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Exploring Creativity: Creativity, Cognitive Styles and Learning Styles among Engineering and Computing Students

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Abstract

The purpose of the study was to understand and describe the level of non-verbal creativity and its relation to cognitive and learning styles of engineering and computing students. This might possibly provide engineering educators with knowledge of the above three factors and their adaptation to teaching and learning. The study was an exploratory-comparative study with one independent variable (engineering versus computing students) and three dependent variables [the Non-Verbal Test of Creative Thinking (Mehdi, 1973), The Group Embedded Figures Test, (Witkin et al, 1971); the Visual, Auditory, Read and Write Kinesthetic VARK Questionnaire, (Fleming, 1992)]. The study aimed to compare the level of non-verbal creativity and influence of other attributes on the creativity of students of engineering and computing science. Additional aims were to see if there were significant differences in cognitive and learning styles of students from engineering and computing science. Data were collected by administering the three tests to engineering and computing students in three colleges in Bangalore (N=105). Data analysis was conducted using t-test, ANOVA, MANOVA and Pearson correlation coefficients. Findings indicated that engineering and computer students have above average levels of non-verbal creativity. Engineering students are more field-independent compared to computing students. Computing students are field-dependent in their cognitive style. Engineering and computer students focus more on the kinesthetic learning style. The implications of these findings for the education of engineering and computing students are discussed.

Keywords: Engineering, Computing, Creativity, Learning styles & Cognitive styles

Introduction

Creativity is a complex construct and is most commonly expressed through a broad range of intelligences including linguistic, musical, mathematical, spatial, kinaesthetic, interpersonal perhaps even intrapersonal (Gardner, 1985). In simplest terms Robinson (2001) describes creativity as ‘imaginative process with outcomes that are original and of value’. It is also interesting to understand that reasoning, imagination and intuition have a reciprocal relationship to contribute to each other while one fails to act the other will be in action (Crane, 1983). While all our technological advances can be linked to above definitions and explanations of creativity, then the logic can be safely extended and the importance of creative thinking in engineering education can be firmly established.

Similarly, according to the demand of engineering courses, growing number of students and interestingly the focused issue of the gap between employability challenges and competencies among the engineering students in India can be addressed to some level by this current research focus. It’s not only in India, also in UK as well as in the world, creative problem solving skills are identified as essential abilities for fresh undergraduate engineers and also for professional engineers (Adams et al, 2010). Several surveys revealed that there is a remarkable gap in employability skills of passing out engineers and the mode of teaching-learning approach in Indian engineering colleges (Wipro Limited: Mission 10X Division, 2009). In the year 1990, with the embarked policy of rapid expansion in higher education in par with market demands in Singapore (Brown, 1996) that they have focused to equip their Politechnique graduates with a blend of creative abilities, logical reasoning and analytical abilities (Seng, n.d.). While the blends of the abilities were promoting and innovative conceptualization is prioritised, educators were the majorly challenged group since they were to train the graduates adaptable to such a changing environment (Seng, n.d.). Similarly, even in India, it is a call for equipped student’s skills pertaining creativity and fulfilling the demands of the enterprise.

It is also interesting to understand the kinds of perceptions persisting that engineers are uncreative, and also no requirement to tap in to creativity in certain cultures and systems, while majority of engineering projects demand creative or innovative designs and outcomes at the end. Henceforth a survey was conducted by civil and environment engineering department, University of Wisconsin- Madison to see how creativity and innovation are utilized in learning environment and also offered strategically methods to make creativity a part of every curriculum in and related to engineering (Stouffer, 2004). American Association of Engineering Societies as well as IEEE-USA found through a Harris poll that “2% of the public associate the word ‘invents’ with engineering; [and] only 3% of the public associate the word ‘creative’ with engineering” (Stouffer, 2004; Bellinger, 1998; Wulf, 1998).

With several considerations, it raises the question, what is creativity? What is the level of creativity of engineering students in Bangalore, India? Can creativity possibly be a part of the curriculum of engineering students to enhance their employability skills? Or What leads to creativity among engineering students? This research focused to explore how creativity and innovation can be linked to the engineering students learning and processing styles such as cognitive styles: field independent-field dependent and different learning styles. Can there be a model which integrates these aspects to the engineering curriculum?

Purpose

The purpose of this study was to describe the level of non-verbal creativity and its relation to cognitive and learning styles of engineering students, which might possibly provide engineering educators to acquire knowledge on inter relational effect on above three factors and its possible adaptation to teaching-learning-approach. The research sought to determine : (1) whether there were significant differences in non-verbal creativity of the students from different engineering disciplines (2) whether there were significant differences in cognitive styles of students from different engineering disciplines (3) whether there were significant differences cognitive style and non-verbal creativity (4) whether there were significant differences in learning styles of the students from different engineering disciplines (5) whether there were significant relationship between non-verbal creativity, cognitive style and learning style of engineering students.

Methodology

Design and Instrumentation

An exploratory-comparative study with one dependent variable and three independent variables was established to compare the level of non-verbal creativity and influence of other three attributes on creativity of students in different engineering disciplines. The dependent variable of non-verbal creativity score provided by the Non-verbal test of Creative thinking by Mehdi (1985), the test is a pictorial test which includes three different activities as picture construction, picture completion and triangles and eclipses. Subjects who produced original, unusual, meaningful and unique responses have considered as creative (Mehdi, 1985).

Cognitive style of the students was measured by the Group embedded figure test (GEFT) (Witkin, Oldtman, Raskin, & Karp, 1971). The GEFT is an 18 item instrument which requires the subject to identify a simple geometrical shape within a complex figure. Subjects who correctly identify majority of the simple figures in the complex figure are considered field independent and those who score lower are considered to be field dependent (Witkin et al, 1971).

VARK questionnaire (version 7.1) originally developed by Fleming (1987) which was added with four categories in 1992 by Fleming and Mills as Visual, Auditory, Read & write and Kinesthetic was used to measure the students preferred learning style.

Data Collection

The three instruments of Non-verbal creativity, Cognitive style and Learning style were administered to 105 engineering college students which consists mechanical engineering, electronic engineering, Information science and Computer science attending three different engineering colleges in Bangalore, India. At each of the instrument administration sessions, exact procedures were followed. Subjects were read, verbatim, the instructions provided by each of the instrument administration manuals. Practical problems given in the manuals for practice have facilitated and ensured comprehension of the directions. The subjects first completed the Non-verbal creative thinking test since it is simple in instructions and no complexity is involved as well as it was to be given in the fresh mind set to obtain the better outcome of creativity from participants. Then Group embedded figure test was given and at last learning styles questionnaire was given to answer.

Data Analysis

The four engineering specialization groups' scores on the Non-verbal creativity test were used as the dependent variable in analysis of variance (ANOVA). An ANOVA was utilized since the creativity is a single set of scores and specialization which is the independent variable is a categorical variable which consists four categories. The means of the scores are then analysed for significant differences. Similarly, Cognitive style score and specialization was compared through analysis of variance test for the mean differences to see whether there is any significant difference in cognitive style among the students of four engineering disciplines.

Then to determine whether field independent or field dependent students score high in non-verbal creativity, t-test was conducted and mean difference of creativity score was compared on field independency and field dependency. Finally, the individual scores on VARK questionnaire, were used as four different variables in a multivariate analysis of variance (MANOVA). A MANOVA was utilized since learning style constructs of visual style, auditory style, read & write style and kinaesthetic style against four different engineering disciplines, to identify whether there is any significant difference in their learning and processing information pertaining to the study branch of engineering. Significant multivariate difference ($p < 0.05$) were followed up with an analysis of variance utilizing Student-Neuman-Keuls (SNK) post hoc comparison to determine which groups were significantly different.

To conclude the analysis, the relationship between three main variables; creativity, cognitive style, and learning style were tested on Pearson correlation coefficient and analysed for inter-relatedness among three variables with reference to engineering specialization.

Findings

The first research question was “Whether there were significant differences in non-verbal creativity of the students from different engineering disciplines?” to answer this research question, data gathered by using Non-Verbal Creativity assessment (Mehdi, 1973) were primarily analyzed using descriptive statistics such as mean and standard deviation. The table No 1 below shows the results.

Table 1: Mean and standard deviation on Non-Verbal Creativity and group Embedded Figure Test - GEFT scores of different Engineering discipline students

<i>Specialization</i>	<i>Mean</i>	<i>Number of students</i>	<i>Standard Deviation</i>
Scores on Non-Verbal Creativity			
Mechanical	108.68	25	12.15
Information science	102.48	25	12.03
Computer Science	83.00	27	22.00
Electronics	109.75	28	14.11
Total		105	
Scores on Cognitive Styles- GEFT			
Mechanical	14.80	25	3.342
Information science	10.84	25	3.037
Computer Science	11.93	27	3.951
Electronics	13.75	28	3.845
Total		105	

The second research question was, “whether there were significant differences in cognitive styles of students from different engineering disciplines”, and to answer this research question, data gathered by using Group Embedded Figure Test (GEFT) were primarily analyzed using descriptive statistics such as mean and standard deviation. The table No 2 below shows the results.

Table 2 : Analysis of variance of Non-verbal creative thinking ability, Cognitive Styles- Group Embedded Figure Test scores and Specialization

<i>Source</i>	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Effect Size</i>
Non Verbal Creativity					
Engineering Disciplines	3	12419.67	4139.90	16.73	.000*
Error	101	24986.93	247.39		
Total	104	37406.63			
Cognitive Style- GEFT					
Engineering Disciplines	3	241.79	80.59	6.29	0.001*
Error	101	1294.46	12.82		
Total	104	1536.25			

***P < 0.05.**

The Non-verbal creative thinking scores were initially analysed against their specializations using analysis of variance, results presented in table 2. Similarly, Cognitive style scores also analysed with analysis of variance for identifying the differences among engineering disciplines. According to the presented findings in table 2, which shows that two analyses of variances executed for the scores of Non-verbal creativity and Cognitive style on their mean differences in comparison between engineering specializations? Findings indicated that students from four engineering disciplines are significantly different in their Non-verbal creativity and Cognitive styles (Field independency and field dependency).

Research question “whether there were significant differences cognitive style and non-verbal creativity“ was answered by the assessment of cognitive styles test results. The results are summarized in Table 3 which provides the mean and standard deviations on non-verbal creativity scores of Field independent and Field dependent students.

Table 3: Mean and standard deviation on Non-verbal creativity scores of Field Independent/ Field Dependent students.

