: the overall mean score for males was 5.58 while that of females was 5.43. The males therefore were more confident than females in believing in their skills in leading staff to understand and respect the diversity of their learners, and understanding of their own developmental needs. **Personnel development by qualifications: The overall mean scores were as follows: principals with Masters (5.82), with B.Ed/Hons (5.49); with Bachelor's degrees (5.33) and other (4.75). The observation is that the efficacy of principals in personnel development is directly related to their qualifications. That is, the higher the qualification, the more efficacious the principals were or the more confident they believed in their skills in personnel or staff development.**												

Table 3 Instructional leadership by experience (N=84)

Statements	**Instructional Leadership Efficacy by Experience**										**Alpha**
	0-5 Years		**6-10 Years**		**11-15 Years**		**16-20 Years**		**Other**		
	M	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**	**M**	**SD**	
Staff Support: How confident are you in:											
1. your skills to assess staff development needs of your school.	5.23	1.17	5.24	0.97	5.31	0.79	5.60	1.07	5.4	1.07	.939
2. possessing the skills needed to implement the effective use of resources so that priority is given to supporting learners.	5.23	1.10	5.41	1.12	5.56	0.73	5.50	1.43	5.5	0.85	.937
3. Your skills to engage staff in	5.63	1.03	5.24	1.64	5.63	0.81	5.80	0.92	5.6	0.84	.937

the development of effective school improvement plans that result in improved learning.											
4. Understanding the development of a professional growth plan.	5.20	1.27	5.29	1.10	5.38	0.72	5.60	1.26	5.6	0.97	.934
5. Leading staff to appreciate the kinds of knowledge and skills learners and their families can add to the learning process.	5.07	1.11	4.76	1.52	5.19	0.91	5.40	1.17	5.6	1.16	.936
6. Your ability to understand and communicate to staff the complex instructional and motivational issues that are presented by a diverse learner population.	5.30	1.09	5.65	0.86	5.25	0.86	5.30	1.06	5.3	1.18	.935
Overall Mean	**5.28**	**0.19**	**5.26**	**0.29**	**5.39**	**0.07**	**5.53**	**0.17**	**5.50**	**0.13**	
The highest overall mean (5.53) for staff support is in the category of 16-20 years. This is followed by the overall mean score of 5.50 in the category of 20 years and above. These are experienced principals. On the whole the school principals in the study showed confidence in staff support.											
Instructional Support											
7. Your knowledge of best practice research related to instructional practices.	4.97	1.10	4.94	0.97	5.44	0.96	5.40	0.84	5.4	1.26	.937
8. Your ability to develop a systematic process for mentoring teachers in your school.	4.90	1.24	5.00	1.12	5.06	1.77	5.50	1.18	5.4	1.43	.938
9. Understanding the process of curriculum design, implementation and evaluation.	5.27	1.14	5.35	1.00	5.31	0.87	5.40	1.35	5.4	1.35	.936
10. Your understanding of all of the instructional programs in your school.	5.17	1.12	5.12	1.65	5.50	0.73	5.70	1.25	4.9	1.45	.936
11. Your ability to demonstrate the effective use of technology to your fellow teachers.	4.80	1.27	4.75	1.13	4.75	1.69	5.20	1.40	4.2	1.69	.939
Overall Mean	**5.02**	**0.19**	**5.03**	**0.22**	**5.21**	**0.31**	**5.44**	**0.18**	**5.06**	**0.52**	
The most confident principals were in the category of 16-20 years with a mean score of 5.44, followed by principals in the category of 11-15 years with a mean score of 5.21.											
Personnel Development											
12. Your skills to lead staff to understand and respect the diversity of your learner population.	5.30	0.95	5.44	1.85	5.44	0.81	5.90	1.10	5.5	1.27	.9.43

13. Having a clear sense of your own personal development needs and the resources you can access to address those needs.	5.30	1.15	5.75	1.18	5.75	1.13	5.50	1.18	5.2	1.32	.9.35
Overall Mean	**5.30**	**0**	**5.60**	**0.22**	**5.60**	**0.21**	**5.7**	**0.28**	**5.35**	**0.21**	

In this category the highest overall mean score was 5.7 in the category of 20 years and above, followed by categories 11-15 years and 16-20 years, respectively.

Discussion

The following research questions guided the study:

- What is the level of leadership efficacy of school principals in different dimensions of instructional leadership in the Free State Province?
- Are there differences in leadership efficacy of school principals in the different dimensions of instructional leadership as differentiated by biographical factors, such qualifications, experience and gender of school principals?
- What other contextual variables affect the leadership efficacy of the school principals in instructional leadership?
- To what extent is the school affected by the influence of such factors on leadership efficacy of the school principal?

First question

- What is the level of leadership efficacy of school principals in different dimensions of instructional leadership in the Free State Province?

The overall mean for the leadership efficacy in instructional leadership was 5.30 and the standard deviation was0.22. The overall mean of 5.30 is indicative of the fact that the leadership efficacy of school principals in instructional leadership and staff development is high. This means the school principals are confident in their ability to perform tasks linked to instructional development.

The mean for staff support was 5.39; for instructional support was 5.27 and for staff development was 5.13. This means that the leadership efficacy of school principals was found to be high in performing these tasks. The school principals were more confident in staff support, followed by instructional support which was then followed by staff development.

According to Moonsammy-Koopsammy (2012:33) school principals can provide instructional

The answer to the first is question is that level of leadership efficacy of school principals in different dimensions of instructional leadership in the Free State Province is high.

Second question

- Are there differences in leadership efficacy of school principals in the different dimensions of instructional leadership as differentiated by biographical factors, such qualifications, experience and gender of school principals?

When looking into the leadership efficacy of school principals in staff support by experience, the overall mean was 5.39 and the standard deviation was 0.12. The overall mean in instructional support by experience was 5.15 and the standard deviation was 0.18. The overall mean in staff development by experience was 5.51 and the standard deviation was 0.17. When we look at the leadership efficacy of school principals with different years of experience the findings were as follows: the highest overall mean (5.53) for staff support was in the category of 16-20 years. This was followed by the overall mean score of 5.50 in the category of 20 years and above. These are experienced principals. On the whole the school principals in the study showed confidence in staff support.

The overall mean of male school principals in staff support was 5.45 and the standard deviation was 0.20. The female school principals have an overall mean of 5.37 and the standard deviation of 0.18. The means indicate that the male school principal are more confident in staff support than female school principals.

In instruction support the female school principals show a slightly higher confidence in instructional support compared to their male counterparts. The overall mean in instructional leadership is 5.14 for female school principals and 5.11 for male school principals. The standard deviation for female school principals is 0.23 and 0.26 for male school principals.

At an overall mean of 5.58, the male school principals show a higher confidence in personnel development compared to female school principals with an overall mean of 5.43. The standard deviation for male school principals is 0.06 and 0.05 for female school principals.

When we look at the efficacy of school principals in instructional leadership by qualifications. The overall mean for principals with Masters Degrees was 5.55; with B.Ed (Hons) 5.49; with Bachelor's Degree 5.27 and other 4.53. The efficacy of principals in staff support was directly related to the qualifications. The higher the qualification, the more efficacious the principals thought they were. The findings in leadership efficacy of school principals in instructional leadership are that school principals with Master's degrees appeared to be more confident or efficacious than those with lower qualifications in instructional support. In personnel development, the overall mean scores were as follows: principals with Masters (5.82), with B.Ed/Hons (5.49); with Bachelor's degrees (5.33) and other (4.75). The observation is that the efficacy of principals in personnel development is directly related to their qualifications. That is, the higher the qualification, the more efficacious the principals were or the more confident they believed in their skills in personnel or staff development.

Growe and Montgomery, state that since men and women have different leadership styles, the variances do not mean that one has dominance over the other. The difference may be part to men seeing leadership as leading and women seeing leadership as facilitating. Women school principals focus in instructional leadership in supervisory practices and are concerned with student difference, knowledge of curriculum teaching methods and the objectives of teaching. Women leaders focus on instructional leadership, men often emphasise

organisational matters. According to Burns cited in Makau and Tanui (2014:3) a number of studies note that instruction is central to women leaders. Women leaders are likely to introduce support programmes in staff development, encourage innovation and experiment with instructional approaches. Smith also cited in Makau and Tanui (2014:4) in his own study found women principals to have significantly higher self-perceptions for instruction leadership. Makau and Tanui in their study found that there are differences in instructional leadership between men and women, in favour of women school principals. The findings of their study were similar to those of other researchers.

The answer to the second question, is that there are there differences in leadership efficacy of school principals in the different dimensions of instructional leadership as differentiated by biographical factors, such qualifications, experience and gender of school principals.

Third question

- What other contextual variables affect the leadership efficacy of the school principals in instructional leadership?

The contextual factors which affect the leadership efficacy in instructional leadership identified in literature include staff management-based challenges, challenges arising from the parents and student management challenges (Atieno and Simatwa, 2012:391).

The factors indicated by school principals in research conducted indicate the factors identified by school principals themselves. These factors include a lack of support for the school principals by the Department of Education, political interference, unions, the school governing body, lack of resources, socio-economic background, a lack of discipline, non-parent involvement, uncooperative teachers and unsafe environments.

It is important to note that these factors will influence the leadership efficacy of school principals in instructional leadership negatively.

Fourth question

- To what extent is the school affected by the influence of such factors on leadership efficacy of the school principal?

According to the findings of research conducted in the five districts of the Free State Province, the school principals indicated that the above mentioned factors make it impossible for them to do their work. The school principals state that these factors make it difficult for school principals to do their job effectively and this will affect the climate of the school. If the school principals do not feel confident about the tasks they need to perform, their confidence is affected and in turn this affect their leadership efficacy and the climate of the school.

Educational Implications

Instructional leadership is very important as it contributes to the success of the school, the success of teaching and learning process. If the school principals is confident in instructional leadership, that will lead to the success of the school. So we need a school principal who is confident in performing their duties as instructional leaders to motivate teacher to work and this will filter down to the learners as they will be motivated by the teachers to succeed in their work. School principals who are confident, create positive learning environments. It is only in a school characterised by a positive environment where effective teaching and learning will take place.

Conclusion

Looking at the results of the study, we can conclude that the leadership efficacy of school principals in the Free State Province in performing tasks associated with instructional leadership is high. Their efficacy in the performance of their duties is affected by biographical factors such as their educational qualifications, gender and experience. There are also a number of contextual factors identified by the principals themselves which have a negative effect on leadership efficacy of school principals in performing their tasks as instructional leaders. The most important thing is to note the contextual factors which have an impact on school principals and find ways of eliminating them, so that an environment for effective learning can be created.

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Learner public shaming a behavioral management strategy: Experiences of secondary schools teachers: A South African context

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Abstract

In this study, learner public shaming as a behavioral management strategy was explored with teachers in historically advantaged and disadvantaged schools in the Free State province of South Africa. The importance of learner behavioral management is an important one in the context of this study as the government strives to create an impression of effective schooling system. Participants were a purposively sample of six teachers (females=2 and males=4), their meaning teaching experience was 12 years. They responded to an open-ended in-depth interview on influences of learner public shaming as a behavioral management strategy. The data was analysed in themes. Findings show that teachers and their schools are likely to employ any learner behavioral management strategy that when perceived could match the efficacy of corporal punishment.

Keywords: learner public shaming, discipline, management strategy, corporal punishment

Introduction

Increasingly, schools are on the back foot to effectively manage learners; behavioral problems. These learners' behavioral problems, range from minor to grave misdemeanour such as not doing school work, late coming, to theft, use of vulgar language, copying during examinations, fighting and carrying of dangerous weapons (Govender & Sookrajh, 2014, Simuforosa & Rosemary, 2014, Maphosa & Mammen, 2011, Venter & van Niekerk, 2011). The schools that mostly experience learner disciplinary problems are likely to resort to extreme measures in order to diffuse the situation (Masitsa, 2008, Lewis, 2001). Otherwise, in all likelihood, the failures of these schools to properly manage these deviant behaviours are likely to be viewed as ineffective by the local communities in which the schools are situated.

The outlawing of corporal punishment in many countries left schools with no choice but to resort to alternative measures of learner discipline and control (Ndofirepi, Makaye & Ndofirepi, 2012, Mokhele, 2006). Some of these alternative disciplinary measures are counselling for minor offenses to detention, suspension and expulsion for serious offenses (Busienei, 2012). Counselling of learners in some instances is the function of both the school and the parent/s of the learners. This view is seen as being consistent with the acceptance of parents as primary teachers of their children (Moyo, Khewu & Bayaga, 2014, Joubert, de Waal & Rossouw, 2004). In some of the cases the teachers are left with no option but to use their own disciplinary discretion, especially where there is no lack of corporation between the school and the parent/s (Segalo, 2015, Ncontsa, 2013Bechuke, Debeila, 2012).

Studies indicate that schools that are situated in economically disadvantaged areas, violence ravaged and drugs inflicted are likely to experience severe learner behavioral problems (Jacobs, 2014, Silbert, 2013, Masitsa, 2011, Deacon, 2005). As such, these schools are supposed to respond to the challenges that are brought by these learners. Oppositely, these disadvantaged learners are likely to receive degradation and to some degree exclusions from education as some of their parents are not readily available when needed by the teachers or the school (Maphosa & Shumba, 2010, Harber, 2001).

The context of this study was therefore, to explore the extent to which secondary school teachers in South Africa employ learner public shaming in order to publicly punish unwanted learner behaviours. Additionally to explore the effects of these learners behavioral management practices on the learners by the teachers and their schools might have. This research examined the experiences of secondary school teachers on the management of

learners' behavioral problems through learner public shaming in a historically disadvantaged and advantaged school in South Africa.

Learner public shaming as a management strategies

Behavioral management of learners employed by teachers and the schools often bear a striking resemblance to the strategies used to punish adults in society (Noguera, 2010). In most likelihood, the teacher or the school is likely to rely on some form of shaming, ridiculing and sarcasm to chastise the learners who have broken a rule (Segalo, 2013). For minor offenses the offending learner might be reprimanded in front of other learners, detention and for serious offenses such as theft, fighting, cheating and defiance the learner might be asked to make a public apology to the whole school and removal from the school through suspension and expulsion from the school.

These forms of learner behavioral management are said to be archaic and not new at all. Foucault made this observation that schools are likely to punish offending learners in more or less the same way the courts will punish offending parents (Deacon, 2005, Garland, 1987, Driver, 1985. For minor offences, the offender might be paroled or engaged in community service while for the hardened offender prison for the appropriate sentence for the offence was viewed as befitting punishment (Alford, 2000, Sheridan). As much as desist from the infliction of pain on the body through corporal punishment emphasise has gradually turned to the pain that can be inflicted on the mind and the soul of both the offender and those who are witnessing the punishment.

Public shaming has been accepted as an affective form of punishment (Mongold & Edwards, 2014). Shaming as a form of punishment takes the form of making it known publicly what the offender has done (Antebi, 2008, Wong & Tsai). As explicated by Wong and Tsai learners form individualistic background are easily harmed when shamed and the case is different by learners from a collectivist background. Makogon and Enikolopov, (2013) view shaming as an important element of discipline as it teaches the offenders to be sensitive to other people around them. To some extent the offending learner is made to stand in front of the class and accept the wrongdoing and make a pledge not to break the rule again. In some schools where it was discovered that the offense was serious, the learner will be paraded in front of the whole school and apologizes. Book, (1999) alludes to a similar incident where a convicted thief is given the option of going to jail for a longer period or parading with a sign reading 'I AM A THIEF'. In the same way, detention, suspension and expulsion are some of

the management of learner behavioural strategies. The intention of suspension of the learner is to make it known to the school community that such a learner was sent home in order for other learners not to break similar rule again. In most likelihood, learners who are suspended from the school are likely not to return to the school again as it may be interpreted in the same way as expulsion from the school.

Goals of the study

This study examined the extent to which teachers in previously disadvantaged and advantaged secondary schools in South Africa employ shaming and sarcasm as learner behavioral strategies. The study was therefore guided by the following questions:

- What forms of public shaming and sarcastic intonations are mostly used at their different schools?
- What are the perceptions of secondary school teachers on the efficacy of public shaming and sarcasm on learner behavioral management? And,
- What are the perceived effects of shaming and sarcasm on the learners?

Method

Research design

The research approach adopted for this research study was a phenomenological interpretivist. The study investigated the ontological reality of shaming and sarcasm as learner behavioral strategies employed by teachers in South African school setting of which its intention was not to generalize but to understand what practices existed (De Gagne & Walters, 2010). This research approach sought to have a deeper understanding of shaming and sarcasm as employed by secondary school teachers rather than to generalize the findings of the study. This view is consistent with Terre Blance, Durrheim, and Painter, (2006)'s view that realities studied in the context of teachers 'learner behavioral management acknowledge the subjective experiences of the teachers. In the context of this paradigm participants are free to provide insights on their own practices as they are able to reflect and be probed to clarify their stances where it is necessary.

Participants and setting

A purposive sample of six secondary school teachers was employed for this study (female = 2; male = 4; age range 32 to 54; mean teaching experience 12 years) (Uys & Puttergill, 2005).

The rationale for the purposive sampling was that it was easy to access and locate the participating teachers (Durrheim & Painter, 2006). All teachers were based in both historically advantaged and disadvantaged secondary schools in the Lejweleputswa district of the Free State province. It was assumed by this study that the conditions of learner behavioral management by teachers or the school would not differ that much from other schools in the province.

Data collection

One on one in-depth interview was used to collect data from the six teachers' participants (King & Horrocks, 2010). Thus, conversations with these teachers were to establish their subjective views regarding their motivations, the culture of their school practices and attitudes towards a particular form of learner behavioural management (Silverman, 2008, Flick, 2010). The following were asked during the interview, specifically, what forms of learner public shaming are mostly employed by teachers or the schools as a form of behavioral management strategy and how effective are these forms of public shaming to learners at the school.

Procedure

The provincial Department of Education granted permission to undertake the research study after it was requested. The participants in this study consented individually (Glesne, 2011, Kvale, 2010 & Churton, 2000). The participants were informed of the aim, objectives, research methods and the nature of the importance of their participation. The teachers participating in this study were given false names. Individual interviews with the participants were conducted off school hours in terms of the research protocol agreement with the Department of Education. In order to ensure data trustworthiness interpretive validity was applied where the researcher and the researched mutually described and constructed the incidents of learner public shaming researched (Golafshani, 2003, Winter, 2000).

Data analysis

To ensure that collected produced findings that described learner public shaming as a behavioral strategy a thematic data analysis was employed (De Vos, 2002). The validity of the themes was substantiated alongside the literature control referencing related to the study on learner public shaming strategies employed by teachers and the school.

Findings and Discussion

The following are the key themes that developed from the analysis: implementation of public shaming as a behavioral strategy and the efficacy of this strategy to manage the behaviours of the learners. These typologies are deliberated next.

Theme 1: Assembly apologies

Assembly apologies takes the form of the offending learner's name is called in front of all the learners during the school assembly. The intention of this action by the school principal is ensure that the school rule that was broken and the offending learner/s are known by the school community. More so, the offending learner/s is also requested to accept the offence and offer their apologies to the whole school. The offending learners could have committed offences such as drinking alcohol during the school drips, cheating in the examination or fighting to mention but a few. A 52 year male school teacher Max from previously advantaged school agreed with this statement in this way:

> *We had this practice at our school for sometimes, previously this method of discipline worked at our school when the learners were fearful of the school rules. To be called in-front of all other learner was seen as a deterrent for unwanted behaviour at the school. It properly worked at our school because it is a boy's only school because its effectiveness was that other learners probably learned a good lesson and they will try to avoid it.*

One thing that was not mentioned by teacher Max in the above-mentioned statement was the stigma that the learner/s carries through their studies. The stigma was not only attached to the learners alone but to their families, communities as well as friends. That could be the reason a male teacher Bron, a 43 year old explained:

> *In one incident that I was attached to, a school boy who was accused of cheating during the mid-year examination was called to in front of all the other learners and teachers and made to admit and apologies. Though the boy admitted to the offence, it got stuck in his head and he later committed suicide.*

The two contradictions in the above-mentioned statements could illustrate the perceptions that are held by teachers and school principals regarding public shaming without looking at the devastating consequences it might have on the learners.

Theme 2: Learner school initiation practices

School initiation practices are practiced in many schools in South Africa under different pretexts. School initiation practice is mostly employed in affluent schools and to a lesser extent in poor school. It is mostly reserved for the new years at the school or to the new members of the prefect system or organization as the school. It is referred to as team building, team spirit or induction, but in most cases its intention is a subtle humiliation of the new members as they forced to commit certain acts that are against their will such as, acting in a particular way, being dressed differently or mimicking a particular animal. Failure to adhere these instructions one is likely to be expelled or ostracized from the group.

A 46 female teacher, Mag when interviewed on the subject had the following to explain:

> *This practice is our school culture. It teaches the new-year's about the culture of the school and the rules of the school. It further makes them to be more loyal and to respect their fellow school mates and their teachers. How will the first years know the rules if they are not taught to them.*

Theme 3: Closing of the school gates for late coming

It is a norm in many public schools that when learners are late for schools gates get closed behind them (Noguera, 2003:348). There are plausible reasons as to why the gates get closed; one of them is for the security of the learners who are already inside the school gates. Contrary, Noguera (2003) is of the view that the reason for the closing of the gates is for control purposes similar to the prisons structures.

A 38 male teacher, Samson, when probed about this practice and its implication on the well-being of the learners, stated:

> *"The security of the learners who are disciplined must be prioritized; learners who are late do it on purpose and they must be treated as such. They waste everybody's time"*

When further asked to clarify the purpose of closing of the gates, teacher Samson, replied:

> *"You see the purpose of closing of the gates is to control the flow of the learners who are inside the school and those who are outside during school hours. Through this we are able to identify who the culprits are so that they are properly disciplined"*

Though the statement in the above do not relate to learner public shaming, it could be deduced that closing the gates and making it public do have psychological impact on the learners.

Theme 4: Learner name labelling

Naming of learners or referring them to characteristics names that are not theirs is documented. The naming of learners by teachers in front of other learners is also called labelling. In some instances, the labelling of one learner will not only be used by teachers but by all other learners themselves. Learner naming or labelling linger for a long time in the head of the victim to the extent that it might lead to retaliation. Prinstein, Boergers and Verber, (2001) view naming or labelling as a form of overt verbal aggression used in the classroom situation where the teacher is a dominant figure; its purpose being to instil fear, ridicule and to harass learners as it conveys emotions and thoughts. A 41 Female teacher, Debra, suggested that learners are to be blamed for their wrong doing by stating:

> *"At times these learners will push you over the edge and you say something that you might later regret. At times I shout at them, but not swear words. And sometimes you say something to this learner at the whole class start laughing. Learners also give us names, they also laugh at us"*

The statement of teacher Debra suggest that learners at times they subtly do retaliate in their own way in the way they are treated by teachers.

Theme 5: Examination publications

Prior to democratic dispensation in 1994 in many schools the examination results of learners used to be announced verbally at the school assembly in view of everyone including parents. Those that did well will be congratulated and it will be a scorn for those who failed. Though this practice has waned, and now results are made private in sealed envelopes, the current matric senior certificate system are published openly in the local newspapers, even though learners can go to their local schools to get the results themselves. Making the matric results public, it is the assertion of this paper that its intention is reward and punishes those who did well and those who fared badly. Likewise, the purpose of the publication of the results in the newspapers is to create a spectre, limelight and euphoria of triumphant and loss. The learners who failed to pass the matric, possibly, painfully languish silently at the back of the stage created in front of them, and many are never heard of again. A 34 teacher male teacher Druzz

when asked about the nature of the publication of the examination results in the newspaper responded:

> *"This is the best way to see who has been doing what. All the learners who passed are printed out in the newspaper to see and those who do not appear is known that they did not listen to their teachers. It is a kind of payback time; it is a time of harvest". This is not a time to feel pity but to celebrate with those learners who did us proud"*

The statement of teacher Druzz could mean that teachers enjoy some kind of punishment meted out to the learners who misbehaved in one way or the other.

Theme 6: Suspension and expulsion

Suspension or expulsion of the learner from the school imply that the learner is temporarily or permanently given the matching orders out of the school for any kind of offense that fit the action. The aim of the suspension or expulsion of the learner from the school seems to suggest that the inside person of the learner and not the outer person is central. The suspended or expelled learner is likely to make a reflection on his life as he or she is separated from his or her friends and the opportunities lost. Suspension and expulsion of the learner is further likely to emotionally involve the family of the suspended learner. Asked about the efficacy of this practice, Mr Dan a 52 male teacher stated:

> *"It is the law of nature, a rotten potato must be removed from the rest of other potatoes otherwise the whole bag will be rotten. It might not work for the individual suspended or expelled learner, but at least the school is saved"*

Mr Dan further stated:

> *"It is not uncommon that the suspended learner will come back to school, as the lost learning time cannot be recouped. Both the suspension and expulsion are hard lessons for the learners to behave well in the future. To make it tough, no school is likely to take in the suspended or expelled learner as he or she brings trouble to the school"*

Mr Dan 'statement implies that suspended or expelled learners from the schools are stigmatized in way that make it difficult for them to be re-enrolled again in the school community.

Summary and Conclusion

The size of the sample, context and the theoretical thrust of the study could count as the limitation of the findings of this study within a South African setting. However, the findings of this study could make a contribution for different settings and different research approaches. The review of literature review and the findings of the study suggest that the domain of learner behavioral management is a contested terrain informed by different philosophical leanings towards what education ought to be.

The deduction made is that teachers and schools seem to have a deep seated desire to find an alternative to corporal punishment as a measure to discipline learners. Furthermore, it will suffice that the alternative disciplinary measures at hand for teachers to implement do not have the desired efficacy similar to corporal punishment. As a result, it could be rationalised that teachers and schools have resorted to subtle ways such a learner public shaming as another alternative to corporal punishment even though it might not have the same effect as corporal punishment.

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Managing teaching and learning in Postgraduate programmes in a University of Technology: Challenges and Prospects

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Abstract
This paper examined teaching and learning practices in postgraduate programmes (teacher education) at a South African university of technology (UoT) from the perspectives of academic staff and students. Research shows that good instructional management practices enhance teaching and learning and ultimately ensure higher throughput rates. Data for the study were collected through two open-ended questionnaires. Drawing on the experiences of four academics and insights of ten postgraduate students in education, this qualitative study showed that South African higher education practices have not shifted much from the generic and traditional instructional forms and have not fully grabbed opportunities presented by technology-enabled tools, resources and advancements. This is despite the institutions' grappling with fundamentally underprepared and at risk students, recruited in response to addressing issues of equity, access and massification. The paper proposes the adoption of a reflexive pedagogy, guided by technology enhanced learning and that aims at creating independent life-long learners. The paper argues that such congenial prospects in Universities of Technologies are possible.

Key words: *Instruction, qualitative, questionnaire, management, South Africa.*

INTRODUCTION

One of the cornerstones of the Higher Education policy in South Africa relates to its responsiveness to the challenges relating to changes in context and delivery of academic programmes (Higgs and van Wyk 2006). The delivery of content in respective academic programmes is the task of academics who aim to produce quality programmes and graduates. Academics use student and teacher centered approaches to teaching. Teaching methods are ways through which information are presented to learners to achieve specific educational goals (Cruz 2013). Chickering and Gamson (1987) have opined that successful teaching and learning practices yield seven critical advantages. A critical advantage cited is that it encourages contacts between students and teachers. Such teaching is said to reciprocity among students. Research shows that there is no one best way or approach to instruction (Clarke 2013; Guvender 2013). In facilitation, some education goals are better suited to teacher centered approaches while others need learner centered approaches. Active learning techniques that emphasize time on task approach while recognising diversity are suggested by Chickering and Gamson (1987). Some researchers (Stoddard, Connel, Stofflett and Peck 1993; Gravett and Geyser 2009) condemn the use of teacher centered approaches arguing that it is grounded in behaviourism. In behaviourist contexts, learners tend to be accustomed to being passive recipients of information hence tend to conform to the status quo. Steele (1997) has advanced the general theory of identification to explain success inhibitors in school context and how school practices can reduce threats to student academic performance.

The South African Context

Most students in South Africa's higher education sector come from historically disadvantaged contexts. The impact this has on the academic quality and performance of some of the candidates is quite telling. As part of redress and massification of higher education, some former black universities have had to enrol lowly qualified, underprepared and disadvantaged students (Makura, Skead & Nhundu, 2011). This stems from competition for the bright students among the higher education institutions in South Africa. Moreover, the shifting discourse of the academic provision from a small racial group (apartheid legacy) to the entire curricula (McKenna, 2003) has been compounded by academics ill prepared for such challenges. Due to the large students' numbers, some academics have resorted to unorthodox assessment techniques (e.g. giving multiple choice questions and group tasks where free response questions would be more appropriate**).** This tendency compounds the challenges experienced by students from historically disadvantaged contexts.

It is therefore widely believed that the socioeconomic status of the majority of black learners largely contributes to how they perform in universities. As such, incongruences in student perceptive and intellectual skills due their home environment tend to affect their performance academically (Howard, 2001; Steele, 1997). Though the medium of instruction in most South African high schools is English, such learners find it hard to communicate, read and write academically in English. This is because of the strong home language background usage by most teachers in schools. It then becomes something of a 'culture' to teach in the home language. It is disheartening as a teacher or educator to notice that most students have the zeal to learn and know what to say but the major challenge lies in putting it in black and white. Moreover, though these students would have managed to pass their Matric or school leaving examinations and enter university, most of them lack basic needs from home environment which negatively impacts on their education. On the other hand if a learner comes from a family background where the parents are educationally, socially and economically sound, then the chances of that learner having a higher level of academic achievement is high. Consequently, I believe the Maslow hierarchy of needs does play a pivotal role in determining whether or not we are able to produce well rounded students who are able to fit, work and contribute to the society.

The postgraduate students' journey

The postgraduate journey is an audios one. It is one of identity formation (conceptual framework i.e. changing the way one looks at the world) since the student works independently of the lecturer in most respects. The journey begins with both the teacher/supervisor and student walking side by side as 'learners'. Tichapondwa (2013:25) opines that "the supervisor immediately becomes a student along with the student". The student needs to be guided systematically in order to create and apply knowledge while addressing contemporary challenges besetting society. The signposts along that journey are the curricula that the student engages with. Regular feedback (Chickering& Gamson, 1987) and constant monitoring are critical aspects in that journey. In our daily practice we need to remind our students of the need to remain focused while upholding the right ethical standards and practices. It is through such an approach that the student can develop "competent autonomy" (Grant, 1999). Leshem and Trafford (2007) cited by Vincent (2013) opine that the process of developing a conceptual framework within an academic journey is a "maturation process for the researcher" which assists not only in research decisions but "impacts on way we see world around us". Wisker (2009) also cited by Vincent (2013) suggests that undertaking the doctorate for instance, can lead to "ontological change" for the researcher. The student develops new ways of thinking and viewing the world. Old thought patterns may be discarded and new ones adopted and the student learns to take a position and defends that position. But this could be fraught with impediments.

Some of the tensions in the postgraduate student's journey, it is claimed, emanate from the practice of using the traditional approach by academics. Such approaches are not always appropriate for the contemporary context in which we find ourselves in. In my view conflicts emanate from varying perceptions regarding the academic journey. Traditional supervisory approaches are practices that view students as children that need to be handled and leashed along the 'formal' academic journey (paternalistic tendencies). Such approaches are akin to the "Jug-Mug theory" where the student is believed to be devoid of academic and research knowledge (blank slates), hence need to be assisted through 'pouring' such knowledge into their heads! Such patriarchal approaches are rigid since they are based on unflinching dominant/ subordinated binaries. Traditional approaches therefore reinforce notions of the superiority of the supervisor's knowledge (Bogo & Dill, 2008). The supervisee is perceived to be incapable of journeying alone hence cannot be trusted to journey alone. Hence traditional pedagogical approaches could be supplemented through academic reciprocity wherein all role players have much to offer in creating a postgraduate candidate.

Supervisor and supervisee relationship

The relationship between postgraduate supervisors and their supervisees should not be rigid. Rigidity takes many forms. Some human beings are by nature rigid. Some supervisors are rigid in that they are closed to feedback. Students have to struggle to get any form of feedback from them and when they eventually do, supervisors show lack of compassion; are ostentatious and tend to be egotistical. At times the rigidity of the supervisors' emanates from their lack of supervisory skills and lack of insight from the student point of view. They are negatively critical of what the supervisee does (in some cases to cover up their own deficiencies.

Therefore, what would count as not rigid is for the supervisor to be flexible. A supervisor should not use consultation times, for instance, as a tool for bragging about academic knowledge and successes. Neither should supervisors be judgmental or blatantly critical of the students' views. A good supervisor should be accommodative and be available to the student and should show a sense of preparedness at all times. Good supervisors need to attend refresher courses so as to keep abreast of the dynamics of educational theory and practice. They should exhibit good communication skills, have good human relations, give constructive feedback, approachable, enthusiastic and demonstrate expert knowledge in their area of specialty.

Theoretical framework

This study adopted Grant's (1999) competent autonomy framework. His model explains how learners perceive learning under the guidance of able supervisors. Grant (1999) proffered four models of supervisory practice. The first one was dubbed "Direct active". This is synonymous with I referred to as "traditional approach". It involves directing and telling the client what to do. It is an authoritarian approach that is laced with mistrust and doubts about the abilities of the supervisee. The second one is the "Indirect active" wherein the main player seeks for opinions and suggestions. In a supervisory scenario, the supervisor asks the student for opinions and justifications. The student is given leeway to make a stand on an opinion or episteme. The third mode, according to Grant (1999) is referred to as "Indirect passive" wherein the supervisor listens and awaits for the student's input. The student is given ample opportunity to process his or her ideas as well as solving challenges. This mode is akin to what Poole (2010) calls "introspective reflexivity". The last mode is referred to as "Passive". As implied by the term, there is no input from the student. If ever a student suggests something, the ideas are quashed. This mode is similar in some respect to the "Direct active".

I seem to favour the second mode 'indirect active'. This enables the supervisee to direct his/her learning (self-regulated learning or learning through discovery). This mode is also similar to the apprenticeship model where the learner learns from the wise counsel of the role model. It is a technique I use frequently when supervising my students. I always pose problem-solving questions each time a candidate submits work. I cause a candidate to think deeply on any submitted work. I train students not to be gullible but to be critical of his or her work. But in instances where a student slackens I may need to resort to the "Direct active" mode. Some students have the ability but have the proclivity of drifting into laziness. As such some polite whiplash may act as a motivating factor. But if the student is on board, there may not be any need for 'hand handling'.

METHODOLOGY

The study was grounded in the interpretive paradigm wherein the lived experiences of participants' experiences are regarded as paramount (Cohen, Manion & Morrison 2001). This paradigm relies on respondents' eye witness accounts. It is an approach best suited in investigating participants' attitudes, beliefs and perceptions (Terre Blanche & Durrhein 1999). Pursuant to the preceding notions, I posed and addressed two research questions: 1. how do academics at a University of Technology view their teaching or facilitation? 2. How do students view or experience the teaching or facilitation of their course lecturers?

I administered a group designed open ended questionnaire to four (4) academics who work with postgraduate students at a University of Technology. I also administered a semi-structured questionnaire to a class of over thirty postgraduate students. This paper reports on data from ten usable instruments of students that volunteered to respond. Both groups consented to participate in the study. In keeping with research ethics, I assigned pseudonyms to each of the academics (L1, L2, L3 and L4) and to each of the postgraduate student students (1, 2, 3, 4 etc.). Both instruments consisted of the following generic segments viz: biographical information, perceptions on teaching/facilitation and general questions on the quality of teaching or learning in specific disciplines taught or learnt. Lecturers for instance were expected to explain their specific teaching and facilitation practices (reflect on teaching/facilitation). Each of these sections (save for the biographical section) required the respondent to elucidate.

RESULTS

Biographical information of respondents

All respondents were black male lecturers working fulltime in the department of education (school of teacher education). The specific subjects/courses cited were: Design and Technology Education (L1); Language Education (L2); Education (L3) and Education and Professional Studies (L4). Two respondents (50%)(L2 and L3) were in the age range 46-50 years, and the remainder each in 41-45 years (L1) and over 50 years (L4) respectively. This shows that the lecturers were mature and experienced educators. As such they were in a position to comment on issues of facilitation in a higher education context. The student cohort consisted of male and female respondents pursuing a Bachelor of education honours degree. This paper reports on respondents' perceptions regarding the management of teaching and learning programmes.

Academics' perceptions of teaching/facilitation

The first research question required the respondent to comment on teaching in general. Three sub questions were posed. The first question required the respondent to explain how he/she introduced a new concept/topic to students. Two respondents, L1 and L2 said that they used the association strategy, whereby they linked the learners' prior knowledge to the new information. L1 said that "I introduce a new topic by associating it with pre-knowledge of the student". Respondent L2 said that he '-recap previously learned knowledge that is linked to the new concept'. Respondent L2 went further to state that he used storytelling, giving scenarios, video use and question and answer approaches. Respondents L3 and L4 used case scenarios. Respondent L3 (as was with L2) also revealed that he brought up something with relevance to the topic such as showing slides and asking '…a few leading questions'. Respondent 4 said that he created scenarios that '…stimulate thinking towards topic of the day'.

Sub-question 2 of the sought the lecturers' comment on the ways they involved students in their lectures. All respondents agreed that they invariably involved their learners. Respondent L1 adopted several strategies/approaches. He cited peer teaching, presentations, project, debates, assignments and '…making the lecture learner centred'. Respondent L2 used grouping, while L3 asked questions and L4 likewise used question and answer format. Sub question 3 of the second segment of the questionnaire required the respondents to describe their respective teaching/facilitation style. Respondents L2 and L3 said that they used both the teacher and learner centered approaches, while L1 and L4 used the learner and teacher centered styles respectively. In justifying their preference for both styles, respondents L2 and L3 said that each teaching encounter required a particular style. Said L3 "…depending on the situation, one style is given priority over the other". Respondent L4 said that a style depended '…on the subject matter'. In adopting the learner centered approach, L1 said that 'the student is responsible for building their knowledge and understanding of the subject matter…'. Respondent L4 justified the teacher centered style 'because of the size of the class, one is compelled to use lecturing…'

Activities/tasks

The first sub-question of the lectures' questionnaire demanded the respondent to list the activities they gave to their students during contact or class sessions. There were divergent views on this question. The following were the divergent responses:
L1 said "activities and tasks aligned to the intended learning outcomes'

L2 said "..i would give them knowledge acquiring activities"
L3 said "mock questions, case studies, scenarios"
L4 said "discussion exercises: they are grouped into 10 or less"

The second sub-question sort to establish the nature of questions that the lecturers posed during questions and the justification thereof. Respondents L1 and L4 said they used both high order and low order questions. Respondent L1 said "mixed: to assess all levels of understanding". Respondent L4's justification for a mixed approach was meant to 'avoid fixation and also that they should be aware of what to expect in tests and exams'. In preferring high order questions, respondent L3 said that learners '…got a chance to think deeply and broadly about the topic' while respondent L4 believed that high order questions 'required their judgment and critical thinking on a specific subject'.

The third sub-question in this segment demanded the respondents to describe the nature of tasks meant to measure students' understanding during sessions. Results revealed divergent views on this aspect. The following responses buttress this assertion:
L1 said 'they cover all the six levels of knowledge'
L2 said 'formative assessment in order to ensure that whatever has been taught was clear to them'
L3 said 'case studies/scenarios where they need to show understanding…'
L4 said it was 'impossible to assess after every session …. [because of] 'The overwhelming number of students'.

Subject content

The first sub-question required the respondent to rate him/herself on the subject matter competency in the education discipline. Two (50%) of the respondents (L1 and L2) said that they were **very** competent while the other two (50%) (L3 and L4) said that they were simply competent. Respondent L1 said that he was 'an expert/specialist in the learning area'. Respondent L2 said that he was very competent because '...I write books, articles, and chapters about what I teach'. Respondent L4 attributed his competency to the 'my studies [that] have prepared me well to teach the subjects' as well as the '…over 20 yrs experience'.

The second sub-question centered on whether or not the lecturers provided the students with examples meant to deepen students' understanding. All respondents answered in the affirmative. In explaining their responses, divergent justifications were noted and these were discipline specific. For instance. Respondent L1 said that 'not all students are operating at formal operational stage…'. Respondent L3 said that he used 'practical examples of situations in schools…'. Similar sentiments were expressed by L4 who opined that 'I try to relate what I teach to the teaching situation…'

The last question in this segment asked if the respondents were comfortable to continue offering the courses they were teaching. All respondents agreed they would. In explaining their choice for assenting respondent L1 for instance said his '…knowledge and experience [needed] to be shared with students. L2 said that he thrived and tapped on the experience and approaches of other lecturers. Respondent L4 said continuing to teach the subject was '…fulfilling to teach what you are comfortable with'.

Improving teaching

The last segment of the lecturers' questionnaire focused on issues around reflecting on their teaching. The first sub question asked if the lecturer offered students opportunities to give

feedback on their teaching. All respondents answered "Yes". Asked to elaborate on their answer, Respondents L1 said "it is important for me to know if I am reaching all my students and where I need to improve". Respondents L2 and L4 said that they used assessment forms to garner feedback. Respondent L2 said that his students filled 'some evaluation forms' wherein varied responses are obtained while L4 said '…the questionnaire/assessment form that students fill to give feedback on my teaching…' Respondent L3 said that evaluations helped him to 'reflect on my way of doing things'

The second sub-question sought the respondents' views on the aspects of their lecturing that needed improvement. These issues were viewed as challenges the lecturers encountered. Responses from L2 and L4 centered on the use of technology in teaching. L2 said 'incorporating technology in what I am currently teaching' while L4 complained that he found it hard to teach large classes when a projector failed him. Respondent L1 said that he needed more remediation time in assisting under-achieving learners. Respondent L3's grey area related to balancing '…different teaching styles'.

The last sub-question required respondents to say whether or not the respondents utilised technology for teaching and learning. Three (75%) of the respondents agreed that that they used technology while one (L2)(25%) said he did not. Respondent L1 used technology '…95% of the time….for effective teaching/learning and to lessen the burden on the lecturer'. Respondent L3 said that technology assisted 'students a lot and makes them more confident and comfortable'. Respondent L4 said he used 'a data projector most of the time'.

Students' perceptions of lecturers' teaching or facilitation

The students responded to nine open ended questions focusing on various dimensions of teaching and learning. I report on those that enlisted their views on the teaching proficiencies of their lecturers. In commenting on the quality of lecturing, the respondents agreed that it was of a high quality. Below are some of the sentiments from the respondents.

Respondent 20 said "The lectures are good at their job and they research well and prepare well before coming to class". Student respondent 5 "Lecturers who offer facilitation comes to class prepared". Asked if the lecturers involved the students in the learning/teaching processes most respondents were in the affirmative. Student 5 said "Yes, there is interaction between the lecturers and the student. One's opinion is allowed and there is open discussion about the lesson presented". Respondent 10 weighed in saying "Yes, because they do ask us questions" while 17 cornfirmed "Yes, they always explain". Respondent 3 agreed with the others saying "Yes, they always allow questions and allow inputs from students".

Regarding the quality of teaching on teaching, all respondents were in agreement that it was high. Respondent 3 said "the quality of lecturing is up to expectation". Student 14 simply said "Good". Perhaps respondent 9's response summarised the sentiments of others. She said "as first year in this university, I find the lecturing being very interesting. They make us feel that u are at varsity. You are being let alone to do your own work". When asked also about what they enjoyed most during lectures, candidate 9 for instance said "Exchange of views; Being listened to". Respondent 5 said that "lecturers are open minded and innovative", while student 6 enjoyed "examples given by a lecturer". Asked In general the respondents said, involved the students in the lectures through posing thought provoking questions.

On the issue of teaching facilities or venues, the respondents said venues were endowed with gadgets such as overhead projectors and computers. Respondent 20 was modest in her response " Good standards" while respondent 3 elaborated by saying " Yes, teaching facilities are adequately available. Most lecture halls are having computerised data projections". Respondent 12 argued that the facilities were not adequate. The last sought respondents' views on what they felt the institution could do to enhance their learning. Varied ideas were raised. Respondent 9 focused on student registration "Professionalism when it comes to student registration". Student 12 pleaded with the university to "change time or lessons". Student 17 and 20 were respectively happy with the status quo arguing "is perfect", and "so far all is good standard for me". Respondent 21 pleaded with lectures [presumably] to "show up for classes". The preceding accounts hasten the notion that the teaching and learning scenario is characterised by the traditional and generic approaches.

DISCUSSION

From the foregoing it can be deduced that lecturers relied on the generic teaching methods in teaching/facilitation. Two of the lecturers relied on the association strategy, whereby they linked the learners' prior knowledge to the new information. The other two respondents used case scenarios and visual aids such as slides. In all these cases, the questioning technique (Cruz 2013) was more pronounced Some respondents also concurred that lecturers did ask good questions. As such, all lecturers involved their students in the teaching and learning situation (Steele 1997). The nature of involvement ranged from peer presentations, grouping to teacher centered approaches. However these approaches depended on different circumstances of respective lecturers. These included class size and nature of subject matter. Generally, respondents were agreed on their reliance on learner centered approaches (Biggs & Tang 2011; Chickering &Gamson 1987) as opposed to teacher centred approaches (Stoddard, Connel, Stofflett & Peck 1993). This aspect was highlighted by Student respondent 12.

Lecturers confirmed that they indeed gave a variety of activities to their students during contact or class sessions. These varied from one respondent to another but they focused on capacitating learners and achieving learning outcomes. Examples cited included mock questions, case studies, scenarios and discussion exercises. As regards the nature of questions posed by lecturers during lectures and the justification thereof, half of the lecturers said they used both high order and low order questions. The other half used a mixed approach that enabled learners to think deeply and broadly (Biggs & Tang 2011; Gravett & Geyser 2009; Burmeister 1995). All respondents agreed that the questions measured students' understanding (Clarke 2013) during sessions. Respondents were however not agreeable on the nature and purpose of tasks meant to measure such understanding. Hence Poole's (2010) call to supervisors to engage in reflexive practice.

A theme that ran in the narratives of most respondents related to improving teaching or reflection on teaching. Lecturers confirmed that they reflected on their teaching through requesting learners to comment on their teaching. Respondents L1 for instance said "it is important for me to know if I am reaching all my students and where I need to improve". Respondents L2 and L4 said that they used assessment forms to garner feedback. Respondent L2 said that his students filled 'some evaluation forms' wherein varied responses are obtained while L4 said '…the questionnaire/assessment form that students fill to give feedback on my teaching…' Respondent L3 said that evaluations helped him to 'reflect on my way of doing things'. Students' responses

revealed diverse views that ranged from administrative to instructional ones. They appreciated the technology that was available for teaching and learning; a notion that the lecturers also raised. L2 said 'incorporating technology in what I am currently teaching' while L4 complained that he found it hard to teach large classes when a projector failed him. A lecturer said that he needed more remediation time in assisting under-achieving learners (L1) while another academic's grey area related to balancing '…different teaching styles' (L3). Most lecturers confirmed that they used technology for teaching and learning a scenario that I viewed as critical in modern teaching and learning. It is an approach that develops good instructional practices in lecturers grappling with fundamentally underprepared and at risk students (Makura, Skead & Nhundu 2011) recruited in response to issues of equity, access and massification of South Africa's higher education.

CONCLUSION

In answering the question: how do academics at the University of Technology view their teaching or facilitation, I came to the following conclusions:

1. Lecturers relied on the generic teaching methods such as using learners' prior knowledge and case scenarios. They also involved learners in their teaching.
2. Lecturers gave a variety of activities during teaching. Both higher and lower order questions were posed and these reportedly promoted deep learning.
3. Participants opined that they were competent academics in the areas they were facilitating and were in a position to continue doing so.
4. Participants opined that they offered students opportunity to reflect on their teaching. From such reflection, they hoped to improve on their teaching methods particularly.

In addressing the question relating to postgraduate students' perceptions of how they viewed or experienced the teaching or facilitation (Howard 2001) of their respective courses. Data revealed that the postgraduate students had positive attitudes towards the activities and processes. In summary data, revealed that:

(a) Students were happy with the instructional proficiencies of the lecturers.
(b) Lecturers involved students during their lectures through asking them challenging and thought provoking questions
(c) The university studied has adequate technological gargets that were utilised by the lecturers.
(d) Students reported a variety of challenges ranging from administrative to instructional ones.

RECOMMENDATIONS

Given that most lecturers relied on the generic teaching strategies, the paper reinforces contemporary trends that call for active engagement by lecturers with modern day instructional technology. Observations outside this study revealed that the University of Technology has modern day, up to date and sophisticated gadgetry which conscientious lecturers could utilise to enhance teaching and learning. The adoption of such a reflexive pedagogy, guided by technology enhanced learning will create a critical mass of independent life-long learners. Such congenial prospects in Universities of Technologies are possible if concerted efforts are exerted in keeping abreast of modern day instructional and technological advances. Any challenges, perceived or real can be translated into bright prospects for higher education instructional management.

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PROPOSING GUIDELINES FOR THE IMPLEMENTATION OF MULTICULTURAL EDUCATION INITIATIVES IN INTEGRATED SCHOOLS OF SOUTH AFRICA

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ABSTRACT

The purpose of this paper is to propose guidelines for the implementation of multicultural initiatives in integrated school settings of South Africa. Developments in the post - apartheid schooling sector in South Africa gave origin to the movement of black learners to historically white schools. The subsequent emergence of learners stemming from diverse race, cultural and religious orientations, attending these integrated school settings had to adapt to the European culture and traditions of these learning institutions- a situation black learners were not previously exposed to and the predominantly white teacher staff components, not prepared and/or trained for. Amidst, the progress made by some historically white schools to become fully integrated, the majority still appear to function as mono-cultural learning organisations and as such, favour contributory approaches to multicultural education. Contributory approaches to multicultural education seem to uphold the European school culture, entrenched in the teaching and learning engagements with learners. With the latter said in mind, we as authors of this paper, interrogated the findings and recommendations of three different multicultural research studies conducted over a ten year year period at various integrated schools (historically white schools) in the Northern Cape province of South Africa. Qualitative research, underpinned by a content analysis methodology was employed for identifying themes for the development of multicultural development initiatives, suggested for implementation at these learning settings. The processed data revealed that needs, priorities and content aspects identified for multicultual development are invaluable in fostering inclusive and diverse school practies. This paper further recommends the use of guidelines for the implementation of appropriate development strategies, based on the global perspective to multicultural education as a means of promoting school integration in integrated learning settings, such as historically white schools.

KEYWORDS: Guidelines, Development Initiatives, Integrated Schools; Multicultural Education

1. INTRODUCTORY ORIENTATION

The purpose of this paper is to propose guidelines for the implementation of multicultural initiatives in integrated school settings of South Africa. Developments in the post-apartheid schooling sector in South Africa gave origin to the movement of black learners to integrated schools, such as historically white schools. Educators (predominantly white educators) were now challenged with teaching a diverse group of learners- a situation for which teachers and especially white teachers might not have been trained or prepared for (Kivedo, 2006). Whilst acknowledging the progress in South African schools with school integration, some integrated schools persist to operate as mono-cultural organisations. Learners from different backgrounds must adapt to the European culture and traditions being uphold in these school settings. The experiences and worldview orientations of black learners are based on the expectations of white teachers, who appear not to be prepared for their teaching roles in a democratic and diverse compensation (Goduka, 1999).

Furthermore, School Management Teams and School Governing Bodies of integrated schools in South Africa tend to allude the constitutional directive and transformational imperative of equity by forming their own conception of "quality education" and "standards" as a means of delaying and in most cases being opposed to the appointment of (well) qualified, competent and in some instances, experienced black educators. These schools seem to use their own construction of standards as a way of re-articulating their concerns of race and class and as such, appear to displace and defer considerations of racial equity. Upholding standards may be interpreted as a non-negotiable, justifiable and acceptable means to exclude black teachers from staff appointments (Soudien & Sayed, 2004). Literature further suggest that more than 75 % of the teaching staff in historically white schools in South Africa are white. Historically white have open t heir doors for black learners, but have not seriously engaged with the issue of black teacher appointments- this equity imperative is critical to the development and enhancement of educator competencies in a diverse school context.

The latter situation is not only exclusively confined to the South African school situation. The current teaching population of the United States of America consists of 90 % white professionals, where the majority are white female middle class educators. It is further predicted by Banks and Banks that by the year 2020, learners of colour will comprise of 46% of the total learner corps and by 2035, this group will constitute the majority of the elementary and secondary school population (Hui-Min Chou, 2007). A thought for school planners and administrators will certainly to explore ways in dealing and responding to the increasing diverse learner population. Providing quality education and equitable education opportunities for all learners should be the ultimately aim of all education authorities across the globe. This scenario therefor necessitate that pre-service and current practising teachers especially, white teachers need to be prepared for their new roles in integrated school contexts- this necessitates the initiation of development initiatives geared towards a rethinking of teaching philosophies, pedagogical approaches, learning styles, curricular issues, diversity, classroom dynamics and parental involvement strategies (Hui-Min Chou, 2007; Alexander, 2004). Future planned teacher training and development initiatives should therefore be premised on the universal aims, goals and characteristics of multicultural education.

Educational transformation in post-apartheid South Africa is driven by key constitutional directives and the provision of an education system focussed on enhancing democracy, human dignity, equality and social justice. All these changes gave origin to the practice of multicultural education. Bennett (1990) in particular, regards educational transformation as a process towards achieving equal opportunity and equity among all citizens, particularly ethnic minorities (black majority as in the case of South Africa) and the economically marginalised. The South African society, after having adopted one of the most progressive constitutions in the world, are still challenged after over twenty one years of democracy with various forms of racism, injustices and inequalities which appear to impede negatively on schooling and the higher education sector (Alexander, 2004).

2. BACKGROUND TO THIS STUDY

This paper attempts to report on the integrated schooling context of the Northern Cape province in South Africa. Three different, but related studies were conducted on issues relating to multicultural education over a ten year period. The researchers explored using the contents of these studies to propose guidelines for the development of multicultural education initiatives in integrated school settings. The studies employed in historically white schools are as follow:

Study 1- ascertained the design and evaluation of a staff development programme for amalgamated schools in the Northern Cape;
Study 2- investigated the state of multicultural education and the design of a multicultural education programme for Northern Cape school and
Study 3- determined the scholastic experiences of black learners in multicultural Further Education and Training schools in the Northern Cape.

The researchers who conducted these studies have over 70 years of combined teaching experience; taught at various multicultural school settings; held middle –and senior management positions whilst employed in the Northern Cape Department of Education and deployed as members on departmental and ministerial task teams to support the education authorities with the implementation and investigation into multicultural educational policies, practices and challenges.

Northern Cape integrated schools, such as historically white schools, have admitted black after the demise of South Africa's apartheid system. Many of these schools seem to have adapted their admission requirements, school policies and classroom practices for a diverse learner population. However, media reports refer to incidences of racism and racial conflict still occurring at some historically white schools. Mpisi (2010:3) and make the following comment in this regard "After more than a decade of democracy, I would be expected that South Africa has achieved integration into a harmonious society, where racial prejudice, cultural stereotyping and gross human rights violations have been relegated to the apartheid archives. Racial conflict, derogatory racial terminology, modern racism, racial separation and discrimination are but some of the accusations levelled at historically white schools.

3. THEORETICAL FRAME WORK

Ameny-Dixon (2010) subscribes to a global perspective which recognises cultural pluralism as an ideal and healthy state in any democratic dispensation geared at promoting equity and respect amongst the existing cultural groups. Alexander (2004) makes a case for an integrated approach to cultural pluralism and say that any form of pluralism needs to exceed the side-by-side coexistence of different groups values and styles. This approach encourages participation, reflects contributions of and affirms the equal value of various groups in a democratic dispensation. Therefore, according to Ameny-Dixon (2010) a global perspective provides micro-cultures with an opportunity to retain many of their traditions, such as language, religion and social customs while simultaneously adopting certain aspects of the Anglo-Western culture.

Drawing from Ameny Dixon's (2010) framework, we outline the four key components of the global perspective of multicultural education, namely Multicultural Competence, Curriculum Reform, Equity Pedagogy and Social Justice Teaching.

Multicultural competence- refers to people orientated competencies in multiple ways of perceiving, evaluating, believing and solving problems. Acquiring an understanding and learning of cultural diversity amongst a nation support the awareness of one's own and others cultural perspective of informed cross-cultural interactions. Institutions of higher learning could develop global, interrelated and interconnected programmes which may provide students with positive experiences across the diversity spectrum. These programmes could then assist learners from marginalised and oppressed groups to discard their feelings of 'alienation, inferiority, rejection, not belonging and in turn develop lifelong skills needed for proactive citizenship in a globalised, international and multicultural society (Mpisi, 2010; Carigan, Pourdavood, King & Feza, 2005).

Curriculum Reform- refers to the acquisition of specific needs within the inclusion of curriculum theory and the social historical inquiry of the biases in textbooks, media and other forms of media which can easily be detected by academics, teaching staff, students and other relevant stakeholders. Via curriculum reform processes, traditional, predominant mono-ethnic and Anglo-European course contents are expanded by the inclusion of multi-ethnic and global perspectives (Kivedo, 2006).

Equity Pedagogy- refers to the initiating of an equity pedagogy which centres around achieving fair and equal educational opportunities for all learners, including learners from deprived socio-economic backgrounds and race/ethnic/cultural minorities or majorities which are representative of all micro-cultures. Through this approach, the total school/university environment can be transformed, especially when aspects pertaining to the hidden curriculum are expressed through the expectations educators have for student learning, disciplinary policies, classroom practices, peer grouping, school rules, cultural styles, perceptions learners bring to school, values of the teaching staff and related community relations and interactions (Bennett, 2007).

Social Justice Teaching- refers to teaching which requires an adequate understanding of learner demographics, culture, race, socio-economic status and the development of social action skills. Teaching towards social justice fosters an awareness of the historical origin and an understanding of individual and institutional prejudice and other forms of oppression, such

as cultural racism, stereotypes, discrimination, sexism, classism, prejudice and biases (Alexander, 2015).

4. KEY CONCEPTS

As a means of discussing suggested guidelines for the development of Multicultural education initiatives, the concepts of "Multicultural education" and "Integration" are explained.