<i>Cognitive Style (on the basis of GEFT Scores)</i>	<i>Mean</i>	<i>Number of students</i>	<i>Standard Deviation</i>
Field Independent	105.29	51	16.97
Field Dependent	96.72	54	19.94
Total	100.89	105	18.96

Further analysis of T-test results (Table 4) on Non-verbal creativity based on two cognitive styles, indicated that field independent individuals are significantly higher in creativity score when compared to field dependent individuals at p d' 0.05 confidence level. The creative thinking and cognitive styles had maximum possible scores of 18 and 130 respectively. For learning styles; visual style, aural style, read & write style and kinaesthetic style had obtained four different scores for each individual.

Table 4: T-test analysis for Non-Verbal Creativity among Field Independent and Field dependent engineering students.

<i>Source</i>	<i>Mean Difference</i>	<i>Standard Error Difference</i>	<i>df</i>	<i>t</i>	<i>Significance (2 tailed)</i>
Non Verbal Creativity					
Equal Variances Assumed	8.57	3.62	103	2.365	.020*
Equal Variances not Assumed	8.57	3.60	101.92	2.376	.019*

**P* < 0.05.

Table 5, reveals the mean and standard deviation values for different learning styles across four engineering disciplines.

Table 5: Learning Style scores means and standard deviation by hypothesis

<i>Variable</i>	<i>Learning Style</i>									
	<i>Visual</i>		<i>Aural</i>		<i>Read and Write</i>			<i>Kinesthetic</i>		
<i>Specialization</i>	N	M	SD	M	SD	M	SD	M	SD	
Mechanical	25	4.32	1.99	6.96	3.07	6.24	2.93	8.44	2.12	
Information Science	25	5.04	2.57	7.36	2.29	5.92	2.63	8.08	3.26	
Computer Science	27	4.52	2.10	6.52	2.12	5.63	2.15	8.22	2.39	
Electronics	28	6.07	2.61	7.25	1.99	5.64	2.69	8.36	3.41	
Total	105	5.01	2.41	7.02	2.38	5.85	2.58	8.28	2.82	

Table 6a: Multivariate Analysis of Variance for Learning Style Scores according to different Engineering disciplines

<i>Effect</i>		<i>Multivariate test of significance</i>			
		<i>F</i>	<i>Significance</i>	<i>Hyp. df</i>	<i>Error df</i>
Specialization	Learning Style				
	Visual	3.044	.032*	3	101
	Aural	.657	.581	3	101
	Read and Write	.314	.815	3	101
	Kinesthetic	.972	.972	3	101

* $P < 0.05$.

Table 6b: Multivariate Analysis of Variance for Visual Learning Style Scores across four Engineering disciplines

(Visual learning style is predominantly significant according to F ratio:Table 6a)

<i>Effect</i>			<i>Multivariate test of significance</i>				
			<i>Mean Difference I-J</i>	<i>Standard Error</i>	<i>Sig.</i>		
Dependent Variable	Specialization (I)	Specialization (J)					
			Visual Learning Style				
			Mechanical	Information	-.72	.651	.854
				Science	-.20	.568	1.000
				Computer Science	-1.75*	.634	.047
				Electronics			
			Information Science	Mechanical	.72	.651	.854
				Computer Science	.52	.655	.966
				Electronics	-1.03	.713	.634
			Computer Science	Mechanical	.20	.568	1.000
				Information science	-.52	.655	.966
				Electronics	-1.55	.638	.105
			Electronics	Mechanical	1.75*	.634	.047
				Information Science	1.03	.713	.634
				Computer Science	1.55	.638	.105

* $P < 0.05$.

According to mean values, all four engineering discipline students pre-dominantly preferred kinaesthetic style, which leads to an interesting finding of the research. Further test of Multivariate analysis of variance results presented in Table 6a and Table 6b, to identify the significant differences of learning styles across four engineering discipline students. Findings indicated a significant difference on visual learning style. Electronic engineering students have predominantly preferred visual learning style and have shown a significant relation at $p < 0.05$ with their specialization of study. However, among other study specializations and learning styles there were no significant interactions indicated by the MANOVA test.

Finally, Pearson correlation coefficients were computed among the three variables of non-verbal creativity, cognitive style and learning style. The results of these correlational analysis indicated that visual learning style, creativity and cognitive style are positively correlated; also cognitive style and kinaesthetic learning style have shown a positive correlation with one another as well. The bivariate correlation between non-verbal creativity and cognitive style was $r(102) = 0.247, p < 0.05$, and the bivariate correlation between non-verbal creativity and visual learning style was $r(102) = 0.208, p < 0.05$. Moreover, the bivariate correlation between cognitive style and kinaesthetic learning style was $r(102) = 0.243, p < 0.05$. The results suggest that non-verbal creative thinking, cognitive style and visual learning style are positively correlated when compared and controlled for four engineering disciplines of the sample.

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that non-verbal creative thinking, cognitive style and visual learning style are positively correlated when compared and controlled for students from four engineering disciplines of the sample.

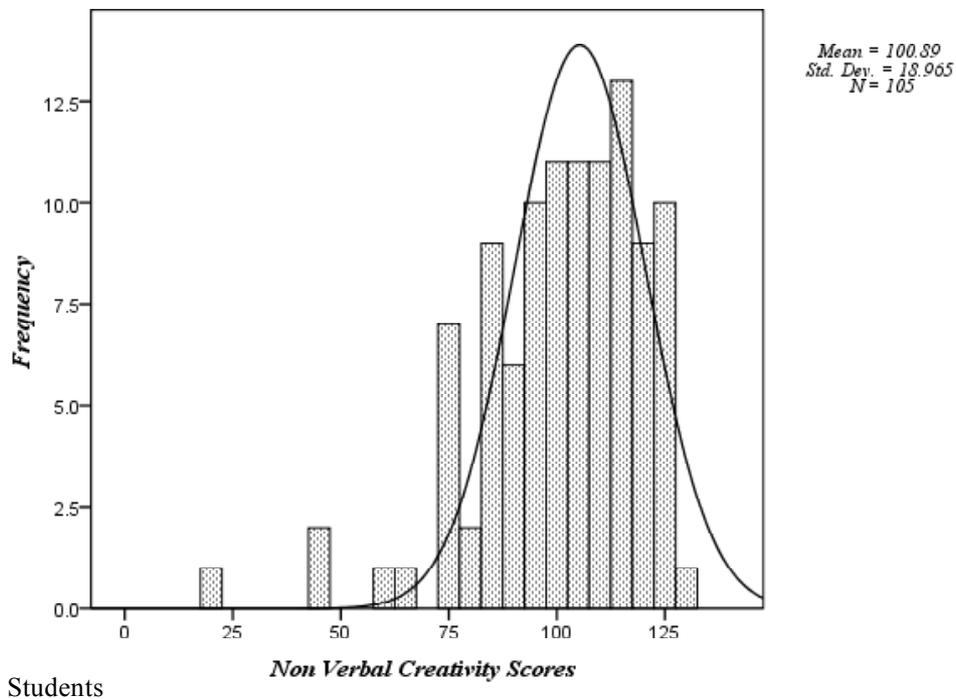
Discussion

The results of this study confirms the possibility of enhancing and utilising creativity, cognitive styles and learning styles within the undergraduate learning environment supporting the goal of some of the surveys and research conducted in India (WIPRO Wipro Limited: Mission 10X Division, 2009; Padmini, H.A., Bharadwaj, A.K., Nair, T.R.G.,2009).

The comparisons between four engineering disciplines have indicated that their non-verbal creative thinking ability and field independency are higher and better in overall (Graph 1), and all four groups are indicated to have preferred kinaesthetic learning style mainly according to mean comparisons.

Graph 1: Normal Probability Curve on Non-Verbal Creativity among Engineering Students

Non-Verbal Creativity among Engineering Students



A study conducted on a cognitive apprenticeship approach to engineering education: the role of learning styles (Poitras & Poitras, 2011), found that the cognitive apprenticeship approach can fulfil and consists a range of learning styles preferred, which would benefit in creating an optimal learning platform suits each student. Therefore, as a countering method to adopting preferred learning style in teaching-learning approach it can also be possible to adopt such techniques. But according to the current study, it suggest that an accountable number of students in the study preferred the kinaesthetic learning style dominantly among engineering disciplines.

However, findings indicated that groups are more of field independent and simultaneously field independent students also have obtained significantly higher non-verbal creative thinking scores. Furthermore, electronics engineering group have indicated that they prefer visual learning style when compared to other three groups, even though kinaesthetic is common to all the four disciplines.

Finally, it was also shown that there is an inter-relational effect between cognitive styles, creativity and learning styles; especially when focused to electronic engineering, visual learning style and cognitive style. Moreover, Computer science and information science students have indicated to be field dependent when compared to other two engineering specialization groups.

Henceforth, these findings can be extended to utilize to enhance students skills in their field of study and that might also be helpful in filling the gap between the skills and challenges faced by fresh employees in the industry (Padmini, H.A., Bharadwaj, A.K., Nair, T.R.G., 2009). There are few actions already been taken to fill the above mentioned gap in education methodologies according to market industry (WIPRO, 2009; Padmini, H.A., Bharadwaj, A.K., Nair, T.R.G., 2009). But still that adaptation of creativity and applicability to challenge the employability challenges have majorly not been achieved in order to identify a remarkable difference by the fresh graduates who are passing out from universities seeking employments in professional world. Moreover, according to the findings of the study, it is important to focus on to the Kinaesthetic modes of practical exposure as well as simulating sessions which creates a first-hand experiences to students. Because that will enhance the ability to be creative and find solutions using creativity overcoming the challenges possibly would be faced during a realistic project with time restrictions. Also according to findings it indicates that different branches of engineering have different styles of learning and processing (cognitive style) therefore use of these styles would benefit the teaching-learning process much more enjoyable, interesting and effective. Further research in creativity, learning and cognitive styles among engineering students with more in-depth information and assessments would be helpful in development of an effective model to adapt in to the engineering education methods and would benefit engineering educators.

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Methodological Perspective of Capturing Lived Experiences of Academic Entrepreneur

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Abstract

Many novice researchers in the field of education are often overwhelmed by the plethora of some versions of phenomenological method. They are basically being blamed for not maintaining an appropriate phenomenological rhetoric. The way of maintaining phenomenological rhetoric has been a challenge for many novice researchers. In this paper, several journals and books are reviewed in order to point out some of the challenges that are encountered in attempting while using hermeneutic phenomenology as a method. Challenges and problems encountered by researchers are centered in generating research questions, paradigm to be adopted, philosophical and methodological procedures. This paper thus aims at documenting overall research process in hermeneutic phenomenology so as to make it more accessible research methodology to be used in educational research. This paper is expected to be useful to novice researchers, who are in dilemma to adopt hermeneutic phenomenology as a research method and it also creates a roadmap in educational research indicating methodological possibilities for creating a body of knowledge in order to establish a claim for new knowledge.