4.1 MULTICULTURAL EDUCATION

Multicultural education is regarded as a reform movement designed to transform the total educational environment so that learners from diverse backgrounds(race, religion, culture, ethnicity, gender, ability, socio-economic status, age will experience equal educational opportunities and quality education in various educational institutions (Alexander, 2004). Bennett (2007) concurs with the above opinion and states that multicultural education consists of four interactive dimension, namely: the movement towards equity, or equity pedagogy; curriculum reform, through multiple perspectives, multicultural competence; the process of becoming conscious of your own as well as other cultural perspectives and teaching towards social justice, the commitment to address forms of oppression (prejudice a discrimination, racialism, sexism and classism).

Multicultural education emphasise the protection of rights for all citizens, including citizens from foreign nationalities, immigrants, refugee, asylum seekers and marginalised, economically and socially deprived individual. Supporters of multiculturalism, hold the view that the practice and acknowledgement of people's language, traditions and religious beliefs are crucial for cultivating a sense of belonging. However, it should also be noted that academic and public discourses have shifted in creating an awareness of 'international immigration', labour immigration, integration and the unwelcoming aspects associated with multiculturalism (Alexander, 2015).

From the above said it is evident that various notions are attached to the concept "multicultural education'-it may mean different things to different people. Malik (2015) argues that the term 'multicultural education' embodies both a description of society and a prescription for dealing with it. Multicultural education serves the purpose of highlighting the diverse nature of societies and the underlying policies enacted in managing certain processes, conventions and practices associated with it.

A multicultural development can be described as is "any type of program and/or a set of strategies that develop and enhances an individual(s) knowledge, skill and expertise to better manage difference on a personal, institutional, community, or societal level (Alexander, 2015). Development activities must be directed stimulating new educator expertise, but should address the manner in which inequalities , power, racism, oppression, complacent attitudes and fixed perceptions are embedded in a school's culture and internal structures (Calderon, 1997). Success in the preparation and training of teachers is dependent on different role players, such as teachers, learners, principals, parents and the wider community. Some

options to be explored as a means of equipping teachers and learners to deal effectively with diversity in a multicultural classroom, include the following aspects (Corson, 1998): a flexible and self-directed approach to teaching learners from diverse backgrounds; a readiness to meet unexpected classroom situations in an imaginative and ingenious way; a person-centered approach which is sensitive to the values and norms of different learners; a curriculum that develops critical, innovative and reflective thinkers who are in control of their lives; a curriculum who asked the following questions (*who makes the decisions ?, who benefits from them ?, who suffers because of them"; how can change be brought forward* ?); an assessment system that develops and challenges learners to higher levels of success; a professional engagement with diversity that embrace and recognise difference; the school as a possible source of educational failure and viewing education as being at the forefront of social formations that are open to change.

4.2 INTEGRATION

Post apartheid schooling in South Africa, introduced a democratic, non-racialised and open education system. The latter situation gave origin to the movement of learners (living in black residential areas) to integrated learning settings, such as historically white schools (located in historically white residential areas). The influx of black learners to previously exclusively white schools lead to the emergence of diverse races, cultures and religions in schools- a phenomenon for which white educators, especially had not been trained or prepared (Khosa, 2000).

5. RESIGN DESIGN AND METHODOLOGY

Qualitative research with an underlying content analysis methodology is used to identify possible guidelines for the implementation of multicultural education initiatives in integrated school settings of the Northern Cape province. The stated literature reviews, findings and recommendations suggested in each of the three studies were analysed for relevant themes which also served as guidelines. Content analysis grants the researcher an opportunity of immersing him/herself in various messages in order to identify dimensions or themes (Abrahamson, 1983).

Purposive sampling was used to identity the research participants (educators and learners) attached to the integrated school settings (historically white schools) of all three studies. Pertaining to study **1**- the design and evaluation of a staff development programme for amalgamated schools in the Northern Cape, 260 educators attached 10 integrated schools served as sample. Relating to **study 2**- the state of multicultural education and the design of a multicultural education programme for Northern Cape schools, 290 educators and 100 learners attached to 10 integrated schools were selected to partake in the study. With regards to **study 3**- the scholastic experiences of black learners in multicultural Further Education and Training schools in the Northern Cape, 457 educators and 1037 learners, attached to 27 schools were selected to participate in this study.

6. RESULTS AND DISCUSSION

The results will now be discussed based on issues emerging from the literature reviews and key findings from the three research studies, conducted in integrated school settings (historically white schools) with a multicultural character. The themes are framed in such a way that it may serve as guideline suggestions for the use of educators, learners, the school management team and parental component, attached to integrated school settings in the Northern Cape province.

Multicultural policy interpretation and policy development: Educators seem to be aware of relevant policy and other legislative documents, such as the Constitution, the South African Schools' Act (SASA) and the National Education Policy Act impacting on equity and learner access considerations. Approaches to schooling, such as multicultural education, social justice education and anti-racist teaching approaches may be best implemented by educators in integrated learning environments if the they succumb to a more holistic interpretation of these crucial documents (Shimutwikeni, 2010). The school policy needs to reject and address all forms of oppression based on race, culture, language, ethnicity, religion, class, disability, socio-economic status, etc. Therefore, educators and learners need to be orientated and made aware of the core values, enshrined in these documents. It appears that most integrated schools in South Africa don't have a policy on racial integration. The researchers propose the development of official guidelines by education authorities as a mechanism in supporting integrated schools of dealing with matters relating to integration (Sunday Times, 2009).

Diversity management: Educators should value and recognise diversity. In doing so, a learning environment should be promoted that will motivate learners to acquire the skills, knowledge and attitudes needed to participate in a multicultural society. Integrated schools in the Northern Cape should realise that their culturally diverse setting are connected to the wider globe. School exchange and twinning programmes may provide learners with positive diversity experiences. Such experiences, with the support of the educator, may assist black learners to discard their perceived feelings of alienation and inferiority. In seeking the best way to facilitate cultural diversity at school level, Mekoa (2006) postulates that multicultural education should start with "where the learners are". This implies that the education of learners should take into account their socio-cultural background, socio-economic conditions and the experiences which learners bring to the classroom.

Inclusive school structures and processes: Educators and learners postulate that the school structures, processes and culture appear not be fully representative of a democratic South Africa. Learners, mainly black, are almost exclusively taught by white teachers. The culture and environment of integrated school settings seem not to reflect the values of a democratic

dispensation and that of the 'rainbow nation' of South Africa (Independent Online-The Star, 2001). The researchers suggest that a more meaningful commitment should be made by School Management Teams and the School Governing Boards of integrated schools in recruiting and appointing educators across the colour line.

Curriculum development: Educators in integrated schools need to be equipped to deal with the challenges of multilingualism, diversity and intercultural competence communication (Alexander, 2014; Sieghrun, 2002). The development of an equity/critical pedagogy should be discussed within the ambit of critical multicultural education and the global perspective on multiculturalism (Alexander, 2015). In essence, the curricula used in integrated schools should create an creating awareness about societal issues. Educators and learners will respect one another's diversity if societal challenges are more clearly articulated during curriculum development processes and lesson presentation opportunities (Shulz, 2007). Education planners should develop a curriculum that addresses the needs of learners and creates a school environment which reflects cultural diversity. Thus, an important aspect of multicultural education is the inclusion of culturally relevant and appropriate content in the curriculum. The researchers are of the view that curricula should be adapted to reflect the multicultural nature of society and as such reflect the experiences and contextual realities of learner's lives (Lemmer, Meier & Van Wyk, 2006).

School Management Teams: The school management teams in integrated schools need to be equipped with the acquired skills of facilitating change and managing diversity in their schools. Educators, learners and the broader parent community need to be educated to deconstruct the reasons behind various forms of oppression, cultural antipathy and negative stereotyping that appear to pervade integrated schools (Mpisi, 2010). The group of researchers propose that the school management teams should be capacitated by the Northern Cape Department of Education, to engage in the following activities namely: accepting transformation as a dynamic process; change the organisational and internal conditions of the school; undertaking of small-scale projects; fostering collaborative partnerships; promoting policies and instilling a culture of teaching and learning (Adalbjarnardottir and Runarsdottir, 2006; Kivedo, 2006).

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Democratic classroom teaching and management techniques: Educators hold the opinion that a conducive teaching and learning culture needs to be instilled in integrated school contexts. Educators and learners need to acquire the knowledge, skills values and attitudes to partake in constructive ways in the multicultural classroom (Lemmer & Squelch, 1993). It should be noted that teaching methods influence class effectiveness in integrated schools-educators should therefore reflect on their own practices and construct meaning-making opportunities, as a means of teaching learners from their own realities, experiences and prior knowledge acquisitions (Alexander, 2004).

Cooperative learning strategies: Educators viewed their lack of understanding in the use of cooperative learning as a teaching approach as a challenge in enhancing effective teaching and learning opportunities in integrated schools. Educators also alluded to issues with regard to the school curriculum, lesson presentation and interpersonal relations as challenges. Cooperative learning is an approach to teaching, is directed on changing classrooms interactions, assisting learners with active learning experiences, equal opportunities and quality education (Alexander, 2014). Learners from previously geographically isolated areas and even hostile learner groupings can value each other if educators employ teaching techniques which promotes positive inter-group relations. The researchers all conclude that the Northern Cape Department of Education needs to empower and capacitate educators in cooperative learning techniques and also align their curricula and programmes to learner centred methods.

Parental involvement: Parents and members of the broader community need to be orientated and empowered in aspects surrounding the school's culture, functioning and ethos (Dockett & Perry, 2005). Negative attitudes toward these schools and feelings of inferiority may prevent parents from being effective partners of schools. The School Governing Body which represents parents should play a critical role in encouraging parental involvement in integrated school setting. The key aim of the South African Schools Act was to introduce an education system that would, *inter alia*, promote democratic change in the community- this was executed by integrating various and diverse school models into a single, comprehensive model that would be inclusive of and acceptable to all role players (Mpisi, 2010; Kivedo, 2006).

Managing various forms of oppression: Educator and learner participants are of the opinion that reducing culturally biased behaviour, prejudice and stereotyping amongst learners and themselves is a very important value of multicultural education. Eradicating and addressing racism, sexism, prejudice, and discrimination means lessening negative attitudes and behaviours based on gender bias and misconceptions about the inferiority of races and cultures which are different from one's own. The emphasis should be on the clearing up of myths and stereotypes associated with gender, different races and people from different ethnic origin. The researchers propose Life skills development as an approach to teaching and supporting educators and learners in acquiring certain competencies and attitudes in managing the prevalence of various forms of oppression in integrated school contexts (Alexander, 2004; Mpisi, 2010).

Social justice considerations: Educators are of the view that approaches to social justice should assist them at a conceptual and practical level to enhance change initiatives directed at dismantling inequalities. Social justice as a fundamental principle of anti-oppressive education, should allow for the full and equal participation of all individuals and groups in a

multicultural society. Noting South Africa's past history, which was characterised by racial separation, unequal access to educational opportunities and the vast disparities which existed between the white minority and black majority component of the population, it became imperative for education endeavours in post-apartheid society to adhere to social justice principles (Alexander, 2004). The researchers suggest that the Northern Cape Department of Education should therefor empower educators with knowledge and skills to deal with issues of poverty, social exclusion and diversity. Educators also articulated the significance of human rights as a tool for eradicating the exploitation of racial abuse, oppression, power and embracing learner diversity.

Life skills development: Learners who are empowered by their experiences at school develop the ability, self-confidence and motivation to persevere holistically. South African high schools have Life Orientation as a subject. This subject can serve as a platform for classroom discussions, debates, role play activities, narrative and essay writing around various aspects of diversity and multicultural education (Alexander, 2004). Life skills development initiatives might include aspects such as developing cultural competence; promoting intercultural competence; combatting various forms of oppression; developing social action skill; fostering intergroup relationship skills; understanding multiple national and historical perspectives and promoting an awareness of diverse world views learners hold (Bennett, 2007).

7. RECOMMENDATIONS

Notions attached to Multicultural education should not only be approached as a series of isolated experiences; rather, it should form part of a whole school development process poised at making a meaningful contribution to teaching, learning, educator and learner interactions in integrated school settings. The training offered by teacher education institutions should focus on incorporating multicultural education and diversity management in their courses offered. The Northern Cape Department of Education should develop a structured plan to facilitate professional and personal development initiatives geared at supporting the teaching staff with multicultural education issues in integrated school settings.

8. CONCLUSION

This study wasn't intended to disregard the progress and contribution made by integrated schools, such as historically white schools in South Africa. There is however a need to address the various realities and challenges associated with diversity and more specific, multicultural education at these institutions. The suggested guidelines may serve as a platform for the development of focussed multicultural education initiatives in integrated school contexts. The Northern Cape Department of Education and various role-players should

understand their respective functions and responsibilities in promoting equal opportunities and quality education for all learners.

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Recognizing Development beyond Economic Growth: by analyzing impact of Inequality on Development

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Abstract

The idea of development has transformed in recent decades from measuring per capita income to improving quality of life of the people. The traditional advocacy for Western models of development has proven to be futile when many developing countries (especially East Asian Tigers) have shown that one size does not fit all and there are other ways to achieve growth as well. However, global economic development also accompanied with another incidence called inequality through distributional bias and limited opportunities in last few decades. When national income is not distributed proportionately to non-economic sectors, the economic success fails to benefit sustained development in a country. This paper focuses on impact of such inequality on human development, poverty and growth. Countries with high ranks in Gross National Income (GNI) often turn into lower rankings in Human Development Index (HDI) when distribution is below the standard in health and education due to lack of pro-poor policy measures. On the other hand, poverty reduction slows down and incident of extreme poverty also rises in regions where inequality is high. Besides, rising inequality with declining share of bottom 40% of population results into inability of economic system to create jobs and such weak growth governance leads to lowering of growth rate in the long run. This paper is articulated based on secondary materials from different sources in order to study impact of inequality. It provides further opportunity to work in this subject with much broader and primary data in future.

Key words: Inequality, Human Development, Poverty, Growth

1. Introduction

There is no denial of the fact that economic growth is important for human development with emphasis on reducing inequality and poverty. But how to achieve long term economic development with focusing on dropping poverty and inequality remains doubtful especially when economic growth does not spill over to better health and education of the masses and fails to expedite alleviation of poverty. High inequality that impedes development process arises in countries where growth governance is weak and policies are not pro-poor. Inequality, as a result of poor growth governance explains difference between performance of human development and GNI per capita in countries like Qatar and Kuwait and negative shift in human development rankings for countries like USA and Colombia when their inequality is taken into consideration. It also expounds the reason of increasing number of extreme poor in Africa and slow poverty reduction in Philippines at a time when their economies are growing faster than many developed countries. It endeavors on incidences where high inequality and distributional imbalances inhibit economic development to harness human development and acceleration of poverty reduction, which ultimately affects the long term sustained growth of a country.

However, the core aim of development is to make a better life for everyone. Over the year's academicians, practitioners, scholars, activist and skeptics have debated on what makes our life better. Different understandings of development followed with various approaches and measurement in order to define development. Soon after World War II, understanding development was resembled with national income or known as 'income approach' based on GDP and GNI. Economics as a powerful social science claimed status of objectivity and started measuring development that fits for all the nations (Peet, 2010: p.23). On the other hand, World Bank divided countries into categories depending on their income levels: low income, middle income (now divided into upper and lower middle income) and high income. It was believed that economic betterment would trickle down to solve other problems in poor developing countries. During 1960s and 1970s, the escalating global output and negating distributional factor resulted into incidences like unemployment, extreme poverty and inequality in both developed and developing world. At that point of time a number of development thinkers have redefined parameters for understanding development. Dudle Seers (1969), for instance described development in terms of reduction of poverty, inequality and unemployment in the context of growing economy. According to him, it would be strange to call a country developed if any of these three central problems is present in economy, even though per capita income may double (Todaro, 1977: p.61).

Similarly, according to Amartya Sen (2000, pp. 3-9), development lies in elimination of sources of un-freedom: poverty, poor economic opportunities and repressive state etc. He talked about five types of freedoms; political freedoms, economic facilities, social opportunities, transparency guarantees and protective security. To his account, economic un-freedom can breed social and political un-freedoms that can further advance economic un-freedom. Therefore, it is not economic growth but freedom (achieved by eliminating sources of un-freedom) that is the principal end of true development. Such realization in development thinking led to revision of measurement that required inclusion of qualitative parameters. In

1990, the United Nations Development Program (UNDP) introduced the first Human Development Report (HDR) using Human Development Index (HDI) that extends focus on *longevity* (life expectancy at birth), *knowledge* (adult literacy and mean years of schooling), and *income sufficiency* (GNP) (Willis, 2005: p.7). Since then, the idea of development moved beyond income approach and supplemented with non economic aspects of life. Inequality became important aspect of development literature especially in poverty studies and identified as an important issue that hinders progress of human development. Inequality to some extent explains the non-linear relation between GNI and HDI rankings in many countries that reveals the loopholes in the previous income approach. Therefore, this study seeks to illustrate impact of inequality from three aspects; human development, poverty and economic growth. This paper also demonstrates lethargy in economic growth in some countries where inequality has increased over the years.

The paper begins with understanding development and its key concepts and followed with theories of growth and performance in different countries in next part. The third part focuses on missing link between growth and development through understanding the impact of inequality on human development, poverty and economic growth. The fourth part discusses briefly on key policy issues regarding inequality for inclusive and sustainable development and finishes with conclusion that summarizes key points discussed in the paper

2. An over view of theoretical and empirical review

Whether through capital accumulation (Classical), efficient production (neo classical) or through monetary and fiscal policy of the state (Keynesian), the economists have always focused on smoothing the growth process of their contemporary economy. In 1949, when US president Truman declared the legitimacy of reconstruction of poorer part of the world on its richer counterpart (similar to white man's burden during colonial period), the emphasis was solely concentrated on accelerating GDP growth that was believed to trickle down benefits. Growth as the ultimate end of development was mainstreamed when United Nations declared "Development Decade" in the 1960s (Todaro 1977, P. 60).

Hence, the early development literatures on growth were dominated by 'linear-stage theory' of Walt Rostow (Willis 2006, P.39). In 1960 he introduced a non-Communist Manifesto of development, *"The Stages of Economic Growth"* that displayed successive growth path (from traditional society to age of high mass consumption) to the Third World countries. The basic concept was to follow the footprint of the developed West. Likewise, Harrod-Domor's 'Two Sectors' model and Arthur Lewis' 'Structural Change' model of growth also played prominent role in shaping policies in newly independent countries of 1950s and 1960s. Along with assumption of constant return to capital (even though later it was challenged by Robert Solow), the initial focus of these development models was placed into increasing national savings and investment. As Third World Countries lack savings, these models advocated for foreign aid in order to push modern sector growth (Willis 2006, pp.39-42). This not only legitimized foreign aid, but also legitimized development as an economic phenomenon.

Beside inequality, researchers have explained diverse development experience of different regions using four alternative models (Easterly 2007, pp.760-761); settler mortality, in which colonies with lower mortality helped to produced institution favorable to development, compared to non-settler colonies where they produced extractive institution (in Acemoglu et al. 2002, 2005); ethnic fractionalization leading to poor institution (in Easterly & Levine, 1997); tropical location, especially land locked location directly inhibit development (Sachs and Warner 1997); and finally legal origin and its negative effect on institution (La Porta et al. 1999).On the other hand, inequality has become a common phenomenon in the study of development. The World Development Report (World Bank 2005) divided inequality based on "inequality of opportunity" and "inequality of outcome" (cited in Easterly, 2007). Easterly (2007, p.756) divided inequality based on two categories, historical inequality (like conquest, slavery, colonialism etc.) and market inequality. According to him, inequalities in different countries are result of these two forces. For instance inequality in China is result of market forces, while in Africa or Brazil it is result of historical or structural. The structural inequality is unambiguously bad; while the effect of market inequality is ambiguous (some studies find it adverse, while elimination of it can have negative incentive effect) (Easterly, 2007, p.756).

One of the major problems of the studies on inequality lies on the quality of the data set used. Deninger and Squire (1996, 1998) first challenged such lack of quality dataset who at the same time offered new set of data to study inequality. Again, later Atkinson and Brandolini (2001) challenged it with their smaller dataset for rich countries. Further in response to these criticisms, the World Institute for Development Economics Research (WIDER 2000) produced a database with cross-country comparability. Still according to Easterly (2007, p.760) this issue of data quality is far from resolved. Beside data quality, another problem in the study of inequality is the lack of consensus among the researchers. The first wave of literature on inequality showed that inequality is good for economic betterment (Lewis 1954, Kaldor 1956). However, to this date there are studies that show negative impact of inequality on growth (Perotti 1996, Benabou 1996 etc.) and studies that show the relationship in the opposite direction (Forbes 1997). Moreover, there are studies that give country specific evidences between poor and the rich. Barro (2000) finds that an overall effect of inequality on growth and investment is not strong. Rather, higher inequality tend to retard growth in poor countries, while encourage growth in rich countries. Such differential result between poor and rich countries also found in Deninger& Squire (1998). Using new sets of data (from 1950s - 1990s), they have identified three results; there is strong relationship between initial inequality in asset distribution and long-term growth, inequality reduces income growth for the poor but not for the rich.

There is no single model and single result to explain impact of inequality on growth. Within studies on inequality, research on the macroeconomic relationship between inequality and growth can be categorized into four models; credit market imperfection, political economy, social unrest and saving rates (Barro 2000). *Credit market imperfection* is a situation where information is asymmetric and legal institution is weak. In this mechanism, reduction of inequality increases economic growth. On the contrary, in *Political economy theory*, it shows that if the mean income exceeds median income, then the majority favor for redistribution of

the resources from rich to poor. Therefore as redistribution takes place, investment falls and growth declines accordingly. Therefore, it shows that greater amount of inequality (measured before transfer) would reduce growth. More so, inequality can have negative effect on growth through political channel by rich groups through promoting official corruption during their lobbying against redistribution. The third model is *Socio-political unrest* which shows that inequality in income and wealth instigates the poor to be engaged in evil activities like crime, riot etc. that weakens political institution. As this result into direct waste of resources, therefore more inequality tends to reduce the productivity of the economy. Motivated from Keynesian Theory, the *saving rate model* argument shows that as saving increases with income, the redistribution from rich to poor ultimately reduces the aggregate saving in the economy and increases investment. This only happens in partly closed country where investment to large extend depends on desired national saving only. Therefore, more inequality would increase economic growth.

There are other studies that go beyond explaining relationship between inequality and growth (e.g. inequality and poverty or institution or human development etc.). Using agricultural endowment (structural inequality), Easterly (2007) shows that inequality affects different aspects of development like growth, institution and schooling. He concludes that high inequality is both large and significant barrier to prosperity, good institution and high schooling. He also argues that previous literatures have missed the big picture that inequality (i.e. structural) actually does cause underdevelopment (Easterly, 2007, p.777). He took the idea from Sokoloff and Engermann (2000 as cited in Easterly 2007) who hypothesized that factor endowment is major determinant of inequality and the elites in Latin America opposed democracy and development of human capital in feat that the poor will become empowered and use that power to redistribute income and rent from the elites' share. Some studies describe role of inequality on growth through human development. For instance, study of Alesina & Rodrick (1994) and Person & Tabellini (1994) show that inequality harms growth by constraining human development or occupational choice.

There are some studies find impacts of inequality on poverty (both indirect and direct). Ravallion (2001) for instance discussed role of initial inequality on poverty reduction. He finds out that higher initial inequality tends to reduce the impact of growth on reduction of absolute poverty. Therefore, it implies that higher initial inequality is negatively related with rate of poverty reduction. Cheema and Sial (2012) have tried to find relationship between growth and poverty as well as inequality and poverty. They show that keeping inequality constant, growth contributes in reducing poverty more than the former (i.e. inequality) when the latter (i.e. growth) is constant. Beside it also shows that inequality elasticity of poverty is higher in urban areas than rural areas, while growth elasticity of poverty, which is higher in rural areas than urban areas. They concluded with recommendation that in order to reduce poverty, government should focus on policies not only for economic growth but also improvement of income distribution (i.e. reduce inequality)

Likewise, the early decades of development for newly independent countries were full of volatile growth experiences. With sluggish run, it started to accelerate since 1980s (see Table 1). Dany Rodrik (2003) shows that the average real per capita income growth of developing countries was 2.6 percentage points between 1960-2000. This is very high compared to England who grew at only at 1.3 percentage point at late 19th century (during their economic supremacy). After the initial fall in 1970s and 1980s, Latin America and African countries also recovered over 2% growth rate, while South and East Asian countries had robust growth for over last couple of decades.

Table 1: Growth transition for selected countries

Countries	Year of growth acceleration	Growth before	Growth after	Magnitude of acceleration
Argentina	1989	-2.73	4.77	7.51
Brazil	1966	2.00	7.05	5.05
China	1989	3.67	7.36	3.69
Egypt	1976	-3.36	4.10	7.47
Pakistan	1977	1.25	4.28	3.04
Malaysia	1986	1.03	5.64	4.61
Mauritius	1982	0.36	4.97	4.62
Haiti	1987	-1.96	7.72	9.68
South Korea	1982	3.04	7.72	4.68
Taiwan	1961	3.73	7.27	3.54

Source: *Adopted from Rodrik (2003)*

Comparing with neo-classical prescriptions of openness of economy and privatization, many would have termed East Asian countries undeveloped in the early 1970s. Especially South Korea and Taiwan, who showed tremendous growth boom, taking strategies completely opposite to those prescribed in the Washington Consensus. Both the countries relied on public enterprise for initial growth. On the other hand the region (Latin America) did the most deregulation and liberalization experienced little pace in its growth compared to East Asian countries (Rodrik, 2003). This diversity in growth experience again rejects the one size fits all principle of linear growth model that predicted similar growth for most of the developing countries, assuming them as homogenous and ignoring dissimilar contexts that these countries had. Besides, the sole focus on output, while disregarding distribution brought new challenges (e.g. inequality) to many of these countries.

3. Findings and Analysis

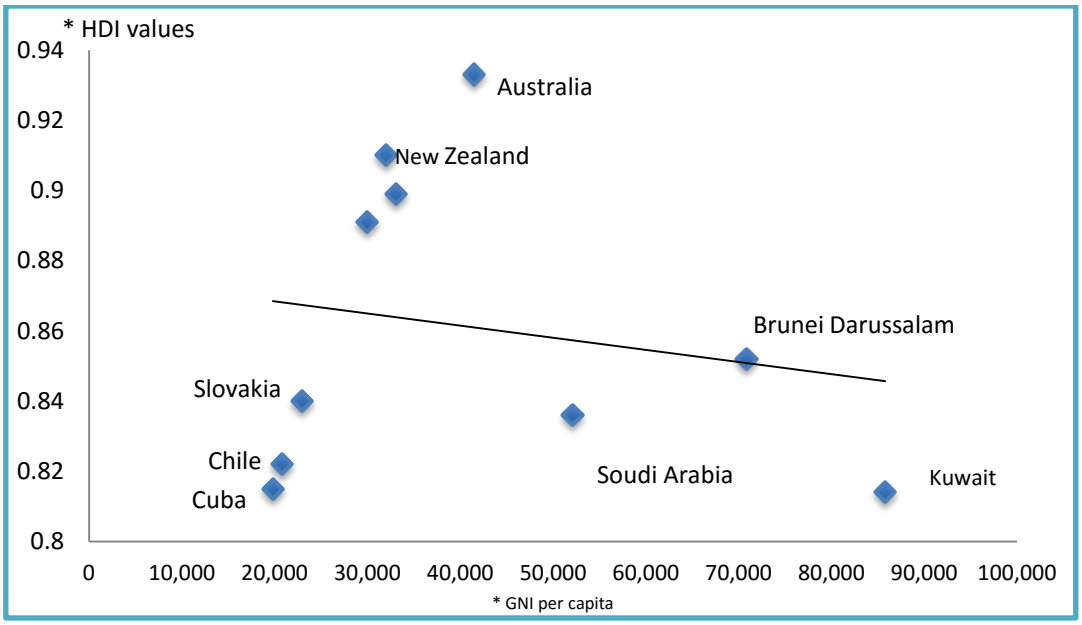
It is evident from the recent studies that all of the 10 fastest growing economies in last decade were from developing world (The Economist, 2013, Rodrik, 2003). However, at the same time rising number of extreme poor, growing unemployment and informal economy, problem of sanitation, safe water, urban poverty and dictatorial regimes remain as major challenges

for many these countries. The rising economic development also increased inequality around the world. According to UNDP report, the richest 20% of the world account for 75% of world income, while poorest 40% only have 5% of income (UNDESA 2009, P. 2).With reference to inequality, this study will try to discover the potential disconnects where growth fails to meet development objectives. Mainly it will show the impacts of inequality on human development, poverty and growth.

3.1. Human development and Inequality

Importance of humans with minds than muscles became instrumental in growth theory during 1950s when it was found that the output of US economy was growing much faster than its input. It was then for the first time economists were fascinated by contribution of the third factor 'education of the workers'. Later it came as residual in economic growth models (e.g. Solow growth model). It was acknowledged that the most important investment for a country is the investment on its people (Psacharopoulos, 1973). In a while it was mainstreamed as an important element of development measurement in human development reports since 1990.