Setting the Scene

I, as a researcher, reviewed literature on entrepreneurial leadership in higher education and found a gap that Nepali academic leaders have not been able to demonstrate required entrepreneurial knowledge and practice of it to trace higher education as per societal, national and international expectations. This confounding and alarming situation compelled me to explore the contextual situation collecting authentic evidences from academic leaders of Nepal. For this purpose, I formulated a set of arguments in the form of questions grounding predominantly on research questions, research paradigm, philosophical and methodological procedure before reviewing related literature. In fact,

my thrust was to construct the meaning incorporating lived experiences of academic leaders. The set of arguments I formulated are: How can I develop research questions in order to capture lived experiences of academic leaders? Which paradigm is aligned with my research questions? Which philosophical procedure guides me to achieve my research goals? Which methodological process is appropriate to claim valid knowledge that I generate through this research project? These arguments led me to discuss critically prior knowledge on different journals and books.

Generating Research Questions to Capture Lived Experiences of Academic Leaders

My journey started from the first argument to develop research questions in order to capture lived experiences of academic leaders. For this purpose, I critically discussed van Memen (1990), Lopez & Willis (2004), Denzin & Lincoln (2005), Geven (2008), Teddile & Tashkkari (2009) and Creswell (2009). I also reviewed twelve journals: International Journal of Qualitative Methods, Journal of Traumatic Stress, Journal of Advance Nursing, The Qualitative Report, International Journal of Evidence Based Coaching and Mentoring, Indo-pacific journal of phenomenology, Educational philosophy and theory, Qualitative Health Research, Teachers and teaching: Theory and Practice, Phenomenology and educational discourse, Phenomenology + Pedagogy and Journal of Holistic Nursing,

This critical review of related literature provided me a basic understanding of designing research questions to capture lived experiences of participants. On the basis of these arguments I formulated the following research questions:

1. How do academic leaders experience entrepreneurial leadership?
2. How do they explain entrepreneurial orientation and activities in their academic roles?
3. How do they articulate and demonstrate required environment for entrepreneurial leadership development?

After formulating research questions, I encountered several problems: How can I guide my action being based on my research questions? What are the possible paradigms to guide my research process and which one of them can be best aligned with my research questions? To answer these questions, I again revisited the relevant literature listed in the earlier section and a few more in order to have a comprehensive understanding of research design.

Research Design to Interpret Lived Experiences of Academic Leaders

There are many paradigms of viewing authenticity or reality in the world. It is called knowledge claims in research. Paradigms may be defined as the worldviews or complete with assumptions that are associated with that view (Mertens, 2003 as cited in Tashakkori & Teddlie 2009. p.4). Creswell (2009) prefers 'worldview' to paradigm. According to him, "Worldview is a basic set of beliefs that guide action" (p.6). For Bryman (2009) paradigm is "A cluster of beliefs and dedicates which for scientists in a particular discipline influence what should be studied, how research should be done and how result should be interpreted" (p.605). From the discussion so far, I came to know that what the terminology could be and I understood that research paradigm is a general orientation about the world and the nature of research that a researcher holds.

Advocating types of knowledge claim, Creswell (2009) argues four schools of thought: post-positivism, constructivism, advocacy/participatory, pragmatism. The post-positivistic position, which comes after positivism, asserts that absolute knowledge is one and it can be obtained if we follow systematic scientific inquiry. This paradigm accepts scientific method out of which quantitative research is driven. It is also linked with the concepts such as cause-effect relationship and reductionism. This doctrine believes that social observations should be treated as entities in much the same way that physical scientists treat physical phenomenon.

The second knowledge claim, according to Creswell (2009) is allied with constructivism or interpretivism, and it holds assumptions that individuals develop subjective meanings of their experiences. The researchers under this knowledge claim seek understanding of the world in which they live and work (Creswell, 2009, p. 8). It assumes that truth or true knowledge is within the people under investigation, not outside. The realities are many as per the people involved in interpretation. It is not appropriate to generalize one theory or reality because reality changes from one context to another. Trying to obtain such reality through the collection of numeric or quantitative data is not suitable. So in-depth understanding of the phenomenon is desirable. The philosophy of constructivism leads to the emergence of qualitative research.

The third knowledge claim is advocacy or participatory. This system of belief starts when social science researchers come to realize that reality comes from the combined knowledge and experience of researchers and marginalized groups of people in society (Creswell 2009 p.9).

The last knowledge claim, as Creswell (2009) advocates, is the pragmatic knowledge claim. This world view asserts that truth is what works at the time. Pragmatists believe that research problems are more important than research methods. Therefore,

they suggest applying all approaches available to understand the problem. According to pragmatists, “Researchers are free to choose the methods, techniques and procedures of research that best meet their needs and purposes. Mixture of two or more than two methods can be applied to understand the problem Creswell” (2009, p 10).

After reviewing these knowledge claims, I came to know that my research questions demand interpretation of the lived experiences of educational entrepreneurs about leadership and environment. Therefore, my study aligns with constructivist paradigm because I strongly believe that new knowledge can be constructed through experiences of educational leaders. The understanding of the alignment of research questions with constructivist paradigm again leads me to legitimize it with philosophical underpinning exploring ontological epistemological and axiological stand point in order to claim the reality.

Philosophical Underpinning to Interpret Lived Experiences of Academic Leaders

Each philosophy, paradigm and approach defines the reality differently. Ontological assumptions about the world can be described as non-realist and reality depending on the view of different persons (Denzin & Lincoln 2005). I believe that knowledge is tied to cultural, political, social, economic conditions of that society and the meanings are constructed by human beings as they engage with the world, they are interpreting. Moreover, the basic generation of meaning is always social, arising in and out of interaction with human communities. So, ontological assumption of this study is constructivism. As a researcher, I believe that knowledge is subjective and context oriented. The knowing process is fallible and the perception is that people create their own understandings about each phenomenon from the result of their prior experiences in the existing socio-cultural context (Creswell 2009). Thus, I believe that knowledge is relative and it depends on learner’s perception. It may differ from person to person. Hence, this study is guided by the subjective reality.

I, as a constructivist, believe that everyone is guided by certain values and he or she decides the worth of any knowledge; however, no values in the society are wrong but they are only different (Opie, 2004; Richards, 2003). Therefore, I value their unique pattern of thoughts, assigning multi-layered value and experiential knowledge.

I again encountered with a problem, after staking to philosophical underpinning to determine methods of inquiry align to my research questions. For this purpose, I again reviewed the relevant literature listed earlier to capture the trend on methods of inquiry in social science research.

Tradition on Methods of Inquiry in Educational Research

Basically, a researcher can employ one of the three methods of inquiry, namely; qualitative method, quantitative method and mixed method. These are distinct in nature, each consisting of unique assumptions. My proposed study adopts qualitative approach. A researcher, who employs a qualitative approach, is interested in making meaning of a situation by observing or becoming part of the research environment as it exists naturally and learning about what happens in the environment from her/his subjective points of view (Cresswell, 2009).

A qualitative researcher seeks to understand a view that is holistic in nature (Denzin & Lincoln, 2005). It tells not only about persons, stories and behaviors but also about organizational functioning, social moments or interactional relationships (Strauss & Corbin, 1990 as cited in Poudel, 2010). The qualitative description includes studies related to culture, patterns or process of social and cultural change by encompassing the elements like customs, norms, or values of social structure and organization or patterns of human behavior. It is especially effective in obtaining values, opinions, behaviors and social context of particular population. There are many methods of carrying out research within qualitative approach. They are: ethnography, phenomenology, case study, grounded theory, etc.

The review above helped me to understand the alignment of my study with phenomenology as a qualitative method to capture the lived experiences of the participants. I knew that my research questions include human capabilities of perceiving things imaginatively, empathetically and intuitively (Giorgi 2008). Consequently, this idea showed the way to review phenomenology as a philosophy and method. For the purpose, I again went through the literature to have a comprehensive understanding on phenomenology as a philosophy and method.

Phenomenology as a Philosophy

Phenomenology as a philosophy came as a reaction against positivist view of philosophy. It opposed Descartes dualism of mind and body or consciousness and matter (van Manen 2009).

For phenomenologists, the separation between appearance and reality or objects and the external world was untenable since experience is something (Harmond et al 1991). Husserl (1927/1971), as a founding father of phenomenology, developed a philosophy that would separate mind from matter; rather it pointed to experience as one is conscious of it as a central feature of life. His prime aim for philosophical phenomenology was to develop means by which essential or universal knowledge would be claimed. In order to

achieve this, he proposed a number of reductions, which involved individual bracketing or suspending the natural attitude.

His idea was criticized by both hermeneutic and existential phenomenologists on the ground that self and consciousness are not separated (Conroy 2003). Merleau-Ponty (1962) advocated that consciousness is in dialogue with the world. He further claimed that people are not separated from the world but experiences are.

An important contribution that Merleau-Ponty (1962) made to phenomenological thought was that he identified four qualities of phenomenology: description, reduction, essence and intentionality. The aim of phenomenology is to describe phenomena. Phenomena include anything that appears or presents itself such as feelings, thoughts and objects. Reduction, on the other hand, is a process that involves suspending or bracketing the phenomena so that the things themselves can be returned to (van Manen, 1982). An essence is the core meaning of an individual's experience that makes it what it is. Finally, intentionality refers to conscious of something. It is the total meaning of the object which is always more than what is given in the perception of a single perspective. van Manen (1984) summarizes the philosophical assumptions of a phenomenological study: a) phenomenology is the study of lived experiences; b) It is the attentive practice of thoughtfulness; c) It is a search for what is meant to be human and d) It is a poetizing activity. Phenomenologists believe that lived experience gives meaning to each person's perceptions of a particular phenomenon. Wojnar & Swanson (2007) mentions aspects of lived experience that are interest to them are: lived space or spatiality; lived body or corporeality; lived time or temporal; and lived human relation or relationality. They also believe that human existence is meaningful and interesting because of people's consciousness of that existence. The phrase being-in-the-world (or embodiment) is a concept that acknowledges people's physical ties to their world they think, see, hear, feel and are conscious through their bodies' interaction with the world (Wojnar & Swanson, 2007).

The discussion above entails the fact that phenomenology has its disciplinary roots in both philosophy and psychology and it is rooted in a philosophical tradition developed by Husserl and Heidegger and it is concerned with the lived experiences of humans.