Graph 1: Relation between HDI and GNI per capita for selected countries



Source: Human Development Report 2014

Human Development Report classifies countries into four groups (i.e. very high, high, medium and low human development) based on performance in three broad criteria (discussed earlier). Even though average income of the majority countries in the top group of HD is very high, however the Graph 1 shows some interesting differences between GNI per capita and HDI value. In the graph above, 10 Countries from very high Human Development (HD) groups are plotted (these are countries who have either positive or negative gap

between HDI and GNI rankings plotted in Table 2). The Y-axis shows HDI values and X-axis shows the GNI per capita. Three types of outcomes can be observed from the graph; that there are countries with both very higher HDI value and high GNI income (e.g. Australia); there are countries with very high GNI, but relatively low HDI value (e.g. Kuwait) and countries (e.g. Cuba) with very low GNI, but relatively similar HDI like the latter group. The overall trend shows a negative relation between income and human development performance among these countries. This is due to low HDI performance of countries with high GNI.

However, further country specific understanding of human development performance can clarify this negative trend of income and human development. For example, Kuwait who has more than twice the average per capita of very high HD group (85,820 USD) ranked very bottom of the group (at 46th position) that is quite substandard compared to countries like Cuba and Chile who have better human development record with four times less income than Kuwait. Surprisingly, 29 out of 49 countries in very high HD group are below 40,046 USD (average income level of that group). The report also shows that the global GDP has doubled since 1999, while numbers of countries graduating from low and middle-income levels to high HD are not significant (HDR 2014: pp.33-36). One of the significant explanations of such inconsistency is the distributional gap in areas like health and education of particular country (see Table 2). The table below shows how disproportionate distribution of income in health and education can impact countries' human development status.

Table 2: Selected countries' data on Human Development

Countries	GNI per capita ranking	HDI ranking	Gap between GNI and HDI	Public expenditure in Health (% of GDP)	Public expenditure in Education (% of GDP)
New Zealand	30	7	23	10.1	7.2
Australia	20	2	18	9	5.1
South Korea	33	15	18	7.2	5.0
Ireland	28	11	17	9.4	6.5
Rwanda	171	151	20	10.8	5.1
Madagascar	174	155	19	4.1	2.8
Nepal	158	145	13	5.4	4.7
Kuwait	3	46	-43	2.7	3.8
Oman	17	56	-39	2.3	4.3
Qatar	1	31	-30	1.9	2.5
Brunei Darussalam	5	30	-25	2.5	3.3
Saudi Arabia	12	34	-22	3.7	5.6

Source: Human Development Report 2014

The table displays 12 countries based on GNI-HDI rankings gap. The first seven countries (from very high and lower HD groups) indicate positive gap (HDI outpaced their GNI). On the other hand, the last five countries show very high negative gap. For instance, Australia and New Zealand are 20th and 30th respectively in GNI per capita rankings, while in HDI rankings their positions are 2nd and 7th respectively. Contradictorily, none from Qatar, Kuwait and Brunei Darussalam (all are among the top 5 countries in GNI rankings) could secure their place below 30 in HDI rankings. There is no general ignominy to have high economic development in any country. But it becomes suspicious when their rising income fails to harness potential human capital and benefit human development in that country.

Keeping other factors constant, simply looking at column 5 and 6 of the table, it can be implied that lack of proportional disbursement in health and education (that constitute key part of human development) is one of the reasons of such negative gap for countries with high income. Public expenditure is one of main source of improving development condition of a country, especially for developing nations where large number of people living below poverty line cannot afford to pay for basic amenities. Different UN organizations recommend 6% (of GDP) for education and 5% for health as global rule of thumb. Qatar for instance, the richest country in GNI spends only 1.9% in health and 2.5% in education, lesser than countries like Nepal and Rwanda (who rank 158 and 171 in GNI rankings respectively). Therefore, Qatar experiences a negative rank change, moved from 1st to 31st when HD is taken into account.

Mostly, very large segment of population in developing countries depend on public expenditure for health and education which seems very low in these countries. As a result, their mounting per capita GNI was not sufficient to shift them from status of developing to developed countries. In an economy where share of national income benefits the top and discriminates the bottom, often pose threat to its sustainable development. Weak institutions and lack of accountability (encouraged by traditional autocratic political institutions) are key foundations in these countries that spur distributional inequality. Conversely, the countries with positive gap also are countries with highest level of transparency and partisan democracy. Their performances illustrate that income and balanced expenditure can be mutually benefitting for development regardless of levels of income.

In addition to inequality of distribution in health and education, the Human Development Report also includes other aspects of development. Good economic growth is the one that promotes human development in all its dimensions. It guarantees cooperation, equity, empowerment, sustainability and security (HDR 1996: pp. 55-56). Youth unemployment for example, varies between 20-50% in many rich countries that bears sign of jobless exclusive growth (HDR 2014: pp. 213-14). According to the idea of development endorsed by Dudle Seers and Amartya Sen, these countries cannot be termed as developed even though they have high GNI per capita. Lack of proportionate distribution in social dimensions often denies the rights of the marginalized even in rich countries. For instance, according to US Census Bureau, the share of top 20 % earners in USA (the ninth richest country of the world with over 50,000 USD per capita) increased from 44 % of total income to 50% from 1973 to 2000. More micro level analysis of within country inequality is shown by Amartya Sen

(2000) between Afro-Americans and global south. He showed how high per capita income does not necessarily correlate with greater life expectancy for the poor Afro-Americans compared to the poor citizens of the Indian state of Kerala where public services have long been accessible to the poor. Referring to the work of McCord and Freeman (1990 cited in Sen 2000), Amartya Sen also shows that poor Bangladeshi men have better prospect of living beyond forty years of age than African-American men even from prosperous city of New York.

Table 3: HDI of selected countries after inequality adjustment

	Country	HDI rank	New HDI (Inequality adjusted)	GINI coefficient
Very High Human Development	United States	5	28 (-23)	40.8
	Chile	41	67 (-16)	52.1
	Argentina	49	53 (-4)	44.5
	Finland	24	15 (+9)	26.9
	Slovakia	38	29 (+9)	26.0
High Human Development	Panama	66	84 (-18)	51.9
	Brazil	79	95 (-16)	54.7
	Columbia	98	108 (-10)	55.9
	Ukraine	83	65(+18)	25.6
	Armenia	87	72 (+15)	31.3
Medium Human Development	Bolivia	113	123 (-10)	56.3
	Guatemala	125	133 (-8)	55.9
	Namibia	127	149 (-22)	63.9
	Mongolia	104	88 (+16)	36.5
	Moldova	114	98 (+16)	33.0
Low Human Development	Angola	149	166 (-17)	42.7
	Rwanda	151	155 (-4)	50.8
	Nigeria	153	167 (-14)	48.8
	Tanzania	160	152 (+8)	37.5
	Afghanistan	169	162 (+7)	27.8

Source: Human Development Report 2014

Twenty countries with highest positive and negative change in HDI rankings (after inequality is considered) are plotted in the table that represents four HD groups (see Table 3). Countries with highest positive shift due to better equality are placed in the grey shaded sections of the table. The United States of America who is one of the top five countries in HDI rankings, moved to 28th position after inequality is considered (23 point drop). Growing gap between bottom 40% and top 10% is eliminating America's status of 'land of opportunity' to a 'land of discrimination'. Given the adjusted ranking, the column number 4 in the table points out how income inequality can be a big factor that fades away development performance in many countries. The countries with negative changes are also those who have higher inequality

(wtih average Gini coefficient around 50), while the countries that had positive changes are those who have low level of inequality (with average Gini coeffcient around 30).

From the negative change group, four countries (Chile, Argentina, Columbia and Namibia) indicate that after inequality is taken into account, not only their rankings changed, but also their statuses shift from an upper HD group to a lower HD one. Opposite is the case for Mongolia and Moldova who became high HD countries from medium HD after inequality is adjusted. The frequencies of inequality in these countries regardless of their position at different HD groups or income levels indicate that inequality is widespread and threat for countries' human development as well as overall long term sustained development.

3.2. Poverty and Inequality

It is commonly believed that affluence or rising income ensures wellbeing of the people and provides leeway to enjoy longer and healthy life. However, there is actually very less guarantee of that correlation when we take into account distributional aspects (mentioned in previous section) in many countries. That is why, countries with similar income often show dissimilar poverty rate. For example, Serbia, Columbia and South Africa are parallel in terms of level of GNI per capita (around 11,000 USD). However, in Serbia only 0.1% people living below $1.25 poverty benchmark, while in Colombia and South Africa its around 5.6% and 9.4% respectively (WDI, 2014).

Surprisingly, inequality is also high for the latter two countries (55.9 and 63.1 Gini coefficient respectively) that signify impact of inequality on poverty. Similarly, Philippines for instance, the second fastest growing economy in East Asia today (after China), is also country with 40 million people living below $2 poverty line (18 million below $1.25 poverty line). Inequality in Philippines has increased from around 40 Gini coefficient points to 43 in last three decades. This high inequality is accompanied with slow rate in poverty reduction at 0.5 percentage point annually since 1980s (poverty at $1.25 threshold fall from 36% to 18% in Philippines). Compared to its neighbor Indonesia where poverty reduced at 1.6 percentage point annually (inequality is also 7 percentage point low in Indonesia) that helped poverty to reduce from 65% to 17% from 1980s to 2010s.

Extreme poverty which is considered as violation of human rights in General Assembly has ascended over the years (even though global poverty has halved in last two decades). 6 out of 10 fastest growing economies in last decade were from Africa. However, the number of extreme poor has increased in Sub-Saharan Africa from 205 million to 414 million in last three decades and also the share in global extreme poverty tripled during same time (the World Bank, 2013). This inability of income growth to reduce extreme poverty (let alone multidimensional one) often indicates the unequal resource distribution of these countries.

Income poverty often leads to other poverty traps based on health and education (low quality education, shorter size, lack of nutrition etc.). Abhijit Banerjee and Duflo (2010: pp.26-28) show how income poverty thrusts the poor households to compromise with health and education benefits of their members (unequal distribution of household resources based on gender), that led to 'witch killing' in Tanzania in order to reduce unproductive mouth in the

family. Income growth that fails to expand affluence of the poor household often backfires and hampers the development process[1]. Referring to the importance of equal distribution, the Asian Development Bank in recent report shows that if inequality in Asia were low, 240 million people could have graduated from extreme poverty in last 20 years (the Economist 2012).

3.3. Growth and inequality

Development economist supported unequal distribution initially as positive stimuli for growth momentum**.** Simon Kuznets (1955) hypothesized of inverted U-shaped curve that suggests unequal income distribution at the early stage of economic development. He believed that after certain point, this curve would go down and result more equal society. But, Kuznets hypothesis proved wrong in later works on devolving countries (Todaro, 1977). Against the myth of productive investment by the rich for whom economists have advocated for centuries, squandered much of their income on imported luxury goods than utilizing in productive resources. Therefore, patronizing income inequality for development process is "opportunistic myth disguised in maintenance of status quo" by the elites (Todaro 1977: p.112).

The high consumption of the poor expands the aggregate demand that helps to create new jobs. According to Stiglitz (2014), it's the ordinary Americans who create jobs, not the rich. Deceleration of wage share in national GDP compared to profit not only increases distributional inequality, but also reduces potential role of economy to create jobs. The Human Development Report 2014 shows that since 2005, the countries where inequality is high, consumption of bottom 40% is dawdling than overall population.

Table 4: Countries with highest and lowest GINI coefficient and impact on growth

Countries	Gini coefficient in 2000	Gini coefficient in 2013	GDP growth Rate in 2000	GDP growth rate in 2005	GDP growth rate in 2010	Unemployment rate
Sweden	27.5	25.0	4.45	3.16	6.56	8.0
Slovakia	29.1	26.0	1.37	6.6	4.18	14.0
South Africa	57.8	63.1	4.1	5.28	3.14	25.1
Seychelles	42.7	65.8	4.2	9.1	5.6	Not given
Comoros	Not given	64.3	1.42	4.3	2.05	27.1

Source: UNDP, HDR 2014 and WDI 2014

[1] Globally, 2.6 billion people lack basic sanitation, around one third of children in developing countries are underweight and 72 million school going age children are unable to go school (UNDESA, 2010).

The Table 4 illustrates effect of rising income inequality (measured by Gini coefficient) on GDP growth (given that other things remain constant). Sweden and Slovakia are the top countries with low inequality, while South Africa, Comoros and Seychelles are the most unequal countries according to UNDP measurement. For the former two countries, GDP growth has improved with reduction of inequality from 2000 to 2010 (the Gini coefficient fell from 27.5 to 25.0). While, for the rest of the three, rising inequality has resulted into diminishing overall GDP growth. For example in South Africa, Gini coefficient increased from 57.8 to 63.1 from 2000 to 2013. On the contrary, its GDP growth declined from 4.1 percent to 3.24 percent from 2000 to 2010 (for Seychelles and Comoros, such declining started after 2005). This also confirms study of Berg and Ostry (2011), that greater equality is vital to sustain growth. In another study recently, it shows that increase of Gini from 37 to 42 point decreases growth by 0.5 percentage points (Ostry et al., 2014: P.18).

Moreover, growing inequality is also identified as contributing factor for growing unemployment for Comoros and South Africa (25.1 percent and 27.1 percent), compared to countries with low inequality (8 percent and 14 percent unemployment in Sweden and Slovakia respectively). So far it is apparent from examples of different countries that economic growth is not the panacea when inequality exists in the society. It not only slows down sustained growth in the long run, but also limits the spillover effect of economic wellbeing to ensure faster reduction of extreme poverty and better human development.

4. Policy options

Today in many parts of the world, the shining star of development dream remains in the darkest sky of global distribution where rocket of growth fails to reach. Historical record in a study by Organization for Economic Co-operation and Development on 25 countries demonstrates that the global Gini rose from 49 in 1820 to 66 in 2000 (The Economist, 2014). The Human Development Report 2014 shows that inequality has grown in 65 out of 130 countries (70% of total world population) between 1990 and 2012. Inequality in income or wealth breeds inequality in other sectors society and *vice-versa*. In the following section, three solutions have been identified necessary for growth process to be inclusive and ensure development that is sustained, while keeping gap between the top and the bottom minimal.

4.1. Growth governance

Governance of growth refers to the management of growth that provides the maximum and just benefit to citizens of any country. Growth can have multiple outcomes. In some countries it helps the bottom 40% or it helps the richest 10% in other countries. While in many countries, it helps the both proportionately. Today, the knowledge about distribution of a country is more important than the knowledge of its GDP growth or per capita. Distribution policies should give similar or more emphasis on spending for human capital as on physical capital. To ensure that growth is distributed equally, participation from citizens in decision making is essential to ensure accountability and transparency of the ruling class.

4.2. Pro-poor policies

When policies will ensure distributional justice, poor people will participate in decision-making. Todaro (1977: pp. 121-122) prescribes three policy issues that ensures pro-poor development: (a)structural change in *asset distribution* (access to basic needs like education or employment opportunities), (b) with *correct factor price* (that will help the working class) and (c) modifying *size distribution* (benefit to top 20% or bottom 40 %) through taxation and transfer payment. According to Todaro (1977: p. 113), equitable distribution can reduce mass poverty and act as powerful incentive (both material and psychological) that ultimately increase public participation in development process and necessary for good governance.

4.3. Institutional change

In many countries where inequality is high, the performance of institutions is very low to ensure rule of law. Rising inequality disturbs market signals essential for coordination in any forms of human interaction. Therefore, policy must focus on measures that reduce dominance of *de facto* upon *de jure,* which disrupts economic competition and increases practice of rent seeking. Besides, lack of governance in many countries is result of lack people participation in development process. The particular form of administration that can inspire citizens' involvement in the system is necessary in order to ensure accountable and transparent development that will help reduction of inequality.

5. Conclusion

Income Inequality as a consequence of unfair income distribution affects bottom 40% the most regardless of the country they live in. The bottom 40% in California is as helpless or more as the bottom 40% in Sao Paulo, Mumbai or Kuala Lumpur compared to top 10% population in income deciles. This study argued that income growth does not necessarily guarantee human development when inequality is rising in both rich and poor countries. Due to lack of balance between economic progress and distribution for non-economic development, many countries remain in the developing countries group even though their per capita GNI is two or three times higher than many developed countries (e.g. Qatar, Saudi Arabia etc.). On the other hand, Inequality not only increases vulnerability to the poor, but also slows down ability of economic system to reduce poverty at faster rate. Poor people highly depend on government subsidy for necessary amenities. In an unequal society, they often get rundown when government subsidizes in sectors that benefits only the rich.

At the same time, the decline in consumption of the bottom 40% results into catastrophe in economic accumulation and hampers the economic growth as well. This paper shows how rising inequality has also resulted in falling growth in Comoros and South Africa and *vice-versa* in Sweden and Slovakia. A number of policy interventions are compulsory to reduce inequality and ensure growth that is sustainable, inclusive, balanced and includes different sectors (e.g. health and education). Therefore, rather than focusing on only growth, it requires fundamental change in governance system and institutional mechanism that allows more participation of the marginalized to check and balance governance of growth for smoother long term development.

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Student teacher's conception on the use of formative assessment in the classroom

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Abstract

The study sought to examine undergraduate Biology student teacher's conception on the use of formative assessment during their high school teaching practice. A qualitative approach was adopted wherein a convenience sample comprising of thirty 3rd year biology student teachers from a university of technology were selected. Data were collected through five focus group discussions with the thirty students. Data were analysed and results were reported according to themes generated during data analysis. The study revealed that there were varied conceptions regarding formative assessment by the student teachers. Respondents also agreed that formative assessment enhances the efficacy of their instructional strategies. Learners reportedly did well in the classroom assessment tasks, and yet tended to perform poorly in tests assigned to them. This, in itself, casts doubt in the effectiveness of the student teachers' efficacy of formative assessment techniques. On these basis, student teachers need to develop a positive conception towards formative assessment and if they are to apply appropriate assessment techniques in their classrooms.

Key words

Formative assessment, conception. South Africa,

Introduction

Formative assessment is a systematic in approach, designed to be available to learners during a particular period of study to provide motivation for learning (Brookhart, Moss, and Long, 2008; Shavelson and Seal, 2003; William, 2008). It is designed to aid learning by generating feedback information that benefits learners during the learning process and leads to enhanced learning outcomes (Heritage, 2007; Carrillo-de-la-Pena, Bailles and Caseras, 2009; Yeoh, Ho and Chan, 2012). It is beneficial to both learners and teachers if properly handled. Teachers need to have a positive conception towards formative assessment and to administer it appropriately. Formative assessment is introduced, as an on-going process of evaluating students' learning, providing feedback to adjust instruction and learning, improving the curriculum.

Theoretical framework

Assessment of a learner's learning is a systematic process of collecting information about their progress towards the learning goals. It is "a key component of teaching and learning a systematic process of data gathering about students' progress" (Dhindsa, Omar and Waldtrip, 2007:1261). Assessment in general accounts for "supporting learning (formative), certifying the achievement or potential of individuals (summative), and evaluating the quality, of educational institutions or programs (evaluate)" (William, 2008: 59),

Formative assessment as defined by Heritage, (2007: 141) is "a systematic process to continually gather evidence about student learning". Learners need to be assessed throughout the lesson so as to enable them to use their "cognitive development, academic knowledge, and language skills to read, comprehend, synthesize, analyse, compare, contrast, relate articulate, write, evaluate and more" (Herrera, Murry and Cabral, 2007:23), during the

lesson. In support, Brookhart, Moss, and Long (2008) assert that formative assessment leads to an increase in achievement, motivation, time on task, and engagement for learners working with participating teachers. Teachers need to assess learners while learning is in progress to gain information about progress they are making as well as their understanding so that instruction can be adapted accordingly if there need be. In other words, through formative assessment a teacher will be able to identify what learners are doing right as well as what they need to work on next (Stiggins, 2010; Shavelson and Seal, 2003).

The best formative assessments are not focused exclusively on externally mandated learning outcomes but also on timely information that teachers can use to determine a student's current understanding and the areas that are nearly within the student's reach (Vygotsky, 1986). In line with this framework, the purpose of this study was to examine conception of and use of formative assessment during teaching practice by the Biology student teacher's at a university of technology.

Objectives of the study

The study was designed to achieve the following objectives:

- Examine the conception of formative assessment by student teachers.
- Identify the assessment techniques that Biology student teachers use during teaching practice in assessing learner's learning in the classroom.

1.4 Research questions

This study sought to answer the following research questions:

- How do biology student teachers conceive formative assessment?

- What assessment technique do biology student teachers prefer to use in assessing the learner's learning in the classroom during teaching practice?

Method

This study adopted a qualitative research design (McMillan and Schumacher, 2010). It was, thus informed or guided by the interpretive research paradigm. The Interpretive research framework of research thinking stresses the quality of data to be collected (Cohen, Manion and Morrison, 2010; McMillan and Schumacher, 2010). This entails a deeper understanding of the meaning behind the story or words articulated by a respondent.

Participants and setting

Participants in this study were thirty Biology student teachers who were interviewed through five focus group discussions. Interview questions were semi-structured. This implies that specific questions were prepared but there was still an opening for additional questions and room for elaboration when something relevant came up during the interview.

Trustworthiness of data

To ensure trustworthiness of data in this research, the semi-structured interview guides were discussed with some colleagues before focus group discussions with student teachers. Reliability, according to Denscombe (2002) is the stability, accuracy and precision of measurement. Reliability of data from the focus group discussions was ensured by recording discussions.

Data collection

Data were collected through focus group discussions with Biology student teachers at a university of technology to obtain the most comprehensive and dependable data pertinent to the research questions.

Data Analysis

The qualitative data entry and analyses was done by the use of both descriptive and interpretative techniques based on the themes arrived at in the data collection. The themes were related to the research questions and interpreted on the number of issues raised by respondents during focus group discussions. Transcriptions of recorded interviews were used in analysing the study. Verbatim expressions of respondents were used where applicable.

Ethical considerations

The aims and objectives of the study were explained verbally to the Biology student teachers by the researcher prior to their participation in the study. Assurance was given that no person or school would be identified because individuals have the right to privacy and to decide when, to whom and to what degree their opinions, feelings and beliefs may be divulged (Strydom, 2011; Cohen, Manion and Morrison, 2011; McMillan and Schumacher, 2010)

Results and discussion

When a question *what do you conceive formative assessment to be?* Was posed to Biology student teachers involved in the study. The following were some of their responses are discussed below verbatim:

- Student A viewed formative assessment *"as a process used during instruction to provide feedback for the adjustment of ongoing teaching and learning for the purposes of improving learners achievement related to lesson outcomes".*
- Student E responded as follows: "*is a form of assessment in which teachers assess learners internally from the beginning of the lesson throughout to the end*".
- *According to Student C* formative assessment "*is the type of assessment which is ongoing or goes on in the course of instructional delivery*".
- Student D indicated that formative assessment "*is a form of test teachers give to learners during lesson presentation"*
- Student F: responded as follows: "*formative assessment plays a very important role in informing the teacher about the learner's progress as well as about the effectiveness of teachers' classroom instructions, and the effectiveness of the curriculum materials being used in the classroom"*.

From the responses it is evident that not all student teachers are abreast with what formative assessment is though they do not see it as the same as summative assessment. though various definitions are given about formative assessment in the literature, in contrast to summative assessment, it makes overall judgment about the learning, achieved during a period of time for the, purpose of accountability, formative assessment has learning as its purpose for the improvement of learning on both the teacher and learners (Gallagher and Turley, 2012; Shavelson and Seal, 2003). Formative assessment is an ongoing process of evaluating the learner's learning, giving feedback to adjust instruction and learning, improving the curriculum whilst summative assessment, on the other hand, according to some respondents, is bound to administrative decisions and assigning grades to the tests.

When asked if *formative assessment and summative assessment serve the same purpose, some* respondents indicated that that formative assessment and summative assessment do not serve the same purpose.

Student A indicated that "*formative assessment emanates from classroom instruction, group work, and relates only to classroom activities and provides an alternative to summative assessment*".

Student C: "summative assessment has mainly to do with assignment of marks, like in tests and exams"

In responding to the question on the purpose of formative assessment, all respondents seemed to be aware of the importance, significance of formative assessment. To cite a few responses verbatim:

Student J: "*it serves as remedial teaching to the tutor, also in the classroom context it assists the tutor to find out about what has been assimilated by students*.

Student H: "through formative assessment, a teacher will *know if the objectives of the lesson have been achieved* and *if the learners are improving on what the he or she is teaching about*". This implies that learners will achieve more if they are fully engaged in their own learning process

Responding to a question on whether formative assessment enhances the efficacy of one's instructional strategies? All the respondents confirmed that it does enhance on their efficacy. Student D indicated that: "*through this form of assessment, I am able to assess myself in the teaching and learning process….It also enables me to ascertain whether learners are ready to proceed to the next topic"*. This implies that formative assessment can enhance the efficacy student teacher's instructional strategies. According to Jerald (2007), teachers with a stronger sense of efficacy exhibit greater levels of planning, are open to new ideas and more

willing to experiment with new methods to better the needs of their learners. Efficacious teachers are therefore perceived to have ability to create classrooms conducive to learning; gauge the learner's comprehension and adjust questions, strategies, explanations, and assessment to meet the learner's needs, particularly struggling students (Sridhar and Jayan, 2011; Tschannen-Moran and Hoy, 2007). Teacher efficacy is also related to the learner's own sense of efficacy and motivation. Regarding teacher behaviours, efficacious teachers persist with struggling learners and teachers with high efficacy tend to experiment with methods of instruction, seek improved teaching methods, and experiment with instructional materials (Yeoh, Ho and Chan, 2012; Serafini, F. 2010).

One student teacher highlighted a very interesting fact that: " *quite often, in as much as we as student teachers would teach, ask questions during lesson presentation and get an impression that every learner or at least most of them understand. Come classwork or test time. Their performance is usually disappointing."* The big question here is whether the learners were afforded an opportunity to be actively involved in the lesson. Participants were in agreement that formative assessment should facilitate learner participation in the lesson which is very critical in any teaching and learning environment. Student teachers were also in agreement that learners achieve more if they are actively and fully engaged in their own learning process.

The student teachers response to the research question 1 revealed that there are varied conceptions as to what formative assessment is about. Respondents agree in conceptualising formative assessment not to be the same as summative assessment and that both do not serve the same purpose. Respondents viewed formative assessment to be the hands-on-deck process of information gathering on the learner's academic achievements in the classroom. It shows that it is the type of assessment is on-going in instructional delivery. It was revealed that

formative assessment is introduced as an on-going process of evaluating learner's learning, providing feedback to adjust instruction and learning, improving the curriculum. Summative assessment, on the other hand, is bound to administrative decisions and assigning grades to the tests. This really shows that respondents are not abreast with what formative assessment is. Although they did not see it as the same as summative assessment, tutors confused internal assessment with formative assessment.

It came to light that formative assessment provides a teacher with a link between assessment and teaching as it is an essential way of creating independent, reflective learners who can plan and assess their own progress. It was revealed that formative assessment is about those activities that are used to improve student learning and agreed that formative assessment is used to provide information on the likely learner performance to describe strength or weakness and feedback given to them regarding things they got correct or wrong.

Regarding the second research question, based on assessment techniques used by Biology student teachers to assess learner's learning in the classroom situation, there was some level of agreement. A number of themes emerged, for example, participants stated that interactive formative assessments promote learning outcomes through questioning in form of dialogue. Clarifying and sharing learning intentions and criteria for success engineer effective classroom discussions and learning tasks in formative assessment (Gallagher and Turley, 2012). Participants/ student teachers also agreed that the use of formative assessment classroom techniques is an integral part of teaching and learning in formative assessment.

Student teacher's also mentioned interactive formative assessment as important. Student B said "*it is the form of assessment which helps the teacher to find out what learners have assimilated during teaching and learning in the classroom*". Student F: "*in this form of assessment questions are asked in open discussion. Questions and answers are used to*

introduce the lesson. Learners could also be called upon to say what they learnt during and after the lesson".

Participants also highlighted the importance of interaction between the teacher and learners. In the words of one of the participants this relationship " *is like the bridge that holds two roads together*". They also mentioned the importance of giving feedback as a form of motivation for learners to learn. Motivation and self-esteem play a significant role in learning and assessment (Nicol & Macfarlane-Dick, 2006; Serafini, F. 2010). Peer and self-assessment was said to enhance formative assessment as well. Self - assessment is an important tool for teachers. According to Gregory, Cameron and Davies (2000) when teachers employ self - assessment in their classroom, they are able to identify gaps between what they have taught and what learners have learned. Learners are then able to guide their own learning, with the teacher providing help where necessary or appropriate.

Formative assessment is as an on-going process of evaluating the learner's learning, providing feedback to adjust instruction and learning, whilst summative assessment, on the other hand, is bound to administrative decisions and assigning grades to the tests. It was also revealed that formative assessment helps the teacher to know if the objective of the lesson has been achieved and if the students are improving on what is being taught because it is about those activities that are used to improve learner's learning.

Limitations of the study

The findings of this study were based on the analysis of the conceptions of only 30 Biology student teachers and therefore the sample size, sample frame and sampling method make it difficult to generalise these results to the whole population of science students at this university of technology.

Conclusion

The study sought to examine the conception of Biology student teachers on the use of formative assessment during their high school teaching practice. It became evident that the concept of formative assessment was wrongly conceived by some student teachers. This is because student teachers could not differentiate between internal assessment and formative assessment as they confused the two assessments. Formative assessment is intended to provide the teacher with a link between assessment and teaching as it is an essential way of creating independent, reflective learners who can plan and assess their own progress (Stiggins, 2010; Moss, and Long, 2008). It also motivates teacher-learner relationship in the classroom.

Formative assessment is used to provide information on the likely performance of the learners to describe strength or weakness and feedback given to the learners, informing them which items they got right or wrong. It is the lived, daily embodiment of a teacher's desire to refine practice based on a keener understanding of current levels of learner performance, undergirded by the teacher's knowledge of possible paths of learner development within the discipline and of pedagogies that support such development.

It is recommended that a lot emphasis needs be put the current trend in formative assessment in teaching teacher-trainees This will guide them to re-evaluate and upgrade their knowledge base and conceptions about the formative assessment in their respective subjects/ disciplines.

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Teacher-Candidates' Valued Professional Knowledge: What Is It and Why Is It Valued from the Perspective of a New Teacher Candidate?

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Abstract

The study examined the perceptions of incoming Bachelor of Education (B.Ed.) teacher-candidates regarding the knowledge they brought with them to the program and the knowledge they sought from the program. The purpose of the study was to examine what knowledge these individuals perceived as valuable, and what was the basis of this valuation of the owned and sought knowledge. A qualitative and quantitative survey was administered, and the results were analysed to identify what types of knowledge are valued by these education students upon entering the BEd program. This study also identified some of the teacher-candidate misconceptions of what it means to be a teacher. The results indicate that past experiences in other roles (e.g., student, golf coach) have created a mental image of what it is to be a teacher and this limited scope is the foundation for their entry into the program. The results can be used to better understand the mindset of the new teacher candidate upon entering a teacher professional program.

Introduction and Background

Each province in Canada creates, manages, and monitors its own education system. Up until this year, the province of Ontario had a Bachelor of Education (B.Ed.) program that took degree-holding individuals and allowed them to earn a teaching license and a B.Ed. degree simultaneously during an eight-month period. Commencing this year, this program has been replaced with a new four-term scheme.

The form the four-term program takes and the implementation of said program has been left to the discretion of the individual institution. This left education providers scrambling to create a new program that met the Ministry's objectives and conditions, while being competitive in a program-saturated market. Faculties of education undertook this task by reflecting on what we know teachers need to learn, what we think they might need in the future, and what the Ministry wants us to teach. In this manner, the process was undertaken with the unstated belief that each candidate is a blank slate upon which we could engrave what we, as the faculty and the Ministry, perceive to be the knowledge necessary to become a good teacher. Though Harper and Ross (2011) found that "adults need to be responsible for their own education and be involved in the creation of it" (p. 165), there is no documented instance of any institution inquiring as to what the potential candidate wished to learn or what knowledge they already had upon entering the program.

This year is year one of the new program in Ontario. Many institutions have year two only outlined on paper, drafted as possible courses, practicum, and a tentative schedule. In order to understand what is needed in the four-term program, we need to understand the needs of the potential students.

According to Knowles (1980), andragogy is "the art and science of helping adults learn" (p. 43). One of his six key principles of andragogy is the importance of past experience. Knowles stressed that adult learners arrive in the learning environment already holding valuable life experiences that can be used by educators to deliver the curricula. He further argued that adult learners are more eager to learn when the knowledge being taught is relevant to their needs (Chan, 2010). This would indicate that data on the typical kinds of life experiences teacher candidates have would provide the instructor with valuable information on which to scaffold new material relevant to learning to be a good teacher. This study examined the perceptions of incoming Bachelor of Education teacher-candidates regarding the knowledge and experiences they brought with them into the program that they deemed valuable. In doing this, it also isolated the knowledge they sought from the program. It was hoped that in conducting this study the discovered valued experiences and knowledge, and the basis of this valuation, would be beneficial data on which to develop and strengthen teacher education programs.

Literature Review

Knowledge is touted as the key sources of sustainable competitive advantage for organizations in today's knowledge-based economy (Drucker, 2001). Similarly, knowledge is highly valued within Education as one of the primary goals is to disseminate content knowledge from teacher to student, while acquiring affective knowledge on the student and pedagogical knowledge on how and why students learn (Joyce, Weil, & Calhoun, 2009). However, Ford and Staples (2006) suggest that the value of the knowledge may differ depending on perspective taken and context (e.g., an expert in a given field versus a student in the same field). This suggests that the value of knowledge may differ between the faculty members in a teacher-training institution and the teacher-candidates entering the program. Perceived value of knowledge has only been examined within a business context with employed knowledge workers, and only from the perspective of the knowledge they possess,

not the knowledge sought. This makes the study upon which this paper is written truly unique.

What Does Value Mean?

Value has been defined as "an interactive relativistic preference or, more formally, as a relativistic (comparative, personal, situation) preference characterizing a subject's experience of interacting with some object" (Holbrook & Corfman, 1985; Socha, 1998). This would suggest that experience, including past experience, influence value. Given value's connection with experience, "what constitutes value appears to be highly personal and idiosyncratic" (Zeithaml, 1988, p. 19). Simply put, value is a perception (Day & Crask, 2000). If an individual's valuation of knowledge impacts his/her behaviours (e.g., the active seeking of the knowledge, the adoption and use of the knowledge, the sharing of the knowledge with others), then it behoves the education stakeholders involved in teacher education to understand this construct better.

Owner Perspective of Valuable Knowledge

When applied to the valuing of knowledge, several researchers in the knowledge management field have offered suggestions for basis of value. Augier, Shariq, and Vendelo (2001) state that the relevancy of the knowledge may determine its value; the more relevant the knowledge is to the problem at hand, the more valuable it is. Davenport and Prusak (1998) argue that knowledge is valuable because it is close to action. This mirrors the conjecture that the relevancy or usefulness of the knowledge may be a factor in determining its value.

Chan (2010) applied Knowles's andragogy theory in post-secondary settings and found that andragogical approaches to teaching resulted in improved learning among adults. As previously mentioned, Knowles states that adults are more apt to learn when the material being presented is deemed relevant to their needs. He also specified that the adult learner is more likely to be driven to learn by internal motivators than by external motivators. This is often demonstrated by a willingness to participate in learning that they understand to be valuable (Chan, 2010; Taylor & Kroth, 2009). While supporters and detractors of Knowles' theory continue to debate the strength andragogy, his theory indicates that intrinsic motivation is a contributing factor for mature students. This idea is well supported in the literature (e.g., MacGregor & Ryan, 2007; McCune, Hounsell, Christie, Cree, & Tett, 2010; Waller, 2006). Valued knowledge is knowledge the person deems they have not yet acquired from their own previous experiences. Seeking valued knowledge would thus propel learners to actively engage in their education.

Ford and Staples (2006) examined why people value the knowledge they own and found that individuals value based on three dimensions: usefulness (i.e., relevance), the benefits from owning the knowledge (e.g., the job, respect, money), and the source of the knowledge. They found that people, on average, tended to value knowledge they had received from formal education less than knowledge they had gained from personal experience. If experiential knowledge is valued more highly, then our teacher-candidates' knowledge and previous experiences that they perceive to be related to teaching should be more valued than the knowledge they possess from their degrees. If true, this would indicate that teacher-training programs would benefit from scaffolding new knowledge on the previous valued experiences that teacher-candidates bring with them into the program.

Seeker Perspective of Valuable Knowledge

In a study on teacher performance appraisals for professional growth, it was discovered that if there is a lack of motivation to embrace new knowledge, an unwillingness

to engage in changes to practice followed. This occurred when the perceived results, the acquisition of said knowledge, was not intrinsically valued by the teacher (Barnett, 2006). If these findings apply to pre-service education, it suggests that for the teacher-candidates the valuation of the knowledge sought in the B.Ed. degree program may impact the amount of attention and effort given to acquiring and adoption/use of the knowledge available in the program. Students are seekers of knowledge. Anything that is sought is, by definition, valued. If the knowledge is not sought, or believed to already be owned, it is not valued.

So how do seekers of knowledge determine the value of the sought knowledge? The perceived value may involve a consideration of the utility gained by the use of the acquired knowledge minus the disutility of obtaining and using it (Sinden & Worell, 1979). For example, the teacher-candidates in the B.Ed. program are expected to attend and succeed in a variety of university courses and practical experiences. Given Ford and Staples (2006) found that people tend to value knowledge they had received from formal education less than knowledge they had gained from personal experience, one can assume that teacher-candidates will value learning that builds on past experience or that is experientially-based. This is the purpose of the practical experience in the BEd program, although past research has had mixed findings regarding the effectiveness of the practicum for novices (e.g., Ferguson, 1989; Goodman, 1986). A difference of valuation between the knowledge presented in course work versus that experienced during the practicum may lead to different knowledge seeking behaviours, such as differential attention to the lessons learned in the different settings (e.g., more focus on the lessons learned in practicum if practice-based knowledge is more valued and if the teacher candidate considers himself already well versed in the other areas due to previous degrees or previous experiences).

It has been found that teacher-candidates become disenchanted when they encounter a practical difficulty perceived to be outside the skill-base acquired via course work in the teacher-training program (Aydin, 2009). Thus it could be argued that teacher-candidates seek and value practical knowledge for concrete solutions and that this should be illustrated in the types of sought knowledge that they consider valuable. In this study, we sought answers to the questions: (1) What knowledge do Bachelor of Education teacher-candidates value? and (2) What is the basis of the perceived value? Specifically, we were interested in the teacher-candidates' perceptions as they started the program surrounding the knowledge they already possessed based on their experiences and the knowledge they felt they still required from the program.

Methodology

One commonality shared by those in the former two-term program and those in the newly created four-term program is demographics. Specifically, all candidates are degree-holders. They enter the program around the same age. No difference in the sex make-up of classes has been noted. The majority still hope to apply what they learn in the program to teaching children or adolescents in a school classroom. The individuals entering the new four-term program seem to be similar to those who entered the program that previously existed. Thus, this study assumes that the candidates are similar, and enter with similar backgrounds and experiences. With this assumption in place, identifying the needs and valued experiences of previous students who were teacher-candidates in the two-term program would be a first step in shedding light on what might benefit candidates in the new four-term program. It is further assumed that understanding the experiences and beliefs of those who previously entered the two term program may allow for the identification of misconceptions and the perceived needs of teacher-candidates in the four term program.

This assumption of similarity between the past and current cohort allowed the researchers to gather data on valued knowledge from those at the start of the previous two-

term, 8-month program. It was thought that that once gathered this data could be analysed, reflected upon, and used to inform the new two-year, four-term program. We agreed we could not wait until the two-year program was fully operational before we began our investigation into valued knowledge and experiences. We assumed that it would be easier to alter and improve upon that which is still developing, opposed to attempting to alter a program that was finally established.

With these assumptions in place, we began to investigate means to identify valued knowledge and experiences already held by the teacher-candidates. One way to examine how individuals perceive knowledge is through a construct called *perceived value of knowledge* (Ford & Staples, 2006). Perceived value of knowledge is defined as the attitude about the worth of the knowledge.

Method

To discover what knowledge was valued, a questionnaire was distributed to the teacher-candidates at the start of their two-term program. The questionnaire asked teacher-candidates to identify and describe knowledge that they do not have but which they believe is valuable to them as a future teacher. They were then asked to describe why they consider it valuable. The survey then asked them to identify and describe knowledge that they do have which they believe is valuable to them as a future teacher. Finally, they completed a measure (Perceived Value of Knowledge - PVK; Ford & Staples, 2006) and were given the opportunity to add any additional reasons for why they believe the knowledge is valuable to them.

Population. Following university ethics review, participants were recruited from a university consecutive education program. No other selection criteria were applied. At this university, teacher-candidates are grouped in classes based on the school level in which they hoped to become certified. Cohort grouping assist in peer-based learning (Manoucherhri, 2002). It is important to note that those planning a career in elementary teaching take a wide range of courses at the faculty, while those in the secondary panel focus mainly on becoming specialists in two subject areas. Teacher-candidates hoping to become teachers in the middle years, specialize in one subject area while also taking a similar wide range of courses as those who wish to focus in the elementary division. All three groupings of teachers take classes in foundational subjects such as methodology, classroom management, special education, computers, and understanding schooling.

Recruitment. After gaining permission from individual professors, teacher-candidates were visited in class and presented with the purpose of the study. While there were more groups with a focus on the elementary system enrolled at the faculty, all levels were sampled in this study.

After the presentation, the teacher-candidates were given the letter of information and survey to complete during the start of class. Participation was strictly voluntary. In addition, teacher-candidates were aware that they could withdraw from the study at any point. A total of 266 surveys were distributed, and a total of 237 completed surveys were returned, for a participation rate of 89.1%.

Analyses

The completed questionnaires were entered into a spreadsheet, then each question was analyzed individually. The open-ended questions were coded by two independent coders using a data-driven codification scheme, resulting in categories. Once the categories were developed, with all representative quotes listed, the categories were compared for

congruency. There were very few discrepancies noted, and in the case of discrepancies, a topic expert made the final call on the appropriate coding and label for the categories.

Results

The results fell into four categories: 1) Valued knowledge that the teacher candidates brought with them to the program, 2) Perceived value of knowledge of owned knowledge, 3) Valued knowledge that teacher-candidates sought in the program, and 4) Perceived value of knowledge for sought knowledge.

Owned Knowledge

Owned knowledge is knowledge that students already held upon entering the program. The value of the owned knowledge is based on their personal perceptions.

Valued knowledge that teacher-candidates bring to the program. Participants were asked to identify knowledge they currently owned and that they perceived to be of value for the profession. The resulting answers were categorized based on commonality. It should be noted that most respondents listed more than one category, thus the sum of the listed percentages exceed 100%. (See Table 1 for summary of categories and illustrative quotes.)

The most common response was that the teacher-candidates valued the content knowledge of the subject matter they expect to teach when they go into the workforce (noted by 47% of the respondents). This valued knowledge is reflected statements such as "I know my subject matter very well and will not have any trouble teaching it." This means that a significant number of teacher-candidates enter the program with the perception that they already hold valuable knowledge of the content teachers teach in schools.

The second most frequent response (40%) found teacher-candidates stating that previous experience working with children was valued knowledge. Experiences in camps and coaching, as educational assistants, siblings and parents, were the most frequent descriptions of their previous experience. As expected, an understanding of children was valued; however, a background in child psychology or child development ranked ninth in valued knowledge. It is possible the theoretical knowledge about child development and psychology was less valued than experiential knowledge of working with children. This would support the literature findings that experiential knowledge is valued more than classroom-based knowledge. The 40% of teacher-candidates who stated previous experience working with children was valued knowledge they brought with them into the program, made statements such as "as a future teacher, I have knowledge about dealing with kids on a daily basis as I have 2 kids of my own with real life experiences". There was a tendency to generalize experience with a small number of children known in a specific context to working with a classroom of students.

The third highest response of knowledge they owned upon entering the program was classroom management (37%). Comments such as "I know about classroom management," and "I have good management strategies" were common. Interestingly, there was a lack of specificity in these comments. There is no mention of specific management techniques, learning environments, or situational context.

Table 1
Summary of Valued Knowledge Owned Prior to B.Ed. Program

Category of Responses	**%**	**Illustration**
1. Subject Matter	47%	"I know my subject matter very well and will not have trouble teaching it."
2. Previous Experience with Children	40%	"I have been teaching golf for 10 years, so I have had the opportunity to deal with all ages."
3. Classroom Management Skills	37%	"I have good classroom management strategies"
4. People Skills	37%	"I have knowledge in communication skills."
5. Knowledge on How to Teach	36%	"I have knowledge on how and why kids learn the way they do,"
6. Natural Teaching Ability	31%	"Ability to spot students who require extra help."
7. Organizational Skills	22%	"I have a good knowledge of how to be organized."
8. Psychology Knowledge	20%	"I know many psychological theories regarding child development."
9. Other	18%	"Lots of minor details passed on from my father (who was a learner)."
10. Previous Teaching Experience	17%	"Training in a bank."
11. Knowledge of Special Needs	17%	"I have knowledge of children with special needs."
12. Knowledge on how to make learning fun	15%	"I know that children need to have fun at school, as well as learn and I can do that."
13. Special Skills	11%	"Hobbies that can aid me in my teaching."
14. Experience with Technology	10%	"Basic technological skills."
15. Cultural Knowledge	9%	"I have lots of cultural experience from teaching and travelling overseas. Therefore I can use that knowledge in our multicultural schools."
16. Content Knowledge for All Subjects	8%	"I understand most subject areas and the knowledge content for most expectations in the curriculum."

The area of people skills (37%) was the fourth most common valued knowledge teacher-candidates felt they brought with them to the program. In this area, comments such as "I have knowledge in communication skills," "I can relate well with students," and I have "good listening skills" were common. These comments suggest that the teacher-candidates believed they already held the interpersonal and interactional skills necessary to be good teachers.

Perhaps one of the most interesting findings was that 36% of respondents believed that they already knew how to teach and believed they were entering the program with this valued knowledge already owned. Responses in this section were of the following nature: "I

have knowledge on how and why kids learn the way they do," I know the "basics of how children learn [and the] basics of the curriculum," and "I know how to create plans, modify them and implement them. I also have plenty of experience with kids." Descriptors of the natural ability to teach included comments such as "I know how to be silly and enthusiastic no matter what I do, which encourages the children to take risks in their work as well," owning "a teaching inside voice," having a good "stress level," and "I believe I am able to simplify things so that one can understand better."

The remaining categories of valued knowledge were: organizational skills (22%), a background in psychology (20%), knowledge from previous teaching experiences (17%), special needs knowledge (17%), how to make learning fun (15%), technological knowledge (10%), cultural knowledge (9%), and content knowledge that included all subject areas (9%). Notably, some participants did not distinguish between knowledge and skills, which are related but separate issues (know how/why/when versus can do). Skills were left in the results analyses as the skills may reflect some underlying knowledge sets that are valued. Finally, 18% fell into the Other category. This was made up of philosophical statements such as "All children deserve and have the right to an education that provides them with all the skills and knowledge they require to participate, function in society to the best of their ability" as well as an assortment of statements such as a "knowledge of travel," "lots of minor details passed on from my father (who was a learner)" and "I am so overwhelmed right now that I don't feel like I know anything."

Perceived value of knowledge of the above owned knowledge. After participants were asked to list the types of knowledge they possessed that they valued, they were then asked to complete the existing global measure for perceived value of knowledge, the three dimensions (usefulness, benefits, and source), and uniqueness of knowledge (Ford & Staples, 2006). Next, they were given the opportunity to offer other reasons for why they valued what they valued. This allowed us to assess the extent to which the construct *perceived value of knowledge* explained the basis of the valuation of the different types of knowledge and what bases might be missing given that this construct has never before been applied to an education population.

Overall, the measures for perceived value of knowledge did not perform as well with the teacher-candidate sample as it did with employed knowledge workers from the Business field. While the Cronbach's alphas were for the most part acceptable, only the usefulness dimension of perceived value of knowledge actual was significantly correlated with the global measure of PVK ($r = 0.25$, $p<.01$). However, all other possible dimensions (benefits, source, and uniqueness) were significantly correlated to usefulness (see Table 2 for means, standard deviations, Cronbach's alphas, and correlations).

Qualitatively speaking, the majority of the respondents indicated that there were no additional reasons for why they valued the knowledge they brought with them into the program (81%). Of the remaining 19%, the majority of the additional reasons listed (73% of the 19%) still fell within the previously defined dimensions of perceived value of knowledge: usefulness, benefits, and source. Some additional comments regarding usefulness are summarized in Table 3.

Table 2
Correlations of Potential PVK Dimensions and Global PVK

	Mean(SD)	Cronbach's alpha	PVK	Uniq.	Benefit	Useful.
PVK (Global)	6.18 (1.41)	0.62				
Uniqueness	2.45 (0.92)	0.64	-0.04			
Benefits	5.01 (1.00)	0.76	0.04	0.01		
Usefulness	5.92 (0.71)	0.77	0.25**	-0.07	0.56**	
Source	3.84 (1.14)	0.65	0.11	0.15*	0.13*	0.15**

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).

The remaining responses were new in that they were not previously associated with perceived value of knowledge. The additional dimensions were: value congruence (associated with other values), valued outside work, future value, and idiosyncratic answers. See Table 3 for illustrative quotes for these potential new themes.

Sought Knowledge

Considering a significant number of teacher-candidates came to the program with the belief that they already held valued content knowledge, interpersonal skills, and that 36% believed they already held valued knowledge about how to teach, this next section on knowledge sought is enlightening. Sought knowledge is knowledge that students hoped to gain from the program. Again, this is based upon their own personal perceptions.

Valued knowledge that teacher-candidates sought in the program. The participants were asked to specify the types of valued knowledge they were seeking in the B.Ed. program. Again, individuals often listed more than one category of knowledge. (See Table 4 for a summary of the categories and illustrative quotes.)

Table 3
Summary of PVK Themes and Quotes

PVK Dimension (% of all respondents)	**Themes**	**Illustrative Quotes**
Usefulness (5%)	• Helps to do the job. • Helps me be more creative. • Helps me understand context. • Improves the quality of my output.	• "You need to know about classroom management to be able to hand[le] [sic] and manage your class." • "I think this knowledge helps me feel relaxed and add creativity to the classroom." • "This knowledge is going to help me to understand what is holding back some children." • "Helps create an environment where it fosters children's learning."

Benefits (6%)	• Confidence. • Creates more opportunities. • Provides me with a foundation. • Gives a sense of self-identity. • Improves quality of life.	• "Because it makes me comfortable in the classroom." • "It gives me a sense of accomplishment, personal achievement, and encourages me to keep trying." • "It gives me a foundation, something to grow on." • "Allows me to know that I have chosen the right profession."
Source (2%)	• From a key source in the field • From experience	• "Employee of a school board-connections in the field." • "Give me experience working with youth."

Table 4
Summary of Additional Themes and Quotes

Potential New PVK Themes (% of total respondents)	**Illustrative Quotes**
Value congruence (2%)	"It is valuable because caring for and taking care of each other is the reason we are here."
Valued outside of work (1%)	"It relates to life in general, not just in the school environment."
Future Value (0.5%)	"It is part of my future."
Idiosyncratic Answers (2%)	"Teachers can only do as well as they are doing personally in the long run."

The majority of respondents (55%) hoped to learn how to lesson plan, deal with curriculum expectations, legislation, how to integrate subjects and how to teach to a range of abilities. Descriptions included comments such as "I do not know how to make lesson plans," "how to plan material for a class over the span of the year," and expressions of the desire for exposure to curriculum guidelines, legal responsibilities, resources, and teaching strategies.

Thirty-eight percent desired to learn classroom management skills, such as "how to establish authority without being scary," "how to discipline effectively," and how to be "able to handle inappropriate behaviours of students."

The remaining categories of responses had much lower frequencies. Sixteen percent identified the desire to have teaching methods in specific content areas, in which they believed they were lacking. For example, "I do not have a strong knowledge base in physical education." Language, math, science and music were the other common areas mentioned. Others desired to be taught content, "I would like more practice knowledge of the subjects we will be teaching."

Thirteen percent hoped to gain knowledge of politics at the government, board and school levels. For example, they sought knowledge on the "inner working of the bureaucratic system," "educational law," "administrative duties," "union" information, "professional and personal relationships with staff members," "how to deal with parents," and "how to deal with tragic events." The remaining areas dealt with: strategies to deal with students with exceptionalities (11%), how to access resources (9%), specific skills such as grammar rules

and math skills, as well as how develop patience (7%), information on assessment, evaluation and reporting (6%), use of technology (5%), how to promote themselves in teaching (3%), and dealing with cultural and society issues such as different religions, cultures, and sexes in a classroom (2.5%).

Perceived value of knowledge for sought knowledge. After participants were asked to list the types of knowledge they were seeking in the program that they valued, they were then asked to explain why they valued it. As with perceived value of *owned* knowledge, the basis of the valuation of knowledge *sought* is multi-dimensional, meaning, individuals sought knowledge for more than one reason (see Table 5 for a summary). The most common reason for valuing knowledge was the perceived usefulness of the knowledge (69%). Examples included things such as the knowledge they sought would "help them be more effective as teachers," and "is applicable for everyday duties." These descriptions were the same as those found with business professionals for owned knowledge. Some new descriptors found with the teacher-candidates were: "The knowledge would help increase creativity," and the knowledge would help improve the quality of the outputs (e.g., students, learning environment, safety, involvement of various parties). Finally, some comments related more to the fact these individuals were students and not yet embarking on their careers, such as "the knowledge would give me strategies for dealing with my job/career."

The second most common category was benefits derived from having the knowledge (27%). Again, this category reflected the same dimension of perceived value of knowledge with business professionals, for example, "This knowledge would help me get/keep a job." However, there were a lot more benefits listed with the education teacher-candidate sample than the business knowledge workers (who typically focused on keeping their job, respect from others, and competitive advantage; Ford & Staples, 2006). Novel responses included: "This knowledge would protect me/others," "It would allow me to help others," "The knowledge would make me feel less overwhelmed," and it would allow me to meet environmental (governmental, technological, professional) needs/requirements.

Table 5
Summary of Valued Knowledge Sought in B.Ed. Program

Category of Responses	**%**	**Illustration**
1. Teaching Skills	55%	"I do not know how to make lesson plans,"
2. Classroom Management	38%	"How to deal with violent outbursts."
3. Subject Area Teaching Methods in Perceived Area of Weakness	16%	"I do not have a strong knowledge base in physical education."
4. Political Knowledge	13%	"How to deal with parents,"
5. Students with Exceptionalities Knowledge	11%	"I would like to know a little more about special ed and dealing with gifted children."
5. How to Access Resources	9%	"Knowledge of where to access info, which sites are most helpful as tools for teaching, resources, etc. I realize that this will come over time, but is highly valuable. I need basic comfort as to where to go for help."
6. Specific Skills (e.g., Grammar)	7%	"Would like to know proper grammar rules, various art techniques and science information."
7. Assessment, Evaluation, Reporting	6%	"The knowledge of how to provide accurate assessment of my students."

8. Technological Skills	5%	"Working with various computer software's, new technology (ex. brand new cameras)."
9. Job Promotion Skills	3%	"I do not have enough knowledge about the organizations teachers need to be in contact with in order to further their career. Example OECTA."
10. Differentiated Learning	2.5%	"I have no knowledge currently in how to plan a lesson, that will engage students with different learning styles."

The third most common response was based on alignment with values of the individual or the profession (9%). Examples include: "Because it's necessary for kids/adults to grow intellectually, morally and mentally," "Knowledge of the curriculum is valuable because it is the basis of what needs to be taught in the classroom." The final category noted by the teacher-candidates was the source of the knowledge (2%). In other words, the knowledge they were seeking was considered valuable because "I want to learn as much as I can from those who have 'been there, done that,'" or "These are both areas that I have very little experience in. Some of it seems like 'common sense,' but a great deal of it is more 'technical' and/or technique oriented."

Table 6
Summary of Perceived Value of Sought Knowledge Themes and Quotes

Dimension	**Themes**	**Illustrative Quotes**
Usefulness (69%)	• The knowledge is applicable for everyday duties. • It would help me work efficiently. • The knowledge would help increase creativity. • It would help me to understand the context (legal, student needs). • It would help improve the quality of my: students, learning environment, safety, involvement of various parties. • It would allow me to meet objectives • It would help me motivate my students.	• "This valuable because these are situations that must likely will be common in the classroom." • "It also enables the teacher to be organized and efficient within the classroom." • "Having legal responsibility knowledge with (1) provide guidelines so that I don't cross them, (2) protect myself as well as the school and the STUDENT, (3) let me know my rights."
Benefits (27%)	• It would help me get a job • It would protect me and others • It would give me confidence • It would make the job more enjoyable. • It would make me a better	• "I'd get a job." • "Teachers should know all the policies so that you follow the rules and don't risk losing your certificate." • "Gives confidence to teachers."

	teacher. • It would allow me to meet environmental (e.g., governmental, technological) needs or requirements	• "I also worry about how to handle any situations that I'm not prepared for."
Value Alignment (9%)	• This knowledge is associated with other (higher) values. • This knowledge is fundamental to the field and/or profession.	• "It is also important to be aware so that I can teach / exemplify compassion." • "Professionalism – understanding role in school, classroom, and community."
Source (2%)	• I want knowledge from people who have "been there, done that." • I don't have the experience, so I need to learn it. • This will be taught at University.	• "I want to learn as much as I can from those who have 'been there' and 'done that'. • These are both areas that I have very little experience in. Some of it seems like 'common sense,' but a great deal of it is more 'technical' and/or technique oriented.

Discussion

We sought to address two research questions in this study: (1) What knowledge do Bachelor of Education teacher-candidates value at the start of their B.Ed. program? (2) What is the basis of the perceived value? To address these questions, we studied the perceptions of a cohort of teacher-candidates as they started their B.Ed. program. At the commencement of the academic year, teacher-candidates in the same class do not know each other, have not been influenced through networking, and have not formed a bond with section mates. Given this data was gathered at the start of the school year, the knowledge valued and sought stem primarily from an individual perception without influence from experience in the program or peer concerns. In essence, this is the starting point with which teacher-candidates enter the program, what they deem they already have of value and what they hope to gain from the program.