Phenomenology as Research Methods

Literature on phenomenology proposes that there is no single way to carry out phenomenological research. Basically, there were two schools of thought within phenomenology in the early literature. The first came from Utrecht School (Netherlands) and the second from Duquesne School (Duquesne University in Pittsburgh in the United States). Most of the works of van Manen (1991) are inclined by the Utrecht School

advocating the hermeneutic/ interpretive phenomenology whereas works of Giorgi (1971) are influenced by the Duquesne School advocating empirical phenomenology as a method (Hein & Austin 2001).

However, the development of understanding of the ontological issue of phenomenology grew as per the demand of the time in the literature of western tradition. Accordingly many schools of thought came into existence. The entire tradition of phenomenology can be classified into several schools of thought. They are: descriptive or transcendental phenomenology, naturalistic constitutive phenomenology, existential phenomenology, generative historicist phenomenology, genetic phenomenology, hermeneutic (or interpretive) phenomenology, realistic phenomenology, etc. (Wojnar and Swanson (2007). Among the types of phenomenology, my concern is in interpretative/ hermeneutic approaches of phenomenology because of several rationales. The first rationale is my strong conviction that is; experiences are described and interpreted rather than explained or analyzed. The second construct that guided me to adopt interpretative/ hermeneutic approaches of phenomenology as a method is its attachment with human science in particular and its contribution in pedagogic excellence as enlisted by van Manen (1984) where categorically mentioned four key concerns of any phenomenological research a) turning to phenomenon which seriously interests us and commits us to the world; b) investigating experience as we live it rather than as we conceptualize it; c) reflecting on the essential themes which characterize the phenomenon; and d) describing the phenomenon through the art of writing and rewriting (pp. 2-3).

The another rational for choosing interpretative/ hermeneutic approaches of phenomenology to have a natural interest in the phenomenon in investigate and my interest is not to produce a theory of being entrepreneurial leadership but is to unearth the lived experience as experienced by my participants in their contextual settings.

The aforementioned orientations can only be justified by the interpretative/ hermeneutic approach of phenomenology. As Finaly (2009) states that “The central concern of phenomenologist is to return to embodied, experiential meanings aiming for a fresh, complex and rich description of a phenomenon” (p.6).

Hermeneutic/ Interpretative Phenomenology as a Research Method

The word hermeneutic is derived from the name Hermes, a Greek god, who was responsible for making clear interpretations of messages between gods and humans (Thompson, 1990 as cited in Lopez & Willis, 2004). As advocated by its prime proponent Heidegger, Spiegelberg (1976) has identified hermeneutics as a process and method for bringing out and making manifest what is normally hidden in human experience and human relations (Lopez & Willis, 2004).

Hermeneutic phenomenological tradition is found in the philosophical literature. The key figures of this tradition are Martin Heidegger, Hans-Georg Gadamer and Paul Ricoeur (Thompson, 1981, p. 36). In Heidegger's term the relation to the individual to his life world should be the focus of phenomenological inquiry. He asserted that humans are embedded in their world to such an extent that subjective experiences are inextricably linked with social, cultural, and political contexts. This concept is called situated freedom (Leonard, 1999, as cited in Lopez & Willis, 2004). This approach gives considerable importance to the expert knowledge on the part of the researcher over the phenomenon being studied. Personal knowledge of the researcher is both useful and necessary to phenomenological research. The meanings that the researchers arrive at in interpretive research are "a blend of the meanings articulated by both participant and researcher within the focus of the study" (Lopez & Willis, 2004). Gadamer, 1976 as cited in Lopez & Willis, 2004) used the metaphor 'fusion of horizons' to explain the act of inter-subjectivity, understanding and interpretation' (Lopez & Willis 2004).

Hein & Austin (2001), Laverty (2003), Groenewald, (2004), Van der Mescht (2004) & Poole, Drive & Symes, (2010) state that hermeneutic phenomenological tradition is a holistic and poetic approach as it reveals a depth and insight into the human action and it is sensitive and reflective. The work of (van Manen (1991) has also been described as having a moral dimension to it. He maintains that the outcome of any human science research should be knowing how to act tactfully and thoughtfully. In phenomenological studies, data collection usually included conducting interviews with participants (Creswell, 2009). However, van Manen (1984, 1995, 1996, 2006, & 2009) enlisted interview, observation and protocol writing as data collection procedure. My study makes use of three tools for data collection: interview, observation and protocol writing as proposed by van Manen (1984, 1995, 1996, 2006, & 2009). Regarding data sources, van Manen (1990) state that phenomenologists can utilize a variety of data sources, including their own personal experience; gain insights into phenomenon from tracing its etymology; obtain experiential description from others via interview or observation; utilize experiential descriptions in literature (i.e. poetry, novels, plays, biographies, diaries) and art that will yield experiential data. All these sources are said to be legitimate ways of helping phenomenologists understand the phenomenology in question. My study attempts to depict all these sources in order to better understand the lived experiences of academic leaders on entrepreneurial orientation.

For data analysis van Manen (1990) sketches a number of thoughts. He suggests that thematic analysis helps the researcher unravel the themes or experiential structures of experience. He maintains that themes can be isolated mainly in three ways. The holistic approach which asks what phrase captures the meaning of the text/ data source; the selective approach which asks what is essential or revealed in the text/ data source; Finally, the detailed or line by line approach in which every sentence is examined to see

what it reveals about the phenomenon. The main reason of using a hermeneutic phenomenology is to produce a piece of writing that explicates the meaning of human phenomena and helps to understand the lived structures of meaning.

After reading several models of data analysis in phenomenological inquiry, I found the model of Ajjawi and Higgs (2007) model appropriate for an interpretative phenomenological data analysis. My study follows six stages of data analysis procedure proposed by them: immersion, understanding, abstraction, and synthesis and theme development, illumination and illustration of phenomena, and integration and critique of findings within the research team and externally Ajjawi and Higgs (2007, p. 615).

The discussion so far on hermeneutic/ interpretative phenomenology as a method entails the fact that this school believes in interpretation of lived experiences of people. It suggests using hermeneutic cycle: reading, reflective writing and interpreting. Martin Heidegger laid the foundation to this school of thought advocating situated freedom. Later it was enhanced by the scholars like Hans George Gadamar, Poul Ricour, Max van Manem and Rola Ajjawi and Joy Higgs developing new strategies of data collection, analysis and interpretation enriching hermeneutic phenomenology as a complete method of carrying out research. After knowing the fact that my study is based on hermeneutic phenomenology, I again encountered with a problem that is how to solve issues like reliability and validity? Before setting a journey for required knowledge exploration, I set some arguments: Are they sufficient enough to claim quality standard in hermeneutic phenomenology? If not what are different criteria for quality standard? How can we establish them in our research? What have scholars suggested in this issue? For this purpose, I mainly reviewed the work of Guba and Lincoln (1999), van Manen (1997), Langdridge (2007), Porter (2007) and Teddlie and Tashakkori (2009).

Issues of Reliability and Validity in Interpretative Phenomenology

The criteria and methods like reliability (which refers to the accuracy and consistency of information obtained in a study) and validity (which concerns with the soundness of the study's evidence that whether the findings are cogent, convincing and well ground) to assess the quality of a study cannot be meaningfully applied in my proposed study because of several reasons. Basically the central question underlying the concepts of reliability and validity is: Do the data and study as a whole reflect the truth? Qualitative researchers are as eager as quantitative researchers to have data reflecting the true state of human experiences. This entails that both qualitative and quantitative researchers are keen to establish quality of their studies but the way they establish it is different. After reading literature on quality standard in qualitative research I have collected

several reasons of not applying reliability and validity criteria for assessing quality in my study. First and foremost, my ontological position does not allow reliability and validity criteria because I believe in subjective reality which does not have dependent and independent variable like objective reality. Secondly, my study adopts process questions: How do academic leaders experience to be entrepreneurial orientation? This question demands researcher to get involved with participants in the process in order to have answer of this question. Thirdly, my study demands natural setting rather than artificial setting or laboratory setting. The reliability and validity criteria do not fulfill the demand of natural setting. Finally, I want to produce narrative description rather than numeric summary and the organization and distillation of data that I perform in order to present a picture of the experience under study is essentially inductive reasoning process. The, nature of data and meaning making through inductive reasoning cannot be fulfilled by the reliability and validity criteria (Porter 2007).

All these aforementioned reasons and their underlying truths cannot be legitimized through concepts of reliability and validity. Here one question may be raised: What criteria do interpretative phenomenologists use in order to claim quality of their studies then?

I, as an interpretative researcher, claim to maintain the quality hallmarks for this proposed research by observing the decision trail imperatives considered fit for phenomenological research. Guba and Lincoln (1999) acknowledged that naturalistic research is sometime deemed untrustworthy in the ground of allegations posed by the positivists who preferred weighing the quality of research endeavor in terms of reliability and validity. As the shield in this debate the qualitative methodologists proposed the terms like credibility and trustworthiness. My proposed study being a phenomenological one required a bit different orientation that extended from the observation of normal quality standards considered suitable for generic qualitative researches. Therefore, along with aforementioned propositions, I in my study will maintain the rigor criteria generally agreed by prolific phenomenologists like van Manen (1997) and Langdrige (2007).

van Manen (1997) points out four major quality concerns in phenomenological study: orientation, strength, richness and depth. According to him, orientation is the involvement of researcher with the world of research participants and their stories. I, as a researcher, will address this with the prolonged engagement, careful attention to a study and the ways in which data are collected, analyzed, interpreted and documentation.

Strength, on the other hand, refers to the convincing capacity of the text to represent the care intention of understanding of the inherent meanings expressed by the research participants through their stories. To address this criterion, I will not impose my ideas while transcribing interview data taken from the participants. Richness is intended to serve the aesthetic quality of the text that narrates the meanings as perceived by the

participants. I document their experiences using quotation marks and creating block. For purpose I use member checking process as Teddlie and Tashakkori (2009) mention that it is a particularly powerful technique for determining the trustworthiness of interpretations and involves asking participants and other members of the social scene to check on the accuracy of the themes, interpretations and conclusions. If participants agree with the investigators' interpretations then evidence for the trustworthiness of the result is provided (p. 295). Depth is the ability of the research text to penetrate down and express the best of the intentions of the participants. I address this criterion by cross checking the experiences of the participants.

Langdrige (2007) mentions three components of quality standards in hermeneutic/interpretative phenomenology. They are: analytical rigor, persuasive account and participants' feedback. Analytical rigor for him is the attitude displayed by the researcher to pay attention to every case that either conforms or disconfirms the theme. Persuasive account for him is the quality of convincing the readers and its appeal to think about the personal experience for the reader on the light of what they read. Participant feedback on the other hand is quality trail to be used before reaching to the actual data collection. It helps the researcher best represent what is intended by the participants.

Firestone (1987) suggests another quality measure to enhance the quality thrust by interpretative researchers that is the application of standard rhetoric. It refers to the writing or reporting style of the research work. It can be maintained by writing, rewriting, editing the text many times to ensure that the text is right from the start to the end.

All of the above mentioned quality standards can be thought of as the extension of research process over a period of time, peer debriefing, use of other tests and artifacts, member checks, enhancement of verisimilitude through proper contextualization, consistency in the process of data collection and analysis, proper documentation and recording of the responses of the participants and going through a rigorous process of researching along with thick description and metaphoric narration.

Conclusion

The review of these journals and books makes it clear that constructivist paradigm advocates knowledge within the people under investigation not outside and individuals develop subjective meanings of their experiences. The purpose of research and researchers' ontological, epistemological and axiological positioning demand and determine the types of approach required for the research endeavor. My proposed study is based on constructivist paradigm and holds qualitative standpoint. Qualitative approach of inquiry is aligned constructivist paradigm and has several methods within it. They are; ethnography, phenomenology, case study and grounded theory and so on. My proposed study is

based on phenomenology. Phenomenology which has its disciplinary roots in both philosophy and psychology and is rooted in a philosophical tradition developed by Husserl and Heidegger is concerned with the lived experiences of humans. It is an approach to thinking about what life experiences of people are like and what they mean. The phenomenological research asks the questions: What is the essence of this phenomenon as experienced by these people? What is the meaning of the phenomena to those who experience it?

Within phenomenology also there are several traditions; out of them my study is based on hermeneutic phenomenological tradition as it is a holistic and poetic approach. It also reveals a depth and insight into human action and it is sensitive and reflective. It adopts, interview, observation and protocol writing as tools to data collection. For data analysis, several models have been developed by many hermeneutic phenomenologists. Ajjawi and Higgs (2007) model is the latest one and appropriate to my proposed study in order to interpret the lived experiences of the participants.

The criteria and methods like reliability and validity to assess the quality of a study in quantitative approach cannot be meaningfully applied in hermeneutic phenomenology because of philosophical and methodological differences between qualitative and quantitative traditions. There are many quality hall marks developed by many hermeneutic phenomenologists. van Manen (1997) points out four major quality concern: orientation, strength, richness and depth whereas Langridge (2007) mentions three components: analytical rigor, persuasive account and participants' feedback. These can be addressed through a rigorous process of researching along with thick description and metaphoric narration.

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Two case Studies: Analyzing the uptake of reinforced and incidental vocabulary amongst young immigrant learners introduced to the English mainstream primary school in the U.K.

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Abstract

Language teaching methodologies have generally accepted the notion that vocabulary teaching is more effective when the vocabulary is reinforced within the curriculum. However, since there are more debates on incidental vocabulary acquisition, the current study analyzes the uptake of reinforced and incidental vocabulary acquisition within the young immigrant learners introduced to mainstream education in the U.K. The research is based on two immigrant young learners who have migrated from China and the Philippines. The outcomes of this research suggest that the reinforcement of vocabulary within the curriculum across multiple subject areas in a meaningful way will influence the vocabulary acquisition effectively for students in all levels of English proficiency.

Key Words: Incidental vocabulary, reinforced vocabulary, mainstream education

Introduction

This research addresses whether the reinforced vocabulary teaching is more successful than the incidental vocabulary teaching when considering young immigrant learners introduced to the English mainstream education in the U.K. Throughout this article, the researcher uses 'EAL' to refer to 'English as an Additional Language,' and 'ELL' to refer to the 'English Language Learner,' as identified by Iddings & Jang (2008) and Mohan & Crutchley (2006) respectively.

According to the National Statistics, the total long term immigration to UK in June 2010 was 572,000. Further, ELL's in the U.K. primary schools now make up a significant minority: according to the latest data collected in June 2010, 16% of primary school children only in England have a first language known to be a language other than English and out of them the most frequent spoken language is Panjabi. From within this significantly large immigrant population, a considerable proportion of recent immigrant learners are in the

North of England, where this study is based. These ELL's include new arrivals, refugees, economic migrants from EU member states and elsewhere. It is necessary to understand the complex nature of identity and the complexity of these ELL's lives.

Vocabulary development in English learners has been the focus of numerous studies over several decades. According to Carlo & August (2004), successful vocabulary curricula increase children's word knowledge by approximately 300 words a year.

Relying on incidental vocabulary learning is even more problematic for ELL's than for their English only counterparts. Furthermore, as Carlo and August (2004) suggest, the vocabulary instruction for the ELL's would ideally combine direct teaching of words with incidental learning fostered by providing them with multiple opportunities in authentic contexts. As it is accepted by many researchers, learning vocabulary is an ongoing process that takes time and practice. It is not something students can spend time learning, memorizing and practicing. As Nation and Waring (1997) say, learners need to encounter new words several times in authentic contexts.

Therefore, to put this simply, reinforcement of vocabulary would allow the learners to put the new words into their long term memory. Further, vocabulary, like other aspects of language learning, can be facilitated when done through co-operative learning. Moreover, Nation and Waring (1997) acknowledge that learning new vocabulary through context and cooperative practice is very effective.

As Huckin and Coady (1999) claim 'incidental learning is a byproduct, not the target of the main cognitive activity' (p.182). Further, Joe (1998) describes incidental vocabulary learning as 'vocabulary learning which occurs without the specific intent to focus on vocabulary' (p.357). Moreover Krashen's comprehensible input theory (1982) says 'noticing' or 'attending' in second language learning improves the vocabulary knowledge of the learner.

Within the last few years in U.K, vocabulary has been viewed as an important aspect in language learning. Hence, the National Curriculum of England adapts the approach of "language across the curriculum" in which language is seen as playing a central role in all aspects of the learning process in primary schools (Commins and Swain, 1986). Moreover, the curriculum encourages the contextualized and integrated approach to teaching which proposes that learning vocabulary will help students increase their vocabulary through authentic interaction. (The National Curriculum for England, Key Stage 2, 2011)

The foundation of the U.K. Primary education system is strengthened through the use of integrated and multi-sensory teaching methods in order to ensure the smooth running of the curricula. Each half term, there is a new '*topic*' which introduces through the 'History' subject and then integrates with other subjects such as Music, Arts and

Craft, Cookery, Geography, Science, Literacy, and Dancing. This integration facilitates multiple opportunities for students to practice the topic-related vocabulary by reinforcement (Gibbons, 2002).

Participants

The participants deemed as suitable for the research, were selected by the head teacher of the school and. The two participants of this research are 11 years old: a Chinese girl (Karen)and a Philippine boy(Miles)studying in the same class. Their first languages are respectively Chinese and Tagalog. The Chinese girl gets individual language support from English as an Additional Language (EAL) specialist teacher for one and a half hours a week. The Chinese girl has been in the U.K. for ten months and the Filipino boy has been in the U.K. for five years and one month for July 2011.

Methodology

Despite the absence of studies relevant to this specific topic, a mixed method of data collection was selected in order to research the acquisition of vocabulary. To elaborate, the extent to which the participants comprehend and acquire the contextual meaning of a specified number of vocabulary items will be examined in this study. The tools of investigation are a pre-test, a post-test, class observation sessions and a questionnaire for the participants' parents. There were two participants, one is a recent immigrant to UK and the other one has been here for a considerable number of years. Research was carried out for approximately 70 days at a primary school in Northern England.

The study addresses the following hypothesis:

This project is based on the case studies of two immigrant learners introduced to the English mainstream primary education in the U.K. The research is carried out to test the assumption that reinforced vocabulary plays a much bigger role in relation to incidental vocabulary in the language acquisition of the said immigrant children.

Pre-test and post-test of vocabulary.

After considering reliability, validity, practicality and wash backs, the self-assessed test was designed and the list of vocabulary was divided into two sections as, '*Reinforced vocabulary*' and '*Incidental vocabulary*'. As Nation (2001) states that there should be at least 30 lexical items for a vocabulary test to be valid, this test consisted of 34 lexical items, and both reinforced and incidental vocabulary sections had 17 words each.

Two measures were employed in the pre-test and the post-test; one was a Yes/No self-assessed test. In this test, the researcher asked each individual to tick the words that

they knew. Secondly, the researcher asked them to say the word along with the meaning. The researcher's aim in using this method was to confirm whether they really know the words and to minimize the self-bias. Two recording methods were used in order to keep the reliability high. Video recording was used as a backup for the audio tapes.

Using Translations for testing the meaning

Furthermore, translation is one method of conveying meanings and according to Nation (2001) is no better or worse than the use of pictures, real objects and definitions. As he states, 'the greatest value of the first language in vocabulary testing is that it allows learners to respond to vocabulary items in a way that does not draw on second language knowledge which is not directly relevant to what is being tested' (p.351).

However, for one participant, the use of Chinese, her first language to test the word meaning was very effective and efficient and moreover, she was more relaxed and comfortable with it. With the help of a Chinese native speaker, these audio and video recorded sessions were translated into English and transcribed. The audio recordings were transcribed orthographically rather than phonologically and then analyzed using color-coding system. (Based on Nunan, 1992; Sinclair and Coulthard, 1992)

Parents' Questionnaire

Furthermore, as Duursma, et al (2007) found out, the language preferred for interaction with siblings has a much more significant effect on English proficiency than the language preferred by the parents. Moreover, they say '...the children who are highly proficient in English tend to come from households where child-child communication occurs in English,' (p.185). Therefore, the questions in the questionnaire cover all means of interactions with languages of these ELLs. (Appendix 2).

This questionnaire was designed by the researcher according to the needs of this research. Vocabulary can be acquired through reading, writing, listening and speaking. Therefore the questionnaire helped the researcher to understand the external sources of vocabulary input such as audio, video internet, books and extra work books designed for that age level, extra-curricular activities and extra tuition.

Class observations

In this research classes were observed four times and sessions varied from 40 to 82 minutes. The classes observed were one History lesson, one Art and Craft group work session, one Literacy lesson and a Numeracy lesson and field notes were taken during class observation sessions. The researcher is not a complete outsider for this class hence she has done some voluntary work with these children a year ago.

The participants deemed as suitable for the research, were selected by the head teacher of the school. The students were selected from the same class to increase the creditability of the research. The two participants of this research are 11 years old, and of mixed gender: a Chinese girl and a Filipino boy. Their first languages are respectively Chinese and Tagalog. The Chinese girl gets individual language support from English as an Additional Language (EAL) specialist teacher for one and a half hours a week. The Chinese girl has been in the U.K. for ten months and the Filipino boy has been in the U.K. for five years and one month for July 2011. The Chinese girl is the only child in her family and the Filipino boy has a younger brother who is seven years old.