Applying Valued Knowledge

Research has shown that teacher-candidates' perspectives at the start of their program are quite resilient against contradicting ideas, theories and experiences presented in the program (Gomez, Walker, & Page, 2000). Kagan (1992) found that teacher-candidates tended to use the information from the program to confirm their personal beliefs and images, rather than to challenge or confront them. Further, these personal beliefs and images determined how much knowledge the candidate learned from the program. If these findings are correct, then it should not be surprising that teacher-candidate who enter the program valuing content, valuing knowledge gleaned from previous experiences with children, valuing classroom management skills, and valuing knowledge on how to teach, should be seeking knowledge to confirm the value of these areas.

What does this mean for the development and betterment of teacher-training programming? While there are many different interpretations of this data, we feel it is important to focus on the valued knowledge of teaching, managing a classroom and context.

The act of teaching as valued knowledge. Subject matter / content knowledge was the most valuable knowledge teacher-candidates believed they brought with them into the program (ranked #1 at 47%), but it was also still highly valued in the sought knowledge category (#3 response at 16%). This suggests that teacher-candidates place a significant amount of value on the content of what is to be taught to their future students. They envision themselves as teaching content, not teaching students. This misconception in the importance of content has been documented in the literature on beginning teachers (e.g., Wong & Wong, 2004).

What is interesting, though perhaps expected, is that the focus they bring with them into the profession is that of teacher as instructor, opposed to that of teacher in service to the learner. Said another way, they view teaching narrowly through the lens of their own personal experiences and perceptions. They remember being students themselves and learning content. It appears they think teachers teach content, not students.

If the perceived role of students is to learn the content, it makes sense that teacher-candidates would view teaching from the perception of content transmission. In our study, we found that teacher-candidates at the beginning of the year believe that content knowledge translates into the ability to teach. Comments such as "I know my teachable subject very well and will not have trouble teaching it" and claims of knowing "how to teach step by step" were common.

When taking the second most common valued owned knowledge – experience working with children (40%) – and considering it in light of the 36% who believed that they already know how to teach, a belief that teaching does not entail a diverse pedagogical skill set is implied. When this is added to the result that the most common valued knowledge owned by the teacher-candidates was knowledge of content, this could indicate that upon entering the program, pre-service teachers view teaching as the act of transferring subject matter. As one teacher-candidate responded, "knowledge is the key to teach. We teachers cannot teach without knowledge…It is the base of our future profession. Teachers impart knowledge." This would explain the high value placed on content knowledge and the significant number who believed they already knew how to teach. It would also explain the desire to learn how to put this transference of knowledge down on paper in the form of a lesson plan but not to acquire pedagogical skills. However, an interesting issue with this is that past research has shown that knowing content knowledge does not necessarily translate into knowing how to teach the subject matter. For example, Ball and Wilson (1990) found that students with a mathematical studies background were "not well-prepared to unpack meanings of mathematical ideas" (p. 10).

For those teacher-candidates who claim knowledge based on experience in sport, the larger picture they do not yet have is the effect of interest on classroom learning. One may assume, for example, that most children enrolled in soccer wish to play soccer. Interest and motivation to learn is very different between a voluntary, internal desire to learn something like soccer and a forced externally mandated decision to learn a subject. The teacher-candidates with sport as experience who indicated that they already knew class management techniques appear to not yet realize the importance of applying teaching strategies to engage students. In their prior experiences the content alone (i.e. playing soccer) was the motivation for continued participation.

When we consider that the valued knowledge most sought by the teacher-candidates was teaching skills (#1 at 55%), a contradiction appears to arise as the majority of the teacher-candidates already believed they knew how to teach (36%) or had natural teaching abilities (31%). The key to understanding this contradiction lies in the emphasis the teacher-candidates placed on sought knowledge such as making lesson plans. The teacher-candidates seem to differentiate between being able to instruct someone – knowledge gained through

valued past experiences in fields that have an instructional component – and being able to plan for classroom learning.

In addition, the teacher-candidate's perspective of 'how to teach' is at a fairly macro-level (e.g., seeking to learn how to make lesson plans, and already knowing why kids learn the way they do) instead of the micro-level of fully understanding the underlying principles of the subject matter, how children learn in different ways, and how to explain content and any underlying conceptual understandings to students.

Upon entering the program, teacher-candidates often bring with them experiences instructing in other settings. Given that the focus of these instructional experiences was often on learning a skill, they view this as the purpose of teaching. They desire knowledge on how to translate this purpose into an educational setting by learning teacher skills, such as how to lesson plan, and deal with the framework in which this is to occur, for example the legal and bureaucratic issues they consider as inherent in education. Teacher education programs need to offer opportunities that allow teacher-candidates opportunities to build off of these other instructional experiences and/or connect them with the experience of teaching in a classroom and school setting. Experience applying lesson plans to past experiences may be a logical starting point upon which to introduce these desired teacher skill sets. It is, however, evident that teacher education programs need to use this as a launch point only. Teacher-candidates still require exposure to the breadth and depth of what it really means to teach, including different methodologies, accommodating individual learners, different ways of assessing, and the Big Ideas that underlie the factual based content. Perhaps if the professor at the faculty can make links between the knowledge already valued and what he or she perceives as new vital knowledge, motivation to acquire a deeper understanding of the act of teaching will occur.

Managing the class as valued knowledge. Classroom management was the other highly valued knowledge, both in terms of being brought to the program and being sought from the program. While the order ranking of classroom management was #3 for owned knowledge and #2 for sought knowledge, the percentage of teacher-candidates identifying it as valuable was identical (37% owned, 38% sought). Thus, teacher-candidates appear to believe that managing the classroom setting, or managing the students within the classroom setting, is a major component of their future career. Whether this stems from their own experiences as students in classrooms witnessing incidents or whether it was developed through adult experiences they gained working with learners, it is valid given today's increase in class-size and the diversity of student needs in a classroom. Research has indicated that teacher-candidates want practical knowledge that will assist them in handling day-to-day challenges as a teacher (e.g., Jones & Jones, 1998; Ontario College of Teachers, 2009).

This research seems to suggest that classroom management at the macro and micro level is an important inclusion in any program. At the macro-level, teacher-candidates desire to know how to manage a large group of students so that they can get on with the job of instructing. At the micro-level, teacher-candidates desire to know how to work with students with special needs and behavioural issues, so that learning does occur. This finding seems to suggest that classroom management at both levels needs to be an important element of the teacher education program. While they will gain some experience through practicum, in order for the learning at the faculty to be valued it is recommended that courses in both exist.

Context as valued knowledge. Teacher-candidates also desired what can be termed context knowledge. This included political knowledge, knowledge on how to access resources, and job promotion skills. These sets of valued knowledge all deal with functioning

within the work environment. They represent knowledge that will allow the teacher-candidate to survive and thrive within the bureaucracy and context of the profession. Considering they believe they have teaching skills, but have never taught as teachers in school classrooms, this is understandable.

This finding suggests that a class in the politics of teaching and the environment of teaching would be deemed valuable to teacher-candidates. While the practicum will give them initial exposure to these areas, practicum is a controlled-setting – acting under the watchful eye of an experienced teacher in his/her classroom, with his/her students, in his/her school. Knowledge about the different types of schools, different types of leadership models and their effect on school environments, the expectations of principals and superintendents, and legal requirements, would be beneficial and valued by the teacher-candidate.

Basis of Value of Knowledge

To address the second research question, the teacher-candidates were asked to describe why the knowledge was valuable to them, and to complete the existing perceived value of knowledge measure. The most noticeable result was teacher-candidates placed a very high weight on the usefulness of knowledge in determining its value. For knowledge that they brought with them to the program, usefulness was the only predicting dimension of the global perceived value of knowledge measure. Benefits and source also seemed to be relevant, but were noted as additional reasons for why the knowledge was useful.

The same saliency of usefulness was evident in the valuation of sought knowledge, as usefulness was the #1 reason at a noteworthy 69% of teacher-candidates indicating this. The next reason for valuing the sought knowledge was benefits, but at only 27%.

The findings here do seem to support Davenport and Prusak's (1998) conceptualization of why knowledge is valuable; it is valuable because it is close to action. Perhaps being concerned about being competent, teacher-candidates are most concerned about the 'action' of teaching, and thus any knowledge that has (in their mind) relevance to that action becomes highly valuable. This seems to indicate that any new educational program needs to place an emphasis on usefulness regardless of the content they chose to incorporate within their program design.

Conclusion

It was hoped that in conducting this study the discovered valued experiences and knowledge, and the basis of this valuation, would be beneficial data on which to develop and strengthen teacher education programs. Teacher-candidates enter programs with fairly consistent impressions of what knowledge is valuable to the profession and to them as a future teacher. This knowledge they value and seek in the program confirms their own previously held assertions. The surety and confidence in which they make claims about what they value are ingrained in past experiences. From these, they have created a mental image of what it is to be a teacher and this limited scope is the foundation for their entry into the program. We need to acknowledge, yet challenge, this limited scopes.

For the teacher-candidate, usefulness is the most salient basis of the valuation of the knowledge sought and owned. This suggests that in order to confront or challenge what types of knowledge they believe they *should* be seeking, illustrating usefulness may ease acceptance and increase value of new knowledge.

It may be wise for those designing teacher-training programs to use this valuation of usefulness to their advantage by focusing on giving the students the specific skill sets they

desire at the onset of the program. Once they have acquired the experience of this valued knowledge, the second half of the program could scaffold off of this valued knowledge to introduce the teacher-candidates to new knowledge that is deemed vitally important by the designers of the program or the program accreditation bodies.

As the literature indicates that knowledge gained by experience is often valued more than knowledge transmitted from a professor, classroom practicum should play a large role in any teacher-training program. Teacher-candidates should be placed in the classroom during the first week of school to see how the school year begins, the curriculum is introduced, and classroom rules are set. They need to be in classroom at report card times and during the conclusion of the year in order to gain practical experience into communication with parents and stakeholders. They need to have a large quantity of time teaching students in the classroom in order to put learning into practice, and develop teaching and classroom management skills. While this may only reify their valued knowledge concepts, it potentially could strengthen their experiences on which to build other important areas of knowledge as valued by the faculty, Ministry and accreditation bodies. In this way we design programs that not only consider what we value as important, but also acknowledges the valued knowledge that is sought from our respective institutions by those hoping to become future teachers.

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The Effect of Innovative Technologies for Engaging Classrooms (ITEC) Project on the Science Teaching

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ABSTRACT

The purpose of this study is to analyze the effects of innovative technologies (ITEC Project) to be used in future classrooms on the students' scientific process skills and their attitudes towards computer assisted science education. A quasi-experimental design with pretest-posttest control group was used in this study. Sample of the study consisted of 73 students who were 7th grade pupils of a secondary school in Samsun in the 2013-2014 academic year. "Environmental Problems in our Country and the World and their Effects" issue has been studied. Computer assisted project based applications was applied to the experimental group students. Normal course applications were made control group students. Data collection tools of study were Academic Success Test, Computer Assisted Science Education Attitude Scale and Science Process Skills Test. As a result of the analysis, this result was been achieved: ITEC project are shifting in a positive direction; academic achievement, science process skills and attitudes toward computer-based science education.

Keywords: ITEC, Science Teaching, Computer Assisted Education, Project-Based Learning, Scientific Process Skills, Attitude.

Introduction

Human beings have tried to understand and communicate with the world they live in from the day they existed until today in order to continue to exist. Science arises from human beings' efforts to understand the universe, themselves and the people around them and individuals learn to shape their perception within educational environments.

Physical sciences contain organized and systematic scientific information gained as a result of people's interactions with their natural environment. The vision of physical sciences education has been defined as "educating scientifically literate individuals" (MEB, 2013). Scientifically literate individuals are aware of their environment, they make researches and they question, they have problem solving skills, they are self confident, they are inclined to collaborate and they are also expected to have scientific process skills. In the most general sense, scientific process skills can be defined as the skills that are used to reach information and to make information more systematic. Çepni et al. (1997) define scientific process skills as basic skills that facilitate learning, make individuals more active and make them responsible of their own learning, enable access to information by showing the ways and methods to research and thus increase permanence. Ostlund (1992) defines scientific process skills which enable individuals to think like scientists as the strongest means that individuals have to produce information and to make it systematic.

Fast advancements in science and technology and ever increasing information have made it impossible to transfer all the information in a field to students. Thus, the content of physical sciences education has changed and rather than transferring information, scientific process skills that enable teaching ways to gain information have become important (Harlen, 1999; Hu and Adey, 2002; Meador, 2003; Padilla, Okey and Garrand, 2006). With the help of scientific process skills, students participate in lessons more actively and what they learn becomes more permanent. Scientific process skills, which are used in sensing and looking for ways to solve the problems encountered in both lessons and in daily life also contribute to scientific literacy. Scientific process skills such as making new trials by changing the variables, forming hypotheses, organizing experiments and making observations support the creativity and mental development of students. Experiments and scientific process skills which form the basis of physical science support each other. Thus, scientific process skills are inevitable in physical sciences education (Tan and Temiz, 2001).

With the reflection of technological developments to educational environments, a great number of new projects have been realized and learning environments and curriculums have begun to be prepared accordingly. The process that started with computers being used more and more in education has come to a state of education being carried out by innovative technologies. ITEC Project conducted by the Ministry of Education YEĞİTEK in our country has a design based on project based learning focused on the application of new technologies with new pedagogies and this project has been conducted in pilot schools of 18 countries in Europe since 2010 (ITEC, 2013; Blahova, Sivy, Michalko, and Szalay, 2013). Lewin, Ellis, Haldane and McNicol (2013), have stated that ITEC Project is assisted by information and communication technology tools, it inspires teachers to change and improve their pedagogic activities and it includes “class scenarios of the future” and “learning stories and activities”. Meta-analysis studies on ITEC show that it has a positive effect on the 21st century skills (cooperative study, creativity and digital literacy skills), motivation, responsibility and attitudes of students. In addition, it is also reported to have useful effects on technology assisted pedagogy, digital efficiency, motivation, attitude and responsibility of teachers (Janisková, Daridová, and Homolová, 2013; Michalko, Jakap, Szalay and Blahova, 2011).

Among the important principles of ITEC Project, there is the principle of eliminating schools’ tendency to limit students’ using personal technology. In the future classroom where interactive boards play an important role, students and teachers integrating and using personal technologies (computer, smart phone, etc) and web 2.0 content accurately carry learning outside physical areas (Skaug, 2012). In future classrooms, the fact that information and technology tools are completely integrated into the lessons requires students and teachers to be in a sufficient level to use current technologies. The most basic use of information and communication technology tools starts with the computer. A great number of studies have shown that computer assisted education increases students’ academic success.

(Çelikler and Yalçın, 2008; Keengwe, and Hussein, 2014; Kibos, 2002; Taş, Köse and Çepni, 2006; Taepke, 2007).

According to Köse and Gezer (2006), the attitude of the users is one of the factors that affect efficient use of computers in education. Negative attitudes towards computer affect students' and teachers' motivation and performance (Levine and Donitsa-Schmidt, 1998; Weeter, 1986). When the literature is reviewed, it can be seen that there are a great number of studies in various lessons and applications analyzing students' attitudes to computer (Altun, Yiğit and Adanur, 2011; Aslan, 2006; Lang, 2004; Taghavi, 2006; Yalman and Tunga, 2014).

The purpose of this study is to analyze the effects of innovative technologies (ITEC Project) to be used in future classrooms on the students' scientific process skills and their attitudes towards computer assisted science education. Thus, the learning story "create a difference" in the fifth phase of ITEC Project was chosen and a practice was made on the "Environmental Problems in our Country and the World and their Effects" in the "Human Beings and the Environment" Unit of 7th grade. "Visualize-Research-Reflect-Mapping-Do-Ask-Cooperate-Show and Reflect" learning activities were used and students were made to conduct projects by using information and communication technologies.

The study researches to answer the following sub problems;

For participant classes, in terms of innovative technologies application;

1. What is the effect of innovative technologies on students' academic success?
2. What is the effect of innovative technologies on students' scientific process skills?
3. What is the effect of innovative technologies on students' attitudes towards computer assisted science education?

Method

Study Design

The study uses quasi-experimental design with pretest-posttest control group which is one of the quantitative research methods. A research and a control group were formed from the randomly chosen 7th grade students. While no practice was made for the control group, project based teaching was performed on the experiment group with the learning scenario and activities in the ITEC Project.

Table 1. *Experimental Desing*

Groups	Pretests	Experimental Procedure	Posttests
Experiment Group	AST* SPST** *CASEAS* ***	Project-based teaching practices carried out using the learning scenarios, stories and activities in ITEC project	AST* SPST** *CASEAS* ***

Control Group	AST* SPST** *CASEAS* ***	Traditional teaching methods	AST* SPST** *CASEAS* ***

*AST: Academic Success Test
**SPST: Scientific Process Skills Test
*** *CASEAS*: Computer Assisted Science Education Attitude Scale

Universe and Sample

The universe of the study includes 7th grade students attending middle schools of Ministry of National Education in Samsun during the 2013-2014 Academic Year. The sample of the study includes 38 experiment and 37 control group students studying at two randomly assigned 7th grade classes.

Data Collection Tools

"**Academic Success Test**" was used to determine the effect of learning activities in ITEC Project on the academic success of the students; "**Scientific Process Skills Test**" was used to determine the effect of learning activities in ITEC Project on scientific process skills and **"Computer Assisted Science Education Attitude Scale"** was used to determine the effect of learning activities in ITEC Project on the students' attitude towards science education.

Academic Success Test (AST): The test which includes a total of 20 multiple choice questions is used to determine the effect of learning activities conducted in ITEC Project implementation process on the academic success of students. The test was developed by one of the researches as a part of his doctoral thesis in order to determine the attainments of the "Environmental Problems in our Country and the World and their Effects" subject in the "Human Beings and the Environment" Unit of 7th grade and its reliability coefficient (KR-21) was found to be .86.

Scientific Process Skills Test (SPST): Scientific Process Skills Test which contained 27 questions was developed by Aydoğdu, Tatar, Yıldız and Buldur (2012) for 6th, 7th and 8th grade students. The scale which had a reliability coefficient (KR-20) of .84 and an average difficulty of .54 includes questions that measure basic and top level skills. The test has 9 questions aimed at basic skills of observation, classification, using space/time relationship, estimation and deduction. In addition, the test has 18 questions to measure the top level skills of problem determination, making a hypothesis, determining and controlling the variables, making experiments and commenting on the results.

Computer Assisted Science Education Attitude Scale (CASEAS Scale): An attitude scale including 33 items developed by Yalçın and Alat (2014) to determine the attitudes of the students towards using computer in science lessons was used. The scale is 5-Likert type and it has positive and negative statements. Reliability coefficient of the scale was found to be α=.902.

Data Collection

In the study, the subject "Environmental Problems in our Country and the World and their Effects" in the "Human and Environment" Unit of 7th grade was chosen for data collection. A practice was made on the experiment group while control group students were not included in ITEC practices and their lessons were taught according to the curriculum of Ministry of National Education. A lesson plan was designed about the chosen subject based on the learning story "create a difference" in the fifth phase of ITEC Project and the time and procedure of "Visualize-Research-Reflect-Mapping-Do-Ask-Cooperate-Show and Reflect" learning activities were determined in the lesson plan.

A three week long period was determined for the practice. A website was prepared by the researchers for the students to get help from during the practice and the site was opened for access from the address http://iteccevree.weebly.com/. The website started with the slogan "Let's Prolong the Life of the World" and it included short briefing parts on the subject, videos for the students to watch during the visualize stage, links of the websites that can be used during the research stage, internet addresses of the environment institutions that can be cooperated, a part that included information and calculation about "carbon footprint" to increase the students' awareness and ITEC tools and links that the students can use while preparing projects.

During the practice the following were made:

1. "Academic Success test", "Scientific Process Skills Test" and "Attitude Scale for Computer Assisted Science Education" were conducted on the students in control and experiment groups as pretest.
2. Experiment group students watched the videos chosen on environmental pollution and problems in order to create environmental awareness.
3. The students were told that each person caused environmental pollution and they were informed about "carbon footprint", the students' carbon footprints were found and they were made to realize their responsibilities on the harms they gave to the environment personally.
4. The students were informed about the ITEC Project and they watched the inspiring videos of the students who had made practices before.
5. The students were informed about the works to be made on eight kinds of environmental problems, namely "Soil Pollution", "Water Pollution", "Sea Pollution", "Analysis of the Ozone Layer", "Greenhouse Effect", "Global Climate Change", "Forest Destruction" and "Nuclear Pollution" in our country and the World.
6. The students chose the environmental problem that they would work on and their team mates and the groups were recorded in the team-up program.
7. For two lesson hours, the students were informed about web 2.0 tools and various computer programs they could use while making their project practices.

8. Following this phase, the students began to prepare their projects by using the steps “Visualize-Research-Reflect-Mapping-Do-Ask-Cooperate-Show and Reflect” for three weeks, teachers guided the students and followed their working calendar.

9. At the end of three week long practice, the projects made by the students were presented in the classroom.

10. After the students made small changes in their projects in line with feedbacks from their teachers, the final state of their projects were cast at the address http://iteccevreseyfioo.weebly.com/. Thus, the students got the chance to share their products with their peers, their parents and a great number of people.

11. One week after the project was completed, “Academic Success test”, “Scientific Process Skills Test” and “Attitude Scale for Computer Assisted Science Education” were conducted on the students as posttest and the data were analyzed.

Data Analysis

Independent groups t test analysis was conducted on the data obtained from pretests of experiment and control groups and the difference between groups at the beginning of the practice was checked. Experiment group pretest-posttest analysis and control group pretest-posttest analysis were made in order to observe and comment on the changes that took place in groups at the end of the practice. At the end of the practice, posttest results of the experiment group and the control group were compared and the problem of the practice was interpreted.

Results

There are the results of the analysis which data obtained in the experimental and control group in this section. These results were obtained by SPSS 17 software.

In the study, independent-samples t test was performed to determine differences before application experimental and control groups selected through random assignment. T-test significance level (p) was taken as .05. Table 2 shows the analysis results of average scores obtained "Academic Success Test (AST)", “Scientific Process Skills Test (SPST)”and "Computer Assisted Science Education Attitude Scale (CASEAS)" of the experimental and control groups.

Table 2.

T-Test Results between the Groups obtained from Pretest Scores Both AST, SPST and CASEAS

	Groups	(N)	(X)	(SS)	(Sd)	t	p
AST	**Experimental**	38	10.473	4.717	73	-.785	.435
	Control	37	11.270	4.039			
CASEAS	**Experimental**	38	123.157	18.612	73	.090	.929
	Control	37	122.705	24.590			
SPST	**Experimental**	38	11.144	5.867	73	.946	.347
	Control	37	10.081	3.622			

When Table 2 was examined average Academic Success Test of the experimental and control groups are seen to be close to each other. There was no significant difference between groups before the application ($t_{(73)}$=-.785: p>.05). Means of attitude score of the students in the experimental group was calculated as 123.16 while control groups score was calculated 122.71. Prior to the application, attitudes towards computer-assisted science education of group was not a significant difference between ($t_{(73)}$ =.090: p>.05). Before the implementation. the scientific process skills tests of groups are close to each other. At the same time, there is not any significant difference between groups ($t_{(73)}$ =.946: p>.05).

According to all these results; it was said that the variable levels of experimental and control groups such as the success, attitude and scientific process skills are close to each other before the application.

Table 3.
T-*Test Results Intra-Group Total Scores of AST and Other Scales of the Control Group*

	Tests	(N)	(X)	(SS)	(Sd)	t	p
AST	**Pre-test**	37	11.270	4.039	36	-.417	.679
	Post-test	37	11.702	4.892			
CASEAS	**Pre-test**	37	122.705	24.590	36	2.886	.007
	Post-test	37	108.792	20.722			
SPST	**Pre-test**	37	10.081	3.622	36	-2.658	.012
	Post-test	37	12.066	4.022			

Pre-test and post-test analysis of the tests conducted control group are shown in Table 3. It is observed that Students' average scores taken from Academic Success Test slightly increased in the last test, but there is not a significant difference between pre-test and post-test scores ($t_{(36)}$ = .417: p>.05). Any computer assisted applications haven't been made control group students. However, attitudes towards computer assisted science education (CASEAS) were measured. After teaching, it is seen that students' average attitudes has been a decline. Control group students' CASEAS scale between pretest and posttest scores occurred a significant difference in favor of the pre-test ($t_{(36)}$ =2.886: p<.05). According to the pretest-posttest results of scientific process skills, there is a significant difference in favor of the posttest. So, students 'scientific process skills have increased after teaching post ($t_{(36)}$=2.658: p<.05).

Table 4.
T-*Test Results Intra-Group Total Scores of Academic Success Test and Other Scales of the Experimental Group*

	Tests	(N)	(X)	(SS)	(Sd)	t	p
AST	**Pre-test**	38	10.473	4.717	37	-5.922	.000
	Post-test	38	15.394	3.694			
CASEAS	**Pre-test**	38	123.157	18.612	37	-5.317	.000
	Post-test	38	143.708	16.825			
SPST	**Pre-test**	38	11.144	5.867	37	-6.548	.000

Post-test	38	16.807	4.949	

Pre-test and post-test analysis of the tests conducted experimental group are shown in table 4. It is seen that the experimental group students' average score of Academic Success Test has been increased from 10.47 to 15.39 in the table. Furthermore, it is seen there is a significant difference between pre-test and post-test scores of experimental group students ($t_{(37)}$ =-5.922: p<.05). It was calculated that even tough attitude score is 123.16 before application, same scale score is 143.71 after application of experimental group was carried out computer and internet project-based teaching applications. These values show that there is a significant difference between pretest-posttest attitude scores of the experimental students and students' attitudes towards computer-assisted in science education has been a positive change after application ($t_{(37)}$ =-5.32: p<.05). At the same time, it was seen the scientific process skills pretest-posttest scores are significantly different ($t_{(37)}$ =-6.54: p<.05).

Table 5.
T-Test Results between the Groups Obtained from Post-test Scores Both Academic Success Test and Other Scale.

	Groups	(N)	(X)	(SS)	(Sd)	t	p
AST	**Experimental**	38	15.394	3.694	73	3.69	.000
	Control	37	11.702	4.892			
CASEAS	**Experimental**	38	143.708	16.825	73	8.021	.000
	Control	37	108.792	20.722			
SPST	**Experimental**	38	16.807	4.949	73	4.546	.000
	Control	37	12.066	4.022			

Inter-group t-test results of the post-test scores obtained from Academic Success Test and the other scales are presented in Table 5. For students' in the experimental group and the control group academic success post-test scores, there is a significant difference in favor of experimental group ($t_{(73)}$ =3.69: p<.05). When post-test scores has been obtained computer-assisted science education attitude scales were analyzed, it was seen the experimental group students' attitudes are more positive than students in the control group. In addition, it was said that there were significant differences between the two groups after the application ($t_{(73)}$ =8.01: p<.05). According to the last test; while experimental group students' mean score related scientific process skills was calculated as 16.80, control group students' mean score was calculated as 12.06. Accordingly, it was formed a significant difference science process skills points of students in favor of the experimental group after the application.

Table 6.
The Relationship between CASEAS and AST Scores of Experimental Group

		Success Test Score	Attitude Score
Success Test Score	**r**	1	.210
	p		.206
	N	38	38
Attitude Score	**r**	.210	

		Success Test Score	Attitude Score
	p	.206	
	N	38	38

In order to determine relationship between *CASEAS and AST Scores of* experimental group students, correlation was calculated between achievement scores -attitude scores. Between achievement and attitude scores of students', a significant correlation wasn't found (r=.210: p<.05).

Table 7.

The Relationship between SPST and AST Scores of Experimental Group

		Success Test Score	Science Process Skills Score
Success Test Score	**r**	1	.219
	p		.186
	N	38	38
Science Process Skills Score	**r**	.219	
	p	.186	
	N	38	38

When the correlation between experimental group students' achievement and science process skills scores calculated, it wasn't found a significant correlation between Scientific Process Skills scores and Achievement scores, too (r=.219: p<.05).

Conclusion and Discussion

In the research, in order to determine influence of Innovative Technologies for Engaging Classrooms (ITEC) applications on academic achievement; Academic Success Test were applied to experimental and control group students both a pre-test and post-test. When data of Academic Success Test administered to groups before application was examined, groups' levels were found to be close to each other (Table 2). The analysis of the experimental group pretest-posttest was accepted as p <.05 and it was observed the applications are increasing students' academic success. Post-test scores of the students in the control group shows that an increase in students' academic success ($t_{(73)}$ =3.69: p<.05). Accordingly, the impact on the academic achievement of ITEC application is more than traditional teaching method. Because ITEC application is a computer-assisted project-based teaching methods; this result supports the finding that improves academic achievement of computer assisted applications (Güven and Sülün, 2012; Taş, Çetinkaya, Karakaya and Apaydın, 2013).

In the pre-test conducted to determine their attitudes towards to computer assisted science education, it was observed that both experiment and control group students' attitudes were positive and attitudes points between groups did not differ significantly (t (73) = .090: p> .05) (table 2). After completion of educational activities, the decrease of control group students' post-test attitude scores is remarkable. During the application process, the control group students have not been with computer

assisted education. So, the reason for the decrease in attitude scores can be explained that students answer for items carelessly. New research will be carried out can questionable reasons of this case. But, the result is different for experimental group students. It is seen there is a significant difference between pre-test and post-test scores of experimental group students ($t_{(37)}$ =-5.922: p<. 05). Computer assisted applications has provided to positive change attitudes towards computer-assisted science education. Yenice (2003) has conducted a study to examine 8th grade students' attitudes towards computer and science. Genetic unit is processed with computer-assisted teaching methods in this study. Researcher has determined that computer based teaching resulted in a positive change on students' attitudes towards computer and science. Aydın (2011) have examined the attitudes towards computers of students with computer based teaching in the thesis. And he stated that the positive attitudes towards computers affect the success of the course.