In addition to the differences in relation to gender, nationality, and mother tongue, both participants have a big difference in their English language proficiency. According to the class teacher, the Filipino is in the fourth level in all subject areas in Key Stage 2, which is the expected level for his age, but the Chinese girl is in level three for all subject areas which is considered to be a low level for that age group.

Results and Analysis

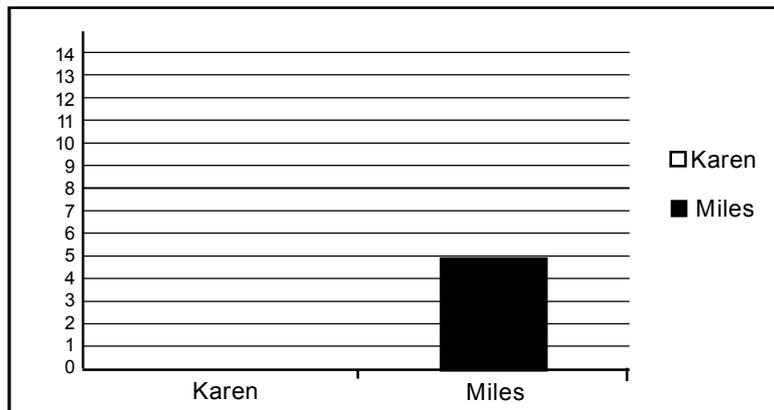
Results of the Pre-test and the Post-test followed by analysis

The researcher has used graphs and light pink and light blue are used respectively to represent Karen’s and Miles’s results on the pre –test , darker shades of both colours were used to represent the post-test respectively.

When looking at the data collected through the self-assessed test, it can be stated that Karen ticked none from the reinforced vocabulary list whereas Miles ticked 5 out of 17 words as he knew.

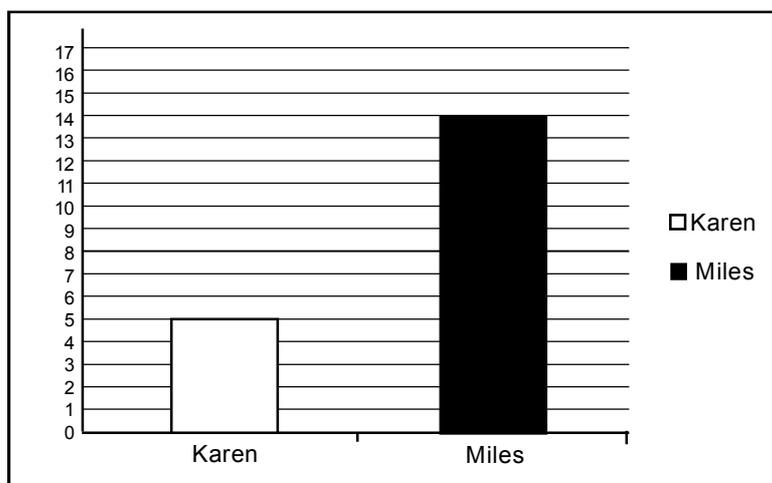
The following chart shows the result of both Karen’s and Miles’s reinforced vocabulary self-assessed pre-test data.

Table 1 Reinforced vocabulary pre-test self-assessed results



The post-test was conducted 68 days after the pre-test in the same room using the same vocabulary lists. On the post-test self-assessed section from the reinforced vocabulary list Karen ticked 5 lexical that she knew, and Miles ticked 14 lexical out of 17 that he knew. The following chart shows their post-test self-assessed data of the reinforced vocabulary test.

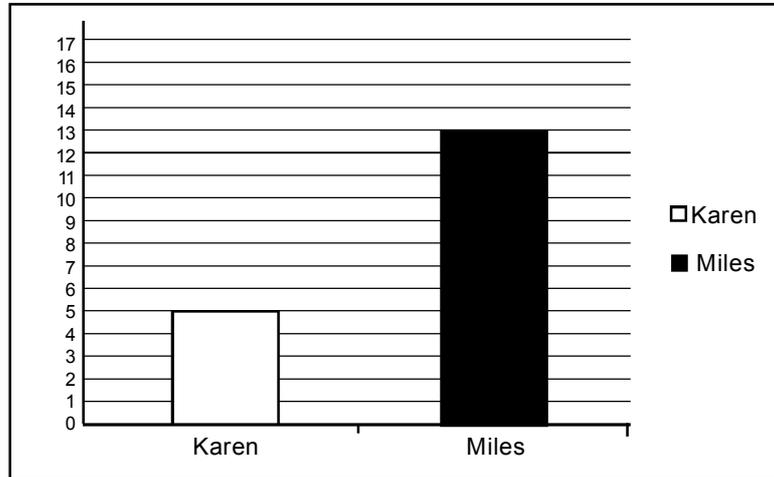
Table 2 Reinforced vocabulary post-test self-assessed results



When the researcher translated and transcribed Karen's data, it is clear that Karen has given direct dictionary translations for 'shelter' and 'explosion'. Moreover, 'gas masks' and 'bombing' were only partially acquired. Furthermore, for the 'air raid siren', the meaning given was fire alarm which is not the exact meaning from the Second World War context. Considering the vocabulary acquisition, even she has partially acquired those certain words there is a progress of her vocabulary acquisition.

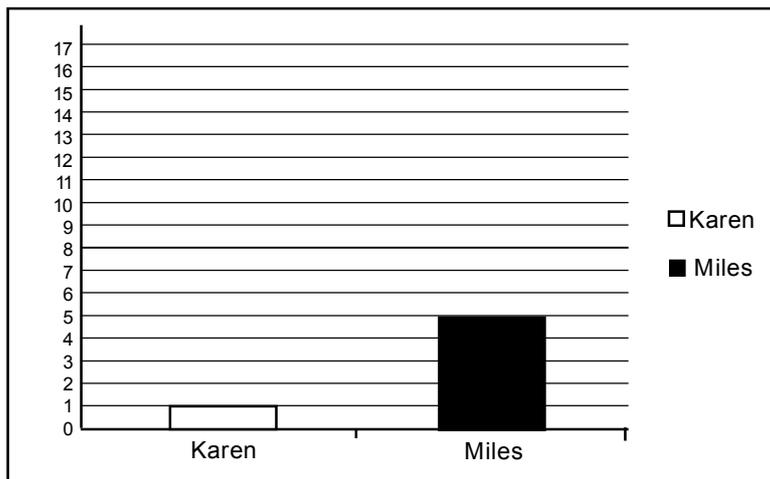
Even though Miles stated that he knew 14 words, after analysing the recordings, it becomes apparent that he has only given the meanings of 12 words correctly, and a partial meaning for *propaganda*. Therefore, the following chart explains the actual results of the reinforced vocabulary pre-test data considering the partially acquired meaning also as a part of acquired vocabulary.

Table 3 Post-test reinforced vocabulary test data after analysing the transcriptions



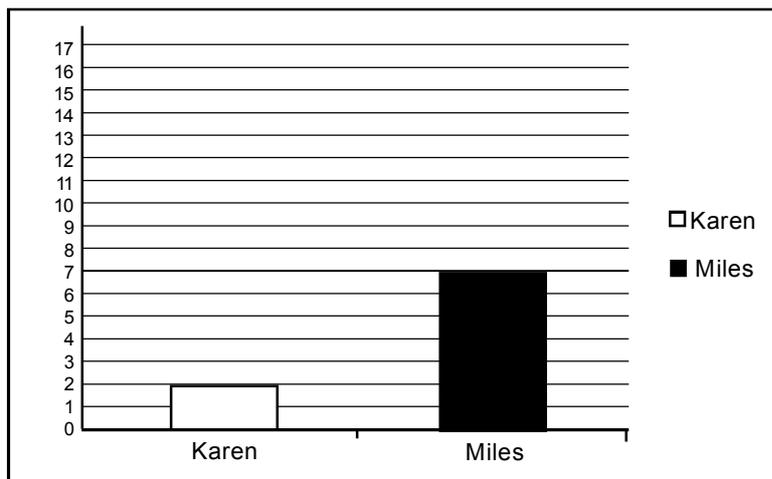
From the incidental vocabulary list, Karen admitted just a word as she knew and Miles admitted 5 words out of 17 as he knew at the pre-test. When the researcher analysed the audio recordings, Karen has just partially acquired the only word even she knew which was “*Hitler*”, and the meaning given was “a bad person”. On the other hand, Miles has given all the meanings correctly. The following chart explains the actual results of the incidental vocabulary pre-test.

Table 4 Pre-Test of Incidental vocabulary analysed results



At the incidental vocabulary post-test, Karen ticked 2 words that she knew and Miles ticked 7 words that he knew, and the following chart shows the results of the incidental vocabulary post-test.

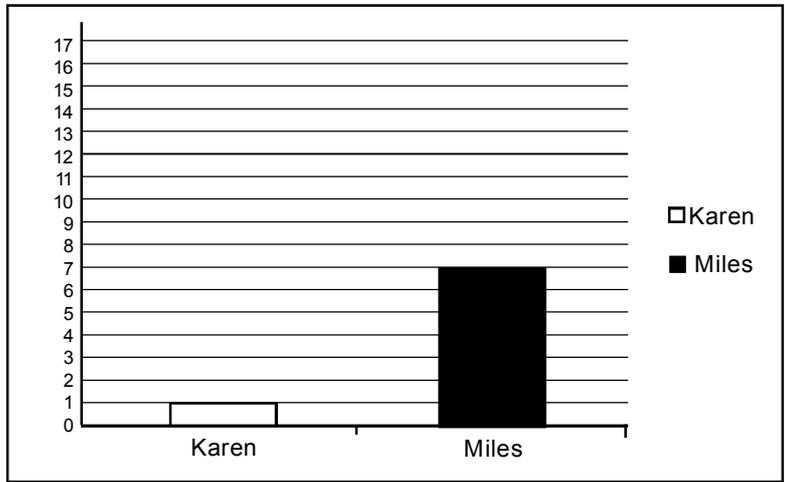
Table 5 Post-test of incidental vocabulary self-assessed results



When the researcher transcribed Karen’s audio recordings, it was clear that she has got the precise meaning of the word ‘*Hitler*’ but for ‘*Spitfire*’ she has given the meaning for ‘fire’ in Chinese. Even though the word ‘fire’ is within ‘*spitfire*,’ the meaning is completely different. Therefore, she has given the meaning only for ‘*Hitler*’ which was the only word she ticked at the pre-test of the incidental vocabulary. Even though she has not acquired any extra words from the incidental vocabulary list, the meaning she has given for the word ‘*Hitler*’ at the post test was more specific. Therefore, she has fully acquired the word ‘*Hitler*’ at the post-test.

Based on an analysis of the transcribed data of Miles’s, it can be said that Miles has truly acquired the words he ticked which means Miles’s post-test self-assessed data tallies with his audio recorded data. The following chart gives the actual results of the post-test incidental vocabulary test data.

Table 6 Incidental vocabulary post-test results after analysing transcribed data



As Gass (1999) states, intake for learning where vocabulary acquisition is conceived as multi-stage process and is clearly shown in Karen’s data as most of the vocabulary she has acquired through reinforcement of vocabulary in other subject areas, are partially acquired.

It could be considered that Karen is in the process of fully acquiring those words. This could be a vocabulary acquisition strategy unique to her. As it is shown on the following graphs Karen has not acquired much vocabulary from incidentally other than she fully acquired the word Hitler, where Miles has shown a progress on incidental vocabulary acquisition.

The following charts compare the results of the pre-test and the post-test incidental vocabulary acquisition of both participants separately.

Table 7 Results of Karen’s Incidental vocabulary acquisition

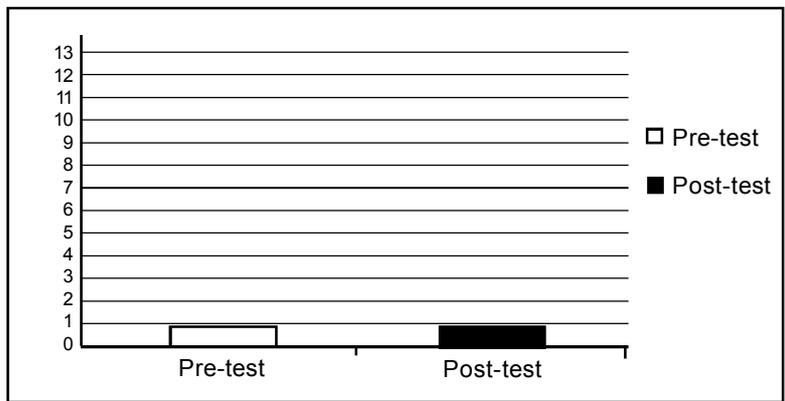
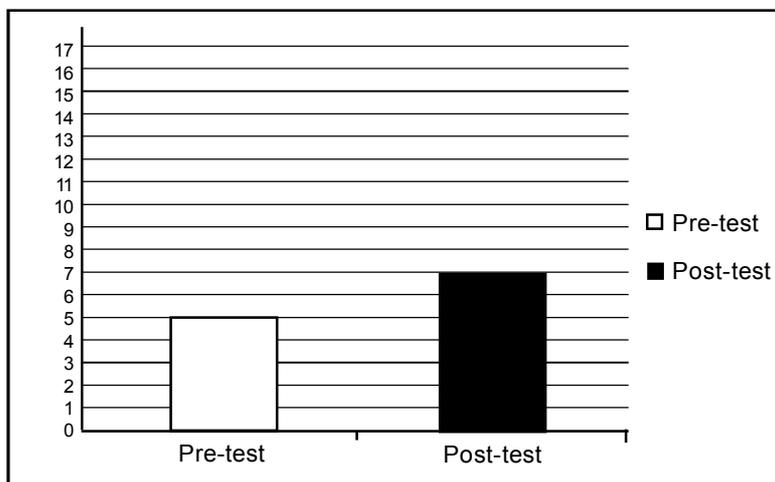


Table 8 Results of Miles's Incidental vocabulary acquisition



Moreover, the results of the pre-test and the post test of reinforced vocabulary given below, and there is a significant difference in the pre-test and the post-test results. It is clear that the reinforcement of vocabulary has been effective for the research participant's vocabulary acquisition.

Table 9 Karen's reinforced vocabulary pre-test and post-test data

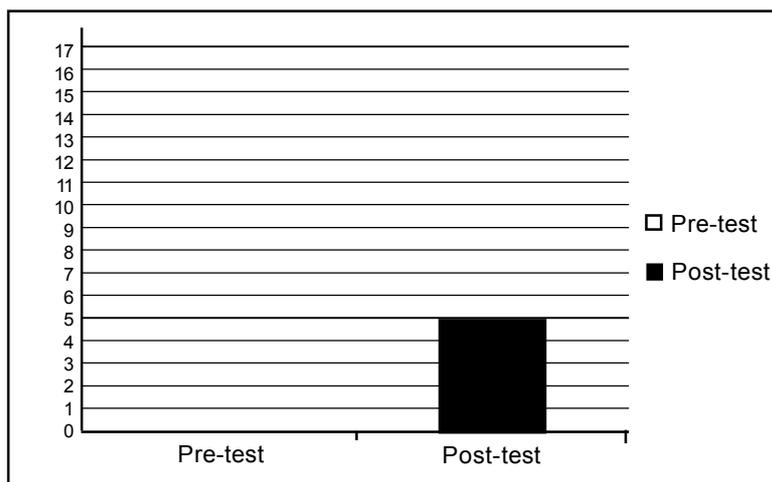
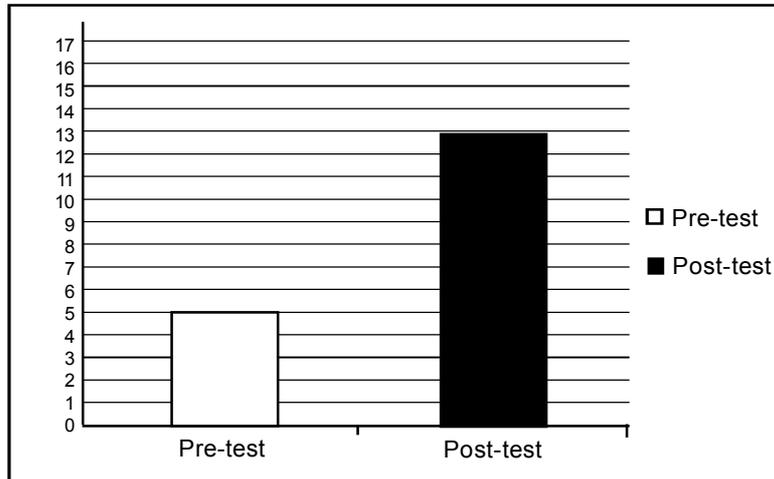


Table 10 Miles's reinforced vocabulary pre-test and the post-test data



The pre-test and the post-test being the main source of data collection, it is clear that reinforcement of vocabulary is has been more effective compared to incidental teaching.

Results of the class observation sessions

Structure of the class observations

As the main intention of the class observations as mentioned earlier, was to understand and clarify how the children received vocabulary input the most, and to make clear that they only get the incidental vocabulary through history lessons only. Field notes were taken during observation sessions and although it would have been better if the researcher could use a video recorder, due to ethical considerations, the researcher decided not to use any recording instruments. Further, as the researcher believes it is important in observation to concentrate as much as possible on what is not there, as well as what is there, the researcher went beyond to gather data by having informal small discussions and meetings with the class teacher and the EAL specialist teacher (Wood and Kroger, 2000).

On the first day of class observation, the researcher observed the very first lesson of the day which was a History lesson. The observed History lesson was on the Second World War. There were a few students who were really interested in that topic and out of them Miles was one. Karen looked very calm and quiet and did not contribute to the lesson. The teacher first tried to elicit the vocabulary related to the Second World War

and then wrote them down on the white board. The teacher used some pictures and video clips from 'You tube'. She gave the same attention to every student with no special attention to anyone. And also she asked the students about any family histories on the World War II and there were three children whose grandfathers had served the Royal army during the War.

The second observed session was with a different teacher who is a 55 years old female, who works three days a week as the Arts and Craft teacher at this school. At this session students were asked to make gas masks using paper cups, paper plates and masking tapes. The teacher used most words on the reinforced vocabulary list such as *gas mask, evacuation, bombing, explosion, and gas chamber*. The students were divided into five groups and most groups had four students each. During this session, Karen seemed to be more involved and she asked for clarifications from the teacher of the method of sticking the cup into the plate. Miles was as usual very co-operative. Further, Karen used the *words gas mask and bomb* during this session. At the end of the session, the masks made by Karen and Miles were as same as those made by other students and they seemed to be very enthusiastic and very involved during this session.

The third observed lesson was a literacy lesson taught by the class teacher. During the lesson, students seem to be more familiar with the World War II vocabulary and the teacher asked them to write a letter to their parents thinking that they were evacuated from the government and had to live separately from their parents. She asked them to use different names which were common during the War times and she wrote down few examples on the blackboard such as Tom and Elizabeth. Miles was confident in letter writing and he managed to finish on time with the other students whereas Karen did not do much on that exercise. The class teacher did not pay any special attention to Karen and she did not even ask for help from her peers. When the teacher asked the students if they have finished or not, she only said yes by covering her mouth with her right hand even though she had not finished.

On the fourth day of observations, the researcher observed a Numeracy lesson and it was the very first lesson after the lunch break. Miles was in the high level four for Numeracy which is outstanding but Karen was in the high level three which is the lowest level in that class and only two students were in that level including Karen. The researcher's main aim of observing the Numeracy lesson was to clarify whether the topic related vocabulary was being reinforced in this session or not. The lesson on this day of observation was mental math which was about decimal divisions which is not related to the history topic on that half term

During the informal talks the researcher had with the teacher, the teacher admitted that it would have been better to have a Classroom Assistant to help these ELLs and she referred to Karen especially, who is going through the transition period. For the purpose of clarification, whether the topic related vocabulary is reinforced in the withdrawal sessions, the researcher observed two withdrawal sessions with the EAL Teacher. These withdrawal sessions were 45 minutes each and two days a week and two students were with this teacher, Karen and another Polish boy.

In these sessions, Karen used to raise her hand for answers which was not common in the mainstream classroom, where she covered her mouth with her right hand when answering. Furthermore, this EAL teacher did employ praise more significantly and more often than the class teacher.

Further, there was a Second World War day at the school where students had to dress-up as characters from that era. The girls dressed in printed skirts and plain colour blouses with knitted cardigans. The boys were in long sleeved white shirts and three quarter trousers. They also wore knitted cardigans with knee length brown coloured socks. The Students put on their gas masks during the second period, and the fire alarms signalled for the children to evacuate to the forest area at the school. During this session vocabulary such as air raid siren, evacuation, gas masks and shelter were reinforced by teachers and students. Even though this was not a scheduled observation session, researcher took some field notes on this as well.

According to the small talks the researcher had with the class teacher, the class has been on a school trip to the Second World War museum park where both Karen and Miles had participated and they have had a chance to put on military uniforms which were used during the Second World War as well. Further, for the cooking lesson they have prepared a meal which was common during. According to the teacher, both participants had enjoyed them. Moreover, at the end of the semester, the class had performed a play on the Second World War and Miles had taken part in it as a soldier and Karen had been on the chorus.