In this study, changes in students' science process skills were also examined. Before the implementation, there was not any significant difference between groups ($t_{(73)}$ =.946: p>.05). It was determined that after application, post-test scores of all the groups have been an increase. However, it was seen that science process skills points of students occurred significant difference in favor of the experimental group after the application (t (73)= 4.546: p <.05). Based on these results; ITEC applications which are computer assisted and project based is more effective than traditional teaching methods for the development of students' scientific process skills. Tavukçu (2008) has examined the effects of computer based learning environment in science education for the 6th grade students' academic achievement, science process skills and attitudes toward computer used in her study. As a result of the analysis, she has stated that computer based teaching developed the scientific process skills. Karademir (2009) has stated that computer-assisted instruction impairs the ability of the scientific process in the work carried out by students in 7th grade. The results obtained in our study are similar literature studies use of computer assisted method with the impact on the scientific process.

Correlation analysis was performed to measure the effect of increasing their success on scientific process skills and attitudes of the students in the experimental group. As a result both analyze academic success- attitudes and academic success and science process skills (p> .05) were observed with is a significant relationship between.

Of the students in the classroom of the 21st century, using technology effectively, efficiently functioning in the course, academic achievement and scientific process skills to develop in a positive direction; ITEC project learning by teachers teaching plans can be made according to the stories and activities.

In our country, the ITEC project was piloted in various schools of the different observing their effects on learning products, can provide suggestions for future classes. Therefore, students can learn easily issues related to science education using technological tools.

In order to help students more quickly and easily, teachers who will be ITEC application He should have more information. Technology tools for in a better level than students. IT teachers can help; ITEC was carried out in the process of application. ITEC applications is the project based, so the application period should be at least 2 (two) weeks.

Students must be willing to use a computer and project preparation in ITEC project implementation process. When researcher and teacher have the knowledge is about students' attitudes towards the use of computers; they can plan ITEC application process easier and can be correctly configured. Also, it will be used attitude scale, would also be useful for the study of computer-based instruction.

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THE EFFECT OF SELF-PACED READING ACTIVITY ON MARINE ENGINEERING STUDENTS' READING ACHIEVEMENT

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This descriptive-correlational-quasi-experimental study aimed at looking into the effectiveness of self-paced reading activity on reading achievement among first year B.S. Marine Engineering students of the JBLFMU-Molo. It also attempted to determine the students' attitude towards learning and their perception of classroom life. The significance of the correlations among the respondents' reading achievement, attitude towards learning and perception of classroom life was also ascertained. Data were gathered through the use of questionnaires on classroom life and learning attitude. A reading achievement test was also used. Statistics employed were means, standard deviations, t-test for Independent Samples, Pearson's r, and Effect Size. Alpha level was set at .05. Statistics were computer-processed through the SPSS software. Findings showed that both the experimental and control groups had high reading achievement and positive learning attitude and perceived classroom life to be moderately supportive before the experiment. After the experiment, however, the experimental group reflected a significantly higher reading achievement than the control group. No significant correlations existed among reading achievement, learning attitude and perception of classroom life.

THE PERSONALITY TRAITS
OF PARENTS AND GENDER IDENTITY FORMATION
OF ADOLESCENTS

An Undergraduate Thesis Presented to
The Faculty of Behavioral Sciences
College of Arts and Sciences
University of the East- Manila

In Partial Fulfillment of the Requirements

For the Degree Bachelor of Science

Major in Psychology

By:

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ABSTRACT

This descriptive correlational research aims to find out the significant relationship of the personality traits of the parents in the gender identity formation of the adolescents. It was during the adolescence period wherein individuals began to have a sense of identity and became more aware of their sexuality, as well as changes in their physical, emotional and cognitive well-being. However, in all of these changes happening during adolescence period, family plays a very significant role. The parents were the ones who play a special role in the gender identity formation of an adolescent. The immediate influence of the parent, since they were the ones who have been overly attached to the adolescent, was of great effect. The parents' view of themselves comes from the contemplation of personal qualities and impressions of how others perceive them. In actuality, how people see themselves is based on how they believe others see them. The researchers have conducted the study on Barangay Nangka, Marikina City. The sample was comprised of 105 parents and 105 adolescents who are their children. The researchers only focused on these parents who have children ages 12-18 years old. And as the result of this research, it was found out that the self-concept of the parents was significantly related to the gender identity formation of the adolescents.

Keyword: Personality Traits, Gender Identity Formation

CHAPTER I

THE PROBLEM AND ITS BACKGROUND

Introduction

The family is the basic unit of society. It is the smallest institution that immediately affects the life of every individual. It serves as the "molding-hands" of every child's personality which generates a great impact inhis/her life. Its members are intensely connected emotionally that profoundly affects each other's thoughts, feelings, and actions as if people are living under the same "emotional skin." There is the tendency for each to ask for attention, approval, and support and react to each other's needs, expectations, and distress. Lack of these variables could be a source of a problem when they reach adolescence.

The stage of adolescence was called and labeled as *Sturm und Drang* or *storm and stress*. As explainedby Burt and Novick (2008), most children undergo this developmental period without undue stress, although many do experience difficulty. An adolescent is the "new-individual" who wanders in the new environment that he needs to go through as part of his growth as an individual. Part of his growth is learning to adapt and fit the new environment. Children need guidance and affection from their parents from birth to adulthood. These stages require them to acquire skills in learning and trusting which leads to the application of these learning in order to adapt to the new environment.

Parents play a significant role in the lives of their children. Parents are considered as significant peoplewho are within the immediate environment of a child. They have a direct influence in the totality or wholeness of their children because they serve as the models of behavior and personality. Cooley´s Looking Glass Self states that a person's self grows out of a person´s social interactions with others. How the person sees himself or herself stems from the contemplation of personal qualities and impressions of how others perceive him/her. In actuality, how people see themselves is based on how they believe others see them. With that, the three personality traits: self-esteem, self-image and self-concept of the parents were studied.Furthermore, the family, particularly the parents is the shaping or a training ground to their child's behavior, attitude and identity.

According to Saewyc & Pettingell (2012), gender identity formation is a developmental task of adolescence wherein people start to make a sense of identity and embrace their sexuality, along with other significant physical, emotional, and cognitive changes. It is believed that adolescence is a time when identity issues and concerns over heterosexual relationships are prominent and it is also a period when they adapt to these internal changes, adolescents need an environment that is both reasonably safe and intellectually challenging—one that provides a "zone of comfort" as well as challenging new opportunities for growth (Petersen, 2012).

However, nowadays family seems to be broken" or "separated." The consistent findings show that emotional distance and conflict are highest during peak pubertal growth (Hill etal., 1985). The adolescent who is still on his way to developing his identity and personality may have difficulty in relating himself to the outside world because the attention of the parents seems to be divided. The attention and relationship between parent-child relationships is then considered one-sided.

Statement of the Problem

This study aims to determine the relationship of the personality traits of the parents in the gender identity formation of an adolescent as a basis of strengthening the parental involvement for an effective developmental approach in the life development of the adolescents.

Specifically, it seeks to answer the following questions:

1. What is the demographic profile of the parents when grouped according to:

    1.1 Age;

    1.2 Sex;

    1.3 Socioeconomic Status; and

    1.4 Educational Attainment?

2. What is the demographic profile of the adolescents when grouped according to:

    2.1 Age; and

    2.2 Sex?

3. What is the general level of personality traits of the parents?
4. What is the general level of gender identity of the adolescents?
5. Is there a significant difference between the personality traits of parents in their demographic profile?
6. Is there a significant relationship between the personality traits of the parents and the gender identity formation of the adolescents?

Hypotheses of the Study

In line with the specified questions of the research, the researchers formulated the following hypotheses:

1. There is no significant relationship between the personality traits of the parents in theirdemographic profile.
2. There is no significant relationship between the personality traits of the parents and the gender identity formation of the adolescents.

Scope and Limitation

The population of the study consists of 105 parents and 105 children ages 12 to 18 years old from Barangay Nangka, Marikina City, Philippines. The said sample comprised enough number of respondents to conduct the study but still limited in terms of location because it was within the areas of subdivisions and villages.A researcher-made questionnaire was given to the parent-respondents to find out the significant role played by the personality traits of parents and a standardized questionnaire was given to determine the level of gender identity formation of the adolescents.

Significance of the Study

This study is beneficial to the following people:

The Parents. This study will help them envision connectedness and develop closer relationships among the family and become aware of their significant personality traits as it influences the gender identity formation of the adolescents.

The Related Government Agencies. This study will enable them to formulate and design a program that could facilitate the personality development and gender awareness of the adolescents and a program that could educate and instill awareness to the parents about their parental involvement in the development of their children.

The Field of Psychology. This study will help understand in an in-depth manner on how the personality traits of the parents influence the gender formation of the adolescents. Also, this study will provide an opportunity to observe the interactions between the parents and the adolescents and how are they significantly related to one another.

To The Future Researchers. This study will serve as a basis and reference for them who wish to conduct a related research. It will inspire them to understand social interaction and relationships among families, particularly between the parents and their children.

Theoretical Framework

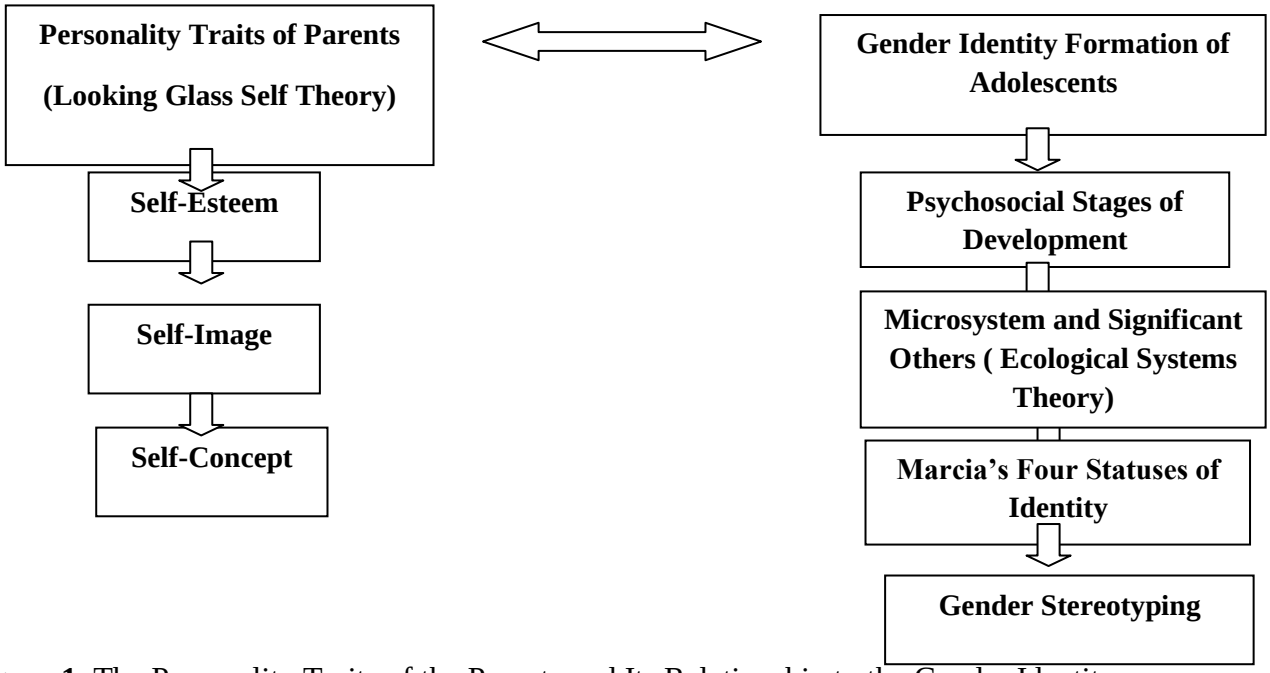

Figure 1. The Personality Traits of the Parents and Its Relationship to the Gender Identity Formation of the Adolescents

The first variable considered in this study is the *Personality traits of the parents.* It is mainly anchored on the theory of **Charles Cooley's Theory of Looking Glass Self**. This variable has three sub variables such as: Self-esteem, self-image and self-concept.

Cooley´s concept of the looking glass self states that a person's self grows out of a person´s social interactions with others. The person's view of himself/herself comes from the contemplation of personal qualities and impressions of how others perceive him/her. In actuality, how people see themselves is based on how they believe others see them.

The three main components of the looking-glass self (Yeung, 2003): a.) to imagine how an individual must appear to others. (Self-Image); b.) to imagine and react to what the individual feel to their judgment of that appearance must be (Self-Concept); and c.) how the individual develop one self through the judgments of others (Self-Esteem).

Bronfenbrenner's Ecological Systems Theory consists of five environmental systems that range from close interpersonal interactions to broad-based influences of culture. The five systems are: microsystem, mesosystem, exosystem, macrosystem and chronosystem (Bronfenbrenner & Morris, 1998, 2006):

With this ecological systems theory, the microsystem lies within. It is the direct explanation of the interaction of the parents towards their children. In this system, the relationships and interactions are actively and enthusiastically participated by the individual. With this system, the parents, peers and the close relatives are considered as the significant others. The concept of "significant others" means these are the people who played significantly in the lives of an individual. This comprises of the family, peers, immediate someone and closes relatives. Their motives, decisions and perceptions could affect and influence directly other's perspective. In this concept, it was hypothesized by the researchers that this concept of significant others has a great impact in which the family particularly the parents are the ones who are within the immediate surroundings of the life of an adolescent. Their interaction and relationship could affect each other's personality or perception.

Marcia James Marcia (1993) created a structured interview designed to classify adolescents into one of the four statuses of identity. The identity statuses are used to describe and pinpoint the progression of an adolescent's identity formation process. In James Marcia's theory, the operational definition of identity is whether an individual has explored various alternatives and made firm commitments to: an occupation, religion, sexual orientation and a set of political values. The four identity statuses in James Marcia's theory are:

Identity Diffusion (also known as Role Confusion): This is the opposite of identity achievement. The individual has not yet resolved their identity crisis, failing to commit to any goals or values and establish future life direction. In adolescents, this stage is characterized by disorganized thinking, procrastination, and avoidance of issues and action.

Identity Foreclosure: This occurs when teenagers accept traditional values and cultural norms, rather than determining their own values. In other words, the person conforms to an identity without exploration as to what really suits him or her best. For instance, teenagers might follow the values and roles of their parents or cultural norms. They might also foreclose on a negative identity, the direct opposite of their parent's values or cultural norms.

Identity Moratorium: This postpones identity achievement by providing temporary shelter. This status provides opportunities for exploration, either in breadth or in depth. Examples of moratoria common in American society include college or the military.

Identity Achievement: This status is attained when the person has solved the identity issues by making commitments to goals, beliefs and values after extensive exploration of different areas.

The identity statuses are used to describe and pinpoint the progression of an adolescent's identity formation process.

And the **gender stereotyping,** gender stereotypes are fixed ideas about men's and women's traits and capabilities and how people should behave, based on their gender. These are the expectations that an individual must perform and be observed in accordance with its given sex roles. For example, a men should be manifesting masculine traits and vice versa for the women.

Conceptual Framework

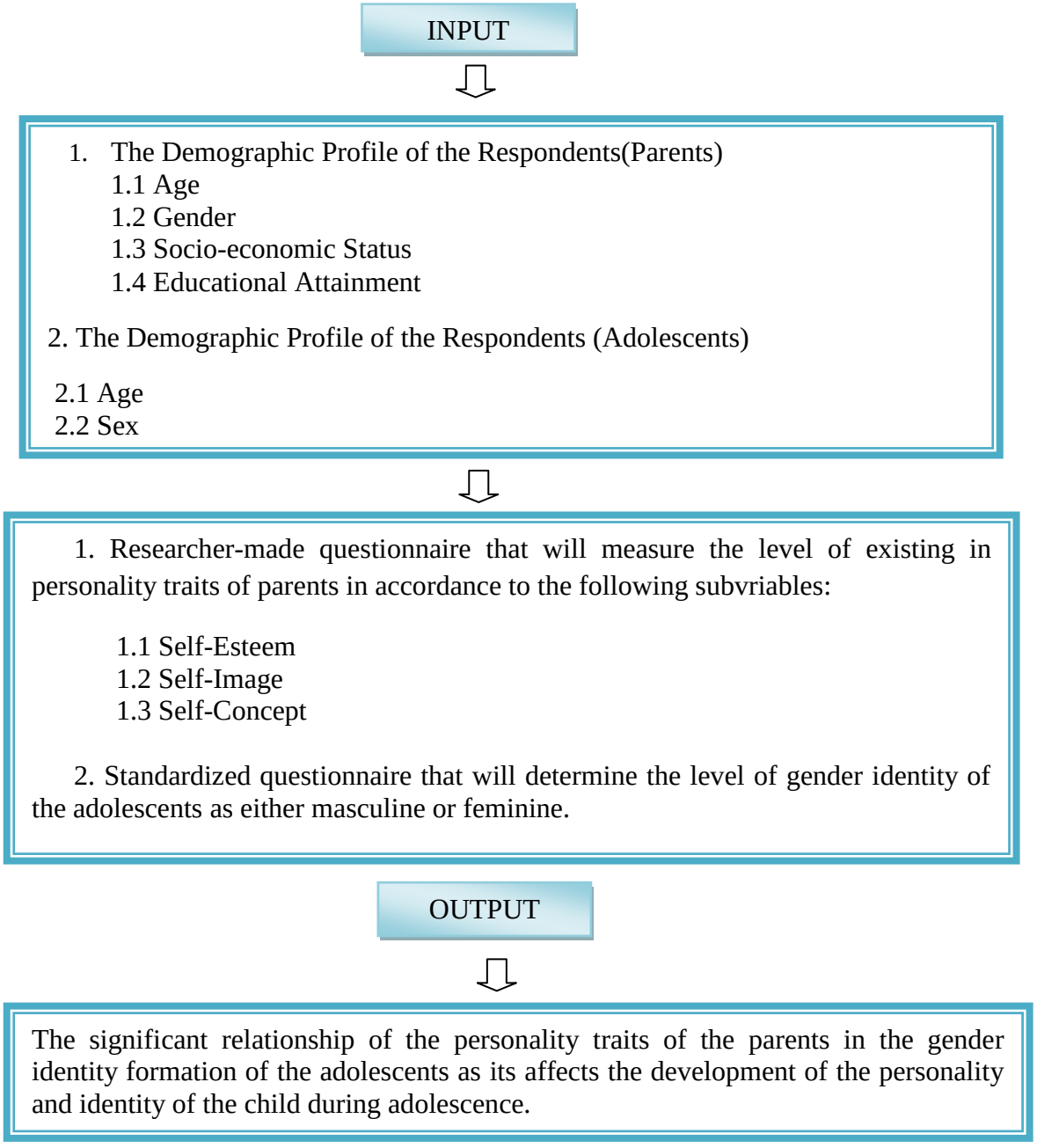

Figure 2. The Input-Process-Output process that the researchers have utilized upon doing the study

The main aim of this study is to determine the relationship of the personality traits of parents in the gender identity formation of an adolescent. The researchers gathered the demographic profile of the respondents through the questionnaire given. In this step, researchers have established rapport to the respondents and got the appropriate ones. Then the qualified respondents answered the researcher-made questionnaire that will lead to determining the relationship of the personality traits of parents in the gender identity formation of an adolescent.

The researcher-made questionnairediscovered the level and degree of personality traits of the parents. The test had its different sub-variables such as the self-esteem, self-image and self-concept. A standardized questionnaire was given to the adolescent respondents to determine their level of gender identity. Lastly, after the test administration, the researchers collected the questionnaires, and computed each respondent's mean score and interpreted the mean scores using the four Likert-scale, such as very high, high, low and very low level. Researchers have also used the different statistical treatment to determine the relationship of the personality traits of parents in the gender identity formation of the adolescents.

The obtained data have supported the main objective of the research study, which is to find out the relationship of the personality traits of the parents to the gender identity formation of the adolescent. For the end product of this study, researchers presumed that there will be awareness on the part of the parents as they played significantly in the gender identity formation of the adolescents.

Definition of Terms

The following terms are being used in the research which help the readers for better understanding of the study:

Adolescence. It is a transitional stage of physical and psychological human development that generally occurs during the period from puberty to legal adulthood (age of majority). The period of adolescence is most closely associated with the teenage years, though its physical, psychological and cultural expressions may begin earlier and end later.

Gender Formation. This is how a person's gender identity is formed based on their membership in various groups- familial, ethnic, occupational, etc. In this process young people explore their own values, ethics, spirituality, racial and ethnic identity, sexuality, and gender.

Gender Identity. It is a person's private sense, and subjective experience, of their own gender. This is generally described as one's private sense of being a man or a woman, consisting primarily of the acceptance of membership into a category of people: male or female.

Identity vs. Role Confusion. This is a major stage in development where the child has to learn the roles he will occupy as an adult. It is during this stage that the adolescent will re-examine his identity and try to find out exactly who he or she is. Erikson suggests that the two identities are involved: the sexual and the occupational.

Psychosocial Development. It is a psychoanalytic theory which identifies eight stages through which a healthily developing human should pass from infancy to late adulthood. In each stage, the person confronts, and hopefully masters, new challenges. Each

stage builds upon the successful completion of earlier stages. The challenges of stages not successfully completed may be expected to reappear as problems in the future.

Personality Traits. It is used to describe the influence of the social factors that could affect individuals' mental health and behavior.

Self-Concept. It refers to the individual's belief about himself or herself, including the person's attributes and who and what the self is

Self Esteem. It is the individual's overall evaluation of his/her worth. Also, it is the total judgment of oneself in terms of his personality, behavior and attitude.

Self-Image. It is the mental picture, generally of a kind that is quite resistant to change, that depicts not only details that are potentially available to objective investigation by others (height, weight, hair color, gender, I.Q. score, etc.), but also items that have been learned by that person about himself or herself, either from personal experiences or by internalizing the judgments of others.

CHAPTER II

REVIEW OF RELATED LITERATURES AND STUDIES

The succeeding content of this chapter includes different journals, articles and literatures that will support the study. It consists of foreign and local literatures, foreign and local studies and synthesis.

On Adolescence

According to Burt and Novick (2008), the stage of adolescence was called and labeled as *Sturm und Drang* or *storm and stress*. It is said and explained that most children undergo of this developmental period without undue stress, although many do experience difficulty.

Eccles, Midgley, et al. (2013) emphasized the accelerating effort by youths to control their own lives is accompanied by pressure on the family to renegotiate the power balance between parent and child. It is the fit between an early adolescent's family environment and his or her developmental needs that is critical to flourishing adaptation by both parents and early adolescents in this transitional period.

According to the study of Eccles, Lord and Buchanan (2010), they argued that attaining a good match requires that parents be able to adjust and cooperate to their early adolescent's changing needs with relatively little conflict. They showed that family environments offer opportunities for personal autonomy and encourage the early adolescent's role in family decision making are associated with positive outcomes, such as self-esteem, self-reliance, satisfaction with school and student-teacher relations, positive school adjustment, and advanced moral reasoning. Conversely, a parenting style that is coercive, authoritarian, and not attuned to the adolescent's need for autonomy and input is associated with self-consciousness and lowered self-esteem. As the preceding discussion explains, early-adolescent development is characterized by an increasing capacity for abstract thinking, desire for autonomy, orientation toward peers, and self-consciousness.

Steinberg (2010), parents and adolescents also have fewer interactions and do fewer things together outside the home than they made at an earlier period. This "distancing" in the relations between adolescents and parents may be a natural, evolutionary part of puberty. One can argue that distancing in parent-adolescent relations have a functional value for adolescents in that it fosters their independence, pushes them to try more things on their own, and develops their sense of efficacy.

In a study conducted by Lin YC (2014) states that it significantly associated with gender role identity (undifferentiated, feminine, masculine, and androgynous) of college students, specifically whether authoritative parenting styles associated with androgyny. There were significant differences in the parenting styles between the gender role groups. The maternal authoritativeness was correlated with the respondents' femininity while the paternal authoritativeness was correlated to androgyny.

OnPersonality Traits

In the study of Hashimoto et al. (2011), it was shown that adolescents positive image of parents reduced mental distress. Its impact on mental distress was insignificant. However, when adolescents' self-image was considered, mental distress was markedly reduced. Furthermore, though the direct association between parental image and mental health was lost, that between self-

image and mental health was not. The outcomes affirmed the importance of positive self-image for good mental health. Also, they found out that children reared in a positive, friendly parent– child social environment may hold positive images of their parents, which may result into sound adolescent's self-image.

On Gender Identity

According to the creation myths of the Philippines, the first man and the first woman emerged from a single bamboo reed – equal yet different, as the man was Malakas (strong) and the woman Maganda (beautiful) (Jimenez, 1983a, 1983b). In pre-colonial Philippines, women were equal to men, having the same rights (e.g., land ownership) and frailties (e.g., adultery) as men did (Garcia, 1998, 2000). Current Filipino society, however, hews more closely to Spanish culture, a result of more than 300 years of being a colony of Spain. One can trace back the values of machismo and feminismo to these colonial times.

On Family

At a very young age, children need more attention. According to Koo (2008) he has suggested during early childhood, family involvement means parent-child conversations, participation in child-centered activities, home school communication and reading to children. It will affect their literacy development, cognitive development and social competence in school. The emotional response is the key. Family involvement makes a difference. It predicts academic achievement and social development as children progress from kindergarten to high school, and college.

According to Santiago (2010), a typical Filipino couple starts to establish their own family during their early adulthood (starting from age 25), so their family (with children) will start/establish at the age range of 40 and above.

In a study conducted by Lin YC (2014) states that it significantly associated with gender role identity (undifferentiated, feminine, masculine, and androgynous) of college students, specifically whether authoritative parenting styles associated with androgyny. There were significant differences in the parenting styles between the gender role groups. The maternal authoritativeness was correlated with the respondents' femininity while the paternal authoritativeness was correlated to androgyny.

Synthesis

Then again, the personality traits of the parents have been believed by the researchers to have a relationship in the gender identity formation of an adolescent. When these literatures and studies were put together, the researchers found that the personality traits of the parents which are the self-esteem, self-image and self-concept have a valuable impact to the gender identity formation of an adolescent. It was during the adolescence period wherein individuals began to have a sense of identity and became more aware of their sexuality, as well as changes in their physical, emotional and cognitive well-being. Significant changes in adolescence were increasing, such as they were starting to see themselves on different angles and problems for them were becoming more concrete and established. However, in all of these changes happening during adolescence period, family plays a very significant role.

Family members so profoundly affect each other's thoughts, feelings, and actions that it often seems as if people are living under the same "emotional skin." It is during the adolescence adolescents embrace their identity and personality and accept of who they are. So with that, adolescents are vulnerable and susceptible to influences particularly of those immediate significant

others, and parents are one of those. It is believed that adolescence is a time when identity issues and concerns over heterosexual relationships are prominent. The research studies reviewed here suggest that family, school, and other organized environments that are responsive and developmentally sensitive to the changes in young adolescents' needs and desires can facilitate positive development during the early-adolescent years.

The parents were the ones who play a special role in the gender identity formation of an adolescent. The immediate influence of the parent, since they were the ones who have been overly attached to the adolescent, was of great effect. The significance of the parents in the gender identity formation of adolescence had been proven and examined.

CHAPTER III

METHODS AND PROCEDURE

This chapter presents the methods and procedures in the study. It includes the research method used and the instruments that were used in the data gathering procedures, it also provides the description of the subjects, sampling used, procedures in data gathering and the statistical procedure in the treatment of data.

Research Design

To be able to come up with this study, the researchers have used a descriptive correlational research design which is concerned with the establishment of instrument to gather data and using a quantitative approach wherein numerical data will be collected and to correlate two variables (Slavin, 2007). This design will use a sample representative of a larger population to collect data in an attempt to generalize findings to a population (Lodico, 2006). The purpose of this method is to find out the significant relationship of the personality traits of parents in the gender identity formation of adolescents.

Data Collection

The researchers have used Elton B. Stephens Co research database (EBSCO) and other educational sites as a source of secondary resources such as articles and journals. The researchers have also used books and research by students from the University of the East as guidelines and the basis for the entire framework of the research study. Also, the researchers looked for different related researches and works in various libraries in a number of different universities within Metro Manila.

Sampling Design and Technique

In selecting the respondents, the researchers utilized the purposive sampling technique which means the researcher will choose the sample based on who they think would be appropriate for the study (Kaplan &Saccuzzo, 2011).The researchers used this technique in gathering the respondents in which they set qualifiers in order to get the desired respondents for the study. Two hundred ten (210) respondents from Barangay Nangka, Marikina City was considered as the total sample of the study.

Research Instruments

In this study, it has two variables to be measured and observed: The independent variable which is the personality traits of the parents and the dependent variable which is the gender identity formation of the adolescent. The independent variable has 3 sub-variables such as: self-esteem, self-image and self-concept.Researcher-madewas used in order to get the level of personality traits of the parents and a standardized questionnaire for the level of gender identity of the adolescents. The parents' name, age, gender and level of socioeconomic status and educational attainment were included in the survey. Specifically the researcher-made inventories.

The inventory is indicated below:

The test was entitled as the "Personality Traits of Parents." The test was comprised of fifty (50) items consisting of the three (3) sub variables: Self-esteem, self-image and self-concept which questions were randomly put in the test. Also, the questions will be made in relationship to the gender formation of the adolescents. The test has 4-Likert scale, namely (1)-strongly agree, (2)-agree, (3)-disagree, (4)-strongly disagree.

While the BEM Sex Role Inventory, a standardized questionnaire, was adopted as it was found significantly related as an instrument of measuring the level of gender identity traits of the adolescents. The test has three dimensions namely: masculinity, feminist and androgyny in which the adolescent was asked to rate himself as based on the written traits provided in the test. However,

the main focus of the study was only about femininity and masculinity of the adolescents and not on the androgyny dimension.

Scoring and Interpretation

This description of the "Personality Traits of Parents", a 4-point Likert Scale was used by the researchers in evaluating the answers of the parent-adolescents in the researcher-made questionnaire. This was validated and approved by statisticians.

Description of the 4-point Likert scale and Corresponding Numerical Rating

Numerical Rating	**Scale**	**Interpretation**
3.25 – 4	4	Very High
2.50 – 3.24	3	High
1.75 – 2.45	2	Low
1 – 1.74	1	Very Low

Data Gathering Procedure

Prior to the administration of the researcher-madequestionnaires, the researchers created a letter addressed to the Barangay Captain of Barangay Nangka, Marikina City. The letter signifies a request for the approval of the research, in order for the test to be conducted to the selected parents and adolescents of Barangay Nangka, Marikina City as part of data gathering. An informed consent letter was given to the respondents. The informed consent letter ascertains the respondents regarding the main objective of the research. After the approval of the Barangay Captain, the researchers administered the questionnaires to selected parents and adolescents. Each respondent was given ample amount of time to read, understand and answer the test. The directions were given thoroughly by the researchers, as well as the objective of the test. Following the administration of the test was the collection of the answered surveys specifically the researcher-madequestionnaires. Next, was the tabulation, tallying and then the interpretation was done after the questionnaires had been collected.

Statistical Procedures and Treatment

The researchers have used statistical tools such as Percentage Distribution, Weighted Mean formula, Pearson Correlation, and One Way Analysis of Variance under the supervision of professional statisticians.

1. The **Percentage Distribution**was used to determine the distribution of the participants according to their profile variables such as gender, age and socioeconomic status, and educational background. This will answer the statement of the problem numbers 1 and 2 (Witte & Witte, 2014).
2. To get the **Weighted Mean** of the indicated level of personality traits of the parents, the formula below will be utilized. This will answer the statement of the problem numbers 3 and 4(Witte & Witte, 2014).
3. To get the significant difference between the personality traits of parents and their demographic profile (involving more than 3 variables), the **Analysis of Variance** was used. It was used to analyze the differences among group means and their associated procedures (such as "variation" among and between groups); the observed variance in a

particular variable is partitioned into components attributable to different sources of variation. This answers the statement of the problem number 5(Witte & Witte, 2014).

4. To get the significant difference between the personality traits of parents and their demographic profile (involving 2 variables), the **t-test** was used. This answers the statement of the problem particularly the difference between the personality traits of parents and their sexes. It can be used to determine if two sets of data are significantly different from each other, and is most commonly applied when the test statistic would follow a normal distribution if the value of a scaling term in the test statistic were known(Witte & Witte, 2014).
5. And to get the significant relationship of the personality traits of parents and the gender identity formation of the adolescents, the **Chi-Square test** was used. It is a statistical hypothesis test in which the sampling distribution of the test statistic is a chi-square distribution when the null hypothesis is true. Chi-squared tests are often constructed from a sum of squared errors, or through the sample variance. This answers the statement of the problem number 6(Witte & Witte, 2014).

CHAPTER IV

PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

This chapter presents and discusses the analysis and interpretation of the categorized data and information gathered by the researchers. All the data gathered in this research study was accomplished through completing tables. These tables will show the results and will serve as a tool for clearer understanding on what the researches want to present.

1. Demographic Profile of the Parent-Respondents when grouped according to:

Table 1
Distribution of Parent-Respondents according to their Age

Age	**Frequency**	**Percentage**
30-39	36	34.29%
40-49	53	50.48%
50-59	16	15.24%
TOTAL	**105**	**100%**

Table 1 shows that out of 105 parent-respondents, majority were from the 40-49 age group having a frequency of 53 or 50.48% of the total population; followed by 30-39 age group having a frequency of 36 or 34.29%, and lastly by the 50-59 age group having a frequency of 16 or 15.24% of the total population.

This shows that the 40-49 year old age group having a frequency of 53 or 50.48% of the total population has the most number of respondents. This poses to the idea that a typical Filipino couple starts to establish their own family during their early adulthood (starting from age 25), so majority of the respondents are coming from the 40-44 year-old age group (Santiago, 2010).

Table 2
Distribution of Parent-Respondents according to their Sex

Sex	**Frequency**	**Percentage**
Male	23	21.90%
Female	82	78.09%
TOTAL	**105**	**100%**

Table 2 shows that out of 105 parent-respondents, the male respondents have the frequency of 23 at 21.90% while the female respondents have the frequency of 82 at 78.09%, a total of 100 percent. It is shown in the table that there are more female respondents than male.

The lack of balance between the number of male and female respondents is due to the fact that the male respondents were at work during the time of test administration. Also, a typical family denotes the idea that females are often staying in their homes busy doing different household chores while the males are at work in order to provide for the needs of the family. Lastly, it is based from the data provided by the Philippine Statistics Authority that there were more females than males in age groups 0 to 54 years in 2010 accounting to 51.0 percent of the population

Table 3
Distribution of Parent-Respondents according to their Socio Economic Status

Socioeconomic Status	**Frequency**	**Percentage**
High Income	6	5.71%
Average Income	71	67.62%
Low Income	28	26.67%
TOTAL	**105**	**100%**

Table 3 shows that out of 105 parent-respondents, the respondents who have high income have the frequency of 6 at 5.71% followed by the average income respondents having the frequency of 71 at 67.62%, and the respondents who have low income have the frequency of 28 at 25.67%.

It is shown in the table that average income respondents have the most number. This can be attributed to the fact that the location used in this study is composed of different villages and subdivisions, and it was assumed and expected by the researchers that majority of the respondents will be coming from the average income group

Table 4
Distribution of Parent-Respondents according to their Educational Attainment

Educational Attainment	**Frequency**	**Percentage**
College level	60	57.14%
High School Level	36	34.29%
Elementary Level	9	8.57%

TOTAL	**105**	**100%**

Table 4 shows that out of 105 respondents (parents), the respondents who reached college level have the frequency of 60 at 57.14%, the respondents who reached high school level have the frequency of 36 at 34.29% and the respondents who reached elementary level have the frequency of 9 at 8.57%. It is shown in the table that respondents who reached college level have the most number.

It implies that majority of the parents reached college level because the locations used in the study is composed of average income individuals living in subdivisions and villages so it was assumed that they have the capacity to study in college.

2. Demographic Profile of Adolescent-Respondents when grouped according to:

Table 5
Distribution of Adolescent-Respondents according to their Age

Age Range	**Frequency**	**Percentage**
12-14	28	26.67%
15-17	58	55.24%
18-20	19	18.10%
TOTAL	**105**	**100%**

Table 5 shows that out of 105 respondents (adolescents), the 15-17 year old respondents have the frequency of 58 at 55.24% which accounts for the highest frequency followed by the 12-14 year old age group having the frequency of 28 at 26.67, and lastly the 18-20 year old respondents have the frequency of 19 at 18.10 %.

It implies that majority of the parent-respondents were coming from the 40-44 age group as it is poses to the idea that a typical Filipino couple starts to establish their own family during their early adulthood (starting from age 25). Majority of the adolescent-respondents are coming from the 15-17 age (late adolescence) groups in relation to their parent's age when they established their own families (Santiago, 2010).

Table 6
Distribution of Adolescent-Respondents according to their Sex

Sex	**Frequency**	**Percentage**
Male	41	39.05%
Female	64	60.95%

TOTAL	**105**	**100%**

Table 6 shows that out of 105 respondents (adolescents), the male respondents have the frequency of 41 at 39.05% while the female respondents have the frequency of 62 at 60.95%, a total of 100 percent. It is shown in the table that there are more female respondents than male. It is based from the data provided by the Philippine Statistics Authority;there were more females than males in age groups 0 to 54 years in 2010 accounting to 51.0 percent of the population.

3. The General Level of Personality Traits of Parents

Table 7
Level of Self-Esteem

Table 7 shows the general level of self-esteem having a level 3.72 which means very high

Personality Trait	**Weighted Mean**	**Interpretation**
Self –Esteem	3.72	Very High

according to the 4-point Likert scale and its corresponding numerical rating. It is shown that that the parents scored averagely at a very high level.

It implies that the parents are having very high self-esteem which can be attributed from the assumption that majority of the parent-respondents reached college level and were in the average income group resulting to their very high evaluation of their worth including the total judgment of themselves in terms of their personality, behavior and attitude.

Table 8

Level of Self-Image

Personality Trait	**Weighted Mean**	**Interpretation**
Self –Image	3.60	Very High

Table 8 shows the general level of self-image having a level 3.60 which means very high according to the 4-point Likert scale and its corresponding numerical rating. It is shown that that the parents scored averagely at a very high level.

It implies that the parents are having very high self-image which can be attributed from the assumption that majority of the parent-respondents reached college level and were in the average income group which can be interpreted that their idea of how appear to others is very high.

Table 9

Level of Self-Concept

Personality Trait	Weighted Mean	Interpretation
Self –Concept	3.70	Very High

Table 9 shows the general level of self-concept having a level 3.70 which means very high according to the 4-point Likert scale and its corresponding numerical rating. It is shown that that the parents scored averagely at a very high level.

It implies that the parents have a very high self-concept which can be attributed from the assumption that majority of the parent-respondents reached college level and were in the average income group resulting in their over-all belief about themselves including their personal attributes and who and what their self is.

4. The General Level of Gender Identity Level of Adolescents

Table 10
General Level of Gender Identity Level of Adolescents
(Males)

	Frequency	Percentage
Number of males having masculine traits	13	31.71%
Number of males having feminine traits	28	68.29%
TOTAL	41	100%

Table 10 shows the general level of gender identity of adolescents (male) wherein the number of males having feminine traits have a higher frequency of 28 or 68.29% of the total male population than males having masculine traits having the frequency of 13 or 31.71 % of total male population.

It is based on the fact that majority of the adolescents are more involved with their mothers who are also the majority parent-respondents. The adolescents see their mothers as good parents who can provide attention and give guidance as they establish their identity during their course of development during adolescence.

Table 11
General Level of Gender Identity Level of Adolescents
(Females)

	Frequency	**Percentage**
Number of females having masculine traits	14	21.88%
Number of females having feminine traits	50	78.13%
TOTAL	64	100%

Table 11 shows the general level of gender identity of adolescents (female) wherein the number of females having feminine traits have a higher frequency of 64 or 78.13% of the total female population than females having masculine traits with a frequency of 14 or 21.88 % of total female population.

It is based on the fact that majority of the adolescents are more involved with their mothers who are also the majority parent-respondents. The adolescents see their mothers as good parents who can provide attention and give guidance as they establish their identity during their course of development during adolescence. It is supported by the study conducted by Lin YC, (2014) where it states that the maternal authoritativeness was correlated with the respondents' femininity. Given from the fact that majority of parent-respondents were mothers, it was expected that mothers were the ones who were more involved with their children.

5. The Difference Between the Personality Traits of Parents and their Demographic Profile

Table 12
The Difference Between the Self-Esteem of Parents and their Demographic Profile

	df	**Obtained Value**	**Critical Value**	**Decision**
Age	104	0.193291	3.085465	**Accept Ho**
Sex	104	-1.04834	2.048407	**Accept Ho**
Socioeconomic Status	104	0.016969	3.085465	**Accept Ho**
Educational Attainment	104	0.000932	3.085465	**Accept Ho**

Table 12 shows the significant difference between the mean scores of the level of self-esteem of the parent-respondents when they are grouped according to their demographic profile. The difference was designed to find out if the different demographic profile used by the researchers has significant differences with their level of self-esteem.

The difference in the level of self-esteem of the parents when they are grouped according to their age shows no significant difference. It has an obtained value of 0.193291 which is less than the critical value of 3.085 which means of no significant difference. It implies that the level of self-esteem of the parents does not have any differences with other age groups. Age does not give differences to the level of self-esteem of the parents. The level of self-esteem of parent regardless of their age group is relevant and related to one another and not different from one another. This can be attributed in the notion that age is not an equal and a definite measure of the degree of experience of an individual. It does not measure the maturity which is subjective to the individual himself and not related into any numerical data. The level of experience of an individual and development of self is not dependent on how old he is (Johnson, 2009).

In terms of the difference of the level of self-esteem according to sex, was found of no significance. It has an obtained value of -1.048 which is less than the critical value of 2.048407 which means of no significant difference. There are no findings that the level of self-esteem of males is different from females. It means that regardless of the sex of the parents, their level of self-esteem is still defined and intact. Their perceived worth and purpose of themselves with the judgment of others are not related into their sex.

This is supported by the study of Porshafei (1991) where it states that there is no significant difference between the self-esteem of male and female students. It means that self-esteem or their perceived worth of themselves with the judgment of others is not defined by their sex. It shows that it does not necessarily mean if the person is male, he has higher self-esteem than female. This claim gives an equal opportunity for females to develop their self-esteem as they accumulate different experiences in life relative to their development.

In terms of the socio-economic status, also it was found insignificant to the level of self-esteem of the parents. The result obtained 0.016969 that is less than the critical value of 3.085 which means there was no significant difference.

This implies that the parent not considering their socio-economic status has a similar level of self-esteem. The level of self-esteem of the high income parents is not significantly different to those average and low income parents. It does not mean that high income parents are higher and the low income parents were not. It gave an unbiased chance of developing one's own self-esteem regardless of the socio-economic status in life. The level of self-esteem is not determined by a factor of material possession. One's own perceived worth with the judgment of others is not measured by the goods and things that we do possess rather it are the accumulating body of experience that is resistant to change (McKinley, et al. 2010).

And lastly, in terms of the educational attainment and its difference to the level of self-esteem, it was also found insignificant. It has an obtained value of 0.000932 that is less than the critical value of 3.085 which means having no significant differences. This means, that regardless of the reached educational level, the level of self-esteem is still related and relevant. It also implies that the self-esteem of parents who reached college level is not different from those of high school and elementary level attained parents. Again, it provides an equal and unbiased position in developing one's self-esteem.

This claim opposes the claim of Porshafei (1991) where according to him; there is a significant correlation between self-esteem and educational progress which means that individuals with high self-esteem will have more academic achievement than others. This concept is not applicable to the selected parent-respondents of Barangay Nangka because of the difference in context of location of the study. This claim cannot be generalized because of the differences in the nature of personality of people and individual differences.

Generally speaking, this could be supported by the study of Caspi, Avshalom, Moffitt, Terrie (1993) wherein the personality traits of an individual is consistent, firm and resistant to change. It is said that the personality traits of an individual are innately intact to the individual himself. The opposite of change in personality would be consistent. There are several things that influence whether or not an individual's personality changes such as time. Time is a contributing factor in personality change. There is an increase in consistency of a trait as the age increases. However, personality traits do not still stop changing.

Table 13
The Difference Between the Self-Image of Parents and their Demographic Profile

	df	**Obtained Value**	**Critical Value**	**Decision**
Age	104	0.413961	3.085465	**Accept Ho**
Sex	104	-1.06237	2.034515	**Accept Ho**
Socioeconomic Status	104	0.086294	3.085465	**Accept Ho**
Educational Attainment	104	0.530917	3.085465	**Accept Ho**

Table 13 shows the significant difference between the mean scores of the level of self-image of the parent-respondents when they are grouped according to their demographic profile. The difference was determined to know if the different demographic profile used by the researchers has significant differences with their level of self-image.

The difference in the level of self-image of the parents when they are grouped according to their age has no significant difference. It has an obtained value of 0.413961 which is less than the critical value of 3.085465 which means no significant difference. It means that the level of self-image of the parents does not have any differences with other age groups.

In terms of the difference of the level of self-image of according to sex, it was found of no significance. It has an obtained value of -1.06237 which is less than the critical value of 2.034515 which means of no significant difference. It means that regardless of the sex of the parents, their self-image is still high. The way they think about themselves regarding their physical appearance such as height, weight, etc is not related into their sex. A positive image of parents enhanced adolescents' personality and facilitated psychological wellbeing in children, irrespective of their sex (Hashimoto, Onuoha, Isaka& Higuchi, 2011).

In terms of the socio-economic status, also it was found insignificant to the level of self-image of the parents. The study generated 0.086294 that is less than the critical value of 3.085465 which means of no significant difference. This implies that the parents do not consider their socio-

economic status which is similar to the level of self-image. Parents who are having high income, average income and low income acquire the same level of self-image despite the differences of income.

Lastly, in terms of the educational attainment and its difference to the level of self-image, was also found insignificant. It has an obtained value of 0.530917 that is less than the critical value of 3.085465 which means of having no significant differences. Regardless of the educational level attained, the level of self-image is still related. It also signifies that the self-image of parents who reached college level is not different from those of parents who reached high school and elementary level. Thus, developing one's self-image is not solely based upon the kind of education an individual had.

Table 14
The Difference Between the Self-Concept of Parents and their Demographic Profile

	df	**Obtained Value**	**Critical Value**	**Decision**
Age	104	0.412277	3.085465	**Accept Ho**
Sex	104	-1.86469	2.036933	**Accept Ho**
Socioeconomic Status	104	0.086294	3.085465	**Accept Ho**
Educational Attainment	104	0.086294	3.085465	**Accept Ho**

Table 14 shows the significant difference between the mean scores of the level of self-concept of the parents when they are grouped according to their demographic profile. The difference was determined to find out if the different demographic profile used by the researchers has significant differences with their level of self-concept.

The difference in the level of self-concept of the parents when they are grouped according to their age shows no significant difference. It has an obtained value of 0.412277 less than the critical value of 3.085465 which means no significant difference. It entails that the level of self-concept of the parents does not have any differences with age. Age does not give differences to the level of self-concept of the parents. The level of self-concept of parent regardless of their age group belong is relevant and related to one another and not different from one another. This can be attributed in the notion that age is not an equal and a definite measure of the degree of experience of an individual. It does not measure the maturity which is subjective to the individual himself and not related into any numerical data. The level of experience of an individual and development of self is not dependent on his age (Johnson, 2009). Maturity is developed from experiences of the person and not by what their age are.

In terms of the difference of the level of self-concept according to sex, it was found that there is no significant relationship. It has an obtained value of -1.86469 less than the critical value of2.036933 which means of no significant difference. There are no findings that the level of self-concept of males is different from females. It means that regardless of the sex of the parents, their self-concept still built in and is constant. Their beliefs among themselves do not refer to whether they are male or female.

Sanchez (1998) defined that self-concept were often global with one overall score derived. The more the researchers' measure the specific aspects self-concept, the more it is probably reliable. This support the detail that this study showed that there is no significant relationship. The parent-respondents' sex could not have any relation to their self-concept but it is possible for other respondents from other places or culture.

In terms of the socio-economic status, it was found no significance relationship in the level of self-concept of the parents. It has an obtained value of 0.086294 less than the critical value of 3.085 which means of having no significant differences. This entails that not considering the parents' socioeconomic status; they could utilize their self-concept independently. The level of self-concept does not rely on whether the parent has high income, average income or low income. One's own perceived worth with the judgment of others is not measured by the goods and a thing that we do possess rather it is the accumulating body of experience that is resistant to change (McKinley, et al. 2010).

Lastly, in terms of the educational attainment and its difference to the level of self-concept, it was also found of no significance. It has an obtained value of -0.086294 less than the critical value of 3.085 which means of having no significant differences. This means, that apart from the reached educational level, the level of self-concept is still appropriate. Educational background does not give importance in developing the parents' self-concept. Self-concept, as a component of human personality development, has its own nature and peculiarity. Sanchez, et al. (1986) explained that when the person's self concept such describing himself, the person will probably reach satisfactory. By the time they have judgments among themselves; they will believe in themselves and reach satisfactory. In that case, educational attainment would not matter.

This concept is not applicable to the selected parent-respondents of Barangay Nangka because of the difference in context of location of the study. This claim cannot be generalized because of the differences in the nature of personality of people and individual differences. It only means that not all studies are universal and normative in approach where all contexts and situations are the same or similar.

6. The Relationship of the Personality Traits of the Parents in the Gender Identity Formation of Adolescents

Table 15
The Relationship of the Personality Traits of the Parents in the Gender Identity Formation of Adolescents

	df	**Obtained Value**	**Critical Value**	**Decision**
Self-esteem	1	0.556734	**3.841**	**Accept Ho**

Self-image	1	0.654377	3.841	**Accept Ho**
Self-concept	1	7.838762	3.841	**Reject Ho**

α=0.05

Table 15 shows the relationship between the personality traits of the parents in the gender identity formation of the adolescents. The study shows no significance in self esteem with an obtained value of 0.556734 and for the self-image having an obtained value of 0.654377 which are lesser than the critical value of 3.841 resulting for not significant relationship. However, the self-concept of the parents has an obtained value of 7.838762 which is greater than the critical value meaning to a significant relationship.

It implies that the gender identity formation of the adolescents was independent to the personality traits of parents except to the self-concept. The significant relationship of the self-concept to the gender identity formation lies with its nature. The self-concept is being defined as the person's over-all evaluation of oneself and the total awareness of the different internalized qualities and attributes. During the adolescence stage, the adolescent is embracing his/her own identity and tend to internalize the values of those significant others that are considered as essentials in their identity. This means that if the parent knows to himself that he/she is a responsible parent, that trait could be internalized also by the adolescent. And this trait when summed up with the other internalized traits by the adolescent makes up their gender identity which means the person's private sense, and subjective experience, of their own gender as either masculine or feminine.

The adolescents at this stage are no longer in their formative years so the influence of their parents becomes less unlike to the prior stage of development. They are now the knowing individuals who are being more engaged socially as they establish their own preference and identity and have the free will to choose their own way of life.

Moreover, according to Adams and Marshall et al., (1996), adolescence is a period of development wherein psychosocial engagement and assumed that different social settings influence the process of identity formation is utmost and at peak. Adolescents are vulnerable and susceptible to influences particularly of those immediate significant others, and not only parents are involved but also other people such as peers according to Bronfenbrenner's Ecological Systems Theory-Microsystem. During this transition period, adolescentstend to shift and change their models of which they will imitate and model their behavior. They are looking for someone whom they think they can model and adapt.

In addition, Eccles, Midgely, et al. (2013) emphasized the accelerating effort by youths to control their own lives is accompanied by pressure on the family to renegotiate the power balance between parent and child. So as what Steinberg (2010) has said, parents and adolescents have fewer interactions and do fewer things together outside the home than they made at an earlier period. This "distancing" in the relations between adolescents and parents may be a natural, evolutionary part of puberty. One can argue that distancing in parent-adolescent relations have a functional value for adolescents in that it fosters their independence, pushes them to try more things on their own, and develops their sense of identity. Parents are there for their children to give guidance and affection and not to manipulate nor control their lives. The adolescent has his own freewill to choose whatever he wants and likes in his life.

CHAPTER V
SUMMARY, CONCLUSION AND RECOMMENDATIONS

This chapter presents the summary of the findings, the conclusions made based on the interpretation of the results and the recommendations drawn from the analysis and investigation of the researchers.

Summary of Findings

Based on the gathered data, the following findings are presented.

1. In terms of demographic profiles of the parent-respondents, the 105 parents were distributed into 3 age groups. Majority is from age 40-44 a frequency of 53 or 50.48% of the total population followed by the 30-39 age group having a frequency of 36 or 34.29 lastly, the 50-59 age group having a frequency of 16 or 15.24% of the total population

   In terms of sex, majority of the parents were females with a frequency of 82 or 78.09 % of the population while the males with a frequency of 23 or 21.90% of the population.

   In terms of socioeconomic status, majority of the respondents (parents) were having an average income with a frequency of 71 or 67.62% of the total population followed by low income respondents with a frequency of 28 or 26.67%. Lastly, the high income respondents with a frequency of 6 or 5.71% of the total population.

   In terms of the educational attainment, majority of the respondents reached the college level with a frequency of 60 or 57.14%, followed by respondents who reached high school level with a frequency of 36 or 34.29%, and lastly the respondents who reached elementary level has a frequency of 9 or 8.57% of the total population.
2. In terms of the demographic profiles of the adolescent-respondents, the 105 adolescents were distributed in 3 groups. Majority is from ages 15-17 years old with a frequency of 58 or 55.24%, followed by the 12-14 year old group with a frequency of 28 or 26.67%, and lastly by 18-20 year old age range with a frequency of 19 or 18.10% of the total population.

   In terms of the sex, majority of the adolescents were females having a frequency of 64 or 60.95% while the male having a frequency of 41 or 39.95% of the total population.
3. The general level of the personality traits of the parents are the following: for the self-esteem having a mean score of 3.72 which means very high according to the verbal interpretation of the Likert scale, the self-image having a mean score of 3.60 which also means very high, and lastly the self-concept having a mean score of 3.70 which also means very high according to the verbal interpretation of the Likert scale.
4. The general level of the gender identity of the adolescents are the following: the number of males having masculine traits has a frequency of the 13 or 31.17 % of the total male adolescent respondent population while the number of males having feminine traits has the frequency of 28 or 68.29% of the total male adolescent respondent population.

   For the females having masculine traits, it has a frequency of 14 or 21.88% of the total female adolescent respondent population and the number of females having masculine traits has a frequency of 50 of the total female population.
5. The difference between the personality traits of parents when they are grouped according to their demographic profile shows insignificant. Age, Sex, Socioeconomic status and educational attainment are insignificant to their personality traits. All of the obtained values when measured were all less than the critical value resulting to the acceptance of the null hypothesis which is there is no significant difference between the personality traits of parents and their demographic profiles. It was measured to the alpha level of $\alpha=0.05$ using the One-Way Analysis of Variance.
6. The relationship between the personality traits of the parents and the gender identity formation of the adolescents were found to be insignificant except in the self-concept. The self-esteem has an obtained value of .556734, the self-image has an obtained value of 0.65437, and the self-concept has an obtained score of 7.838762. The two personality traits

of the parents were measured and showed a result less than the critical value of 3.841 using the Chi-square test with an alpha level of $\alpha=0.05$ meaning to be not having significant relationship related. The obtained value of self-concept is greater than the critical value which means there is a significant relationship to the gender identity formation of the adolescents.

Conclusions

Based on the findings, the researchers came up to the following conclusions:

1. Parents aged 40-49 years old comprise majority of the parent population, having more female parents than male, also most of them are coming from the average income group and reached college level.
2. Adolescents aged 15-17 years old and the female adolescents dominated the adolescent respondents' population.
3. The general level of the personality traits of the parents was very high.
4. The general level of the gender identity was high in femininity.
5. There is no significant difference between the personality traits of parents when they are grouped according to their demographic profile.
6. The personality traits of the parents such as self-esteem and self-image were not significantly related while the level of self-concept of the parents is significantly related to the gender identity formation of the adolescents.

Recommendations

Based on the obtained findings and formulated conclusions, the following recommendations were made.

1. There is a need for further research and evaluation in the significant others of the adolescents. The researchers suggest to have a similar study to be conducted wherein the respondents are the peers of the adolescents. It is a good idea to know whether the personality traits of the peers play significantly in the gender identity formation of their co-peers. This will lead for other researchers to append and dissect additional factors that could make this topic more interesting and scholarly.
2. Future researchers should gather a bigger population of respondents coming from different areas in the Philippines in order to achieve more reliable and appropriate results, and the generalizability will be significantly incorporated as part of the results in Philippine context in future findings. Also, include more appropriate statistical instruments and statistical treatments for the reliability and validity of outcomes. Focus on the demographic profiles because these factors are still argued in most researches. Lastly, the researchers suggest that the location to be utilized by the future researchers will be not limited to subdivisions and villages.
3. The future researchers should have a clear understanding that some of the respondents, particularly males are not mostly in their homes so it was suggested by the researchers to have a more balanced respondents distribution in terms of sex in order to come up with a more reliable and not having biased results.
4. The current researchers suggest to develop a personality workshop training program for the adolescents in coordination with the SangguniangKabataan of the barangay to hone and develop the personality of the adolescents. It was stated that during this stage, they are exploring and knowing themselves so proper education is needed in order for them to have a well-established identities.
5. The current researchers also suggest to conduct a gender identity consciousness/awareness program in coordination with the barangay officials wherein the adolescents will become more aware with the different gender issues and concerns that they may actually be facing in order for them to become more educated and knowledgeable with the different possibilities and instances that may arise during their development.

6. And lastly, the current researchers suggest to have a Parental Awareness/Involvement Seminar in coordination with the Social Welfare Department to give more emphasis in their role as parents and their involvement in the development of their children. It is a good idea to see that the parents are becoming well-informed and interested with the problems and concerns of their children so they can help them when problems arise.

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