Karen used to cover her mouth while talking which was not noticed in the small group work session and this may be a strategy she applies to cover her less confidence in speaking English or she may be shy to talk at the whole class environment. From the reinforced vocabulary post test results shows that she has acquired words that was used at the small group work session and the World War II day, which means more contextualized vocabulary input has been very effective on her.

Based on the above observations, the researcher has arrived at the following conclusions in relation to vocabulary acquisition of the two participants:

- Small group interactions especially the student to student interaction has been more effective for Karen, whose English proficiency level is low.

- Covering her mouth while speaking is unique to Karen. Whether this signifies a cultural practice within Chinese female students, where culture always links with language norms, or a personality trait (Cook and Newson, 2007), or a strategy employed by her to hide her low competence in English language speaking (Dorneyei, 2005) is debatable.
- The low frequency vocabulary used within the Second World War topic was difficult for a student who has been in UK only for ten months and who is going through a transition period. The teachers should consider this factor and provide extra help to Karen.
- The class teacher did not show any additional interest in helping these migrant learners even though they are less proficient in English and the ideal scenario would be to have a classroom assistant teacher to give special attention to these migrant students.

Results and analysis of Parent's Questionnaire

As it was stated beforehand, a questionnaire was given to parents in order to help the researcher to analyse the data. This questionnaire tried to explore the languages they use outside the school especially with parents, siblings and with friends. Further, the questionnaire gathered information of their previous language learning experiences and other extracurricular activities. As Karen's language proficiency is in a very low stage, she takes extra tuition on English Mathematics and Science two hours per week. Miles does not do extra tuition, but does some work books four hours per week. On the other hand, Karen does not have any friends outside the school but Miles spends more than two hours per week with his English speaking friends. As Krashen (1982) states that the vocabulary acquisition most of the time occurs by incidentally with which Lantolf (2003) agrees the time spend with the English speaking community counts a lot on these ELL's language proficiency. Furthermore Miles has had English education before moving to the U.K. for more than 2 years, where Karen did not have any exposure to English before migrating to the U.K. By comparing answers from both questionnaires, it is clear that Miles has more exposure to English even outside the school. English is his dominant language and the language he uses within the family. Further, their previous language exposure also had count on the differences on their proficiency levels hence Karen comes from an EFL (English as a foreign Language) country, whereas Miles is from an ESL (English as a second Language) country. As suggested by Cook and Newson (2007) it is the responsibility of the teacher to identify these ELLs previous language knowledge and teach them accordingly.

Discussion

Through gaining observational and questionnaire data and results from the pre-test and the post-test, there are significant differences in the performance of two participants of this research. This chapter is about the elicitations of the current research, limitations, and it will end with the conclusion.

First, the reinforcement of language is consistent with the notion that language is learned through meaningful use in a variety of contexts (Gibbons, 2002). Mainstream curriculum is the main provider of those contexts. The subject matter of the curriculum provides the contexts, and this is an effective way to teach low frequency words which is not in common use especially within the elementary school age group. Even though the two participants in this research are in two different English language proficiency levels, both show significant growth in acquisition of reinforced vocabulary post-test. As it was clear that one participant goes through the multi-stage process of vocabulary acquisition, as Huckin and Coady (1999) declare, it is necessary to meet certain words more than once and use them repeatedly to acquire the precise knowledge of them.

Secondly, situating vocabulary teaching within the curriculum area has the potential to support both vocabulary and curriculum learning, in a reciprocal way. Continuous recycling of concepts and vocabulary, help ELLs to learn through strategies such as cognitive strategy, social strategy and affective strategy.

Applying the preferred strategy consciously or unconsciously, the students have shown a significant progress in reinforced vocabulary test. According to Dörnyei (2005), all these ELLs have strategies unique to them. Karen and Miles also could be following their own strategies on vocabulary acquisition.

Thirdly, it is important to recognize the benefits to all culturally and linguistically diverse classrooms, and the curriculum developers should be concerned on the selection of topics which are not gender or culturally biased. As it is observed during this research, male students are more enthusiastic and especially the students with the history of grandparents who were involved in the World War II are more interested in this topic. According to Duursma et al (2007) there is a gender difference in English vocabulary acquisition and according to the observations, the World War II topic is more preferred by male students therefore, the topic would indirectly effect the vocabulary acquisition of these young learners.

Moreover, it is necessary to have an assistant classroom teacher to support the immigrant young learners, who come with English as Foreign Language (EFL) contexts and the ELLs who have no previous knowledge of the language. Even though there are cost factors to consider, it is essential to support the immigrant learners with low English proficiency on subject matters and language matters.

As it is observed by the researcher, most words used in the classroom are advance for these ELLs, according to Collier (1995) that “non-native speakers of English with no schooling in their first language take 7-10 years or more to reach age and grade-norms of their native English speaking peers” (p.03). If these ELLs get extra support and extra attention from a teacher during the class time, their subject performances would be more efficient and the ELLs who go through the process of multistage vocabulary acquisition, can speed up that process.

It is also necessary to co-operate English withdrawal sessions with the main classroom topics to help the ELL's to enhance the subject and the language knowledge. The researcher acknowledges that it is a difficult task for the English as an additional language teacher to co-operate the main classroom topics in to the withdrawal sessions due to their scheduled time tables and due to the levels of the learners. It is the responsibility of the local council to support with more funding and encourage schools to allocate more language teaching hours for these ELLs.

In addition to the factors mentioned above, there are significant differences of the use of home languages between these two participants. According to the parent's questionnaire, the language preferred by Miles to communicate with his parents and with his younger brother is English whilst on the other hand, Karen being the only child in her family speaks in her mother tongue, Chinese with her parents. Extra and Yagumar (2004) and Safford and Costley (2008) admit that, parent's, sibling's and peer's languages in communication do make a significant influence on ELL's second language acquisition. Even though the home language does not directly affect the tested vocabulary on this research, it indirectly helps the acquisition of these target words. It is better to encourage parents to use English at home to communicate with these ELLs at least at the transition period. It is accepted by the researcher some immigrant parents are not proficient in English especially the people who migrate under the asylum seeker visa category and EU immigrants. They have gone through the U.K boarder clearance without English proficiency tests. On the other hand most, non EU immigrants have to pass the English proficiency tests accepted by the U.K Border Agency before applying for the visa. Hence, a higher level of English proficiency could be expected from them. (U.K Border Agency, 2011)

Conclusion

This paper has presented a case study research analysing the acquisition of reinforced and incidental vocabulary amongst young immigrant learners introduced to the English mainstream education in the U.K. An analysis of this research has shown some significant differences in reinforced vocabulary acquisition. Furthermore, reinforced vocabulary acquisition is more effective than the incidental vocabulary acquisition.

The implications of this study are significant. The study has demonstrated the importance in reinforcement of vocabulary in other subject areas with the notion that, the language is learned through meaningful use in a variety of contexts. The subject matters of the curriculum provide those contexts. From a language teaching perspective, the curriculum can be seen as providing authentic contexts for vocabulary input. It is claimed in this research that multi context language focus and continuous recycling of vocabulary, help the migrant young learners' partial acquisition to full acquisition of the vocabulary. The researcher would like to claim that by providing authentic context, for meaningful and purposeful language use would facilitate effective vocabulary acquisition for young immigrant learners. And for that purpose, mainstream classroom provides the ideal context.

Furthermore, it is acknowledged by the researcher that implications of this reinforcement of vocabulary in other subject areas are only possible in the English mainstream curriculum. It is also valid for EFL and ESL countries where the curriculum is composed of two or more subjects are thought in English medium.

Limitations

This study was of course subject to many limitations. Firstly, since the researcher had to select vocabulary items from the list the class teacher provided, lexical in incidental vocabulary list and the reinforced vocabulary list, were not in the same lengths. Secondly, the incidental vocabulary list included a few proper nouns such as Pearl Harbour, Hitler and Dunkirk where the reinforced vocabulary list did not include such nouns. Lastly, the second part of the pre-test and the post-test which tested the meaning of words that the participants assessed as they knew, involves more vocabulary and grammatical knowledge other than the tested vocabulary.

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Appendix -1

Reinforced Vocabulary

1	Rationing	10	Blackout
2	Blitz	11	Holocaust
3	Air raid siren	12	Cannibal
4	Gas Masks	13	Troops
5	Shelter	14	Nazi
6	Gas Chamber	15	Jews
7	Trenches	16	Bombing
8	Propaganda	17	Explosion
9	Evacuation		

Incidental Vocabulary

1	Extermination	10	Dam Buster
2	Liberation	11	Surrender
3	Spitfire	12	Uprising
4	Doodlebug	13	Decade
5	Regime	14	20th Century
6	Allies	15	Pearl Harbour
7	Axis	16	Dunkirk
8	Invade	17	Hitler
9	Tripartite		

Appendix - 2

Research title - Immigrant young learners' vocabulary input

Name of the participant (Optional) -

Nationality -

1 What language(s) does your child use/speak at home?

With siblings.....

With Parents.....

With Friends.....

2 Do you meet with your own community often in UK?

Yes No

(Answer question 3) (Go to question 4)

3 How many hours per month do you spend with your community?

.....
.....

4 Has your child been studying anywhere in an English speaking country before he/
she moved to UK?

Yes No

(Please state the country below) (Go to question 5)

Country..... From.....

To.....

5 How long has she/ he been in UK?

From(D/M/Y).....

To(D/M/Y).....

6 Does he/she participate in any extra activities outside the school?

Yes No

(Please answer question 7) (Go to question 8)

7 What are the activities that your child participates outside the school and how many hours per week?

.....
.....
.....
.....

8 Does he/she watch English television channels at home?

Yes

No

(Please answer question 9)

(Go to question 10)

9 How many hours per week?

.....
.....

10 Does she/he do extra work books in English at home?

Yes

No

(Please answer question 11)

(Go to question 12)

11 How many hours per week does she/he do extra work books?

.....
.....

12 Has he/she learnt English anywhere before she/he moved to UK?

Yes

No

(Answer question 13)

(Go to question 14)

13 How long has she/ he been learning English?

.....
.....

14 Do you speak in English at home with them?

.....
.....

15 Does she/he have extra tuition for any school subject outside the school?

Yes

No

(Answer the question 16)

(Go to question 17)

16 Please state the subject and the hours per week below.

.....
.....

17 Does she/he spend time with her/his friends outside school?

Yes

No

(Answer the question 18)

18 How many hours per week?

.....
.....

Teachers' perception regarding inclusive education in Sri Lanka

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Abstract

The aim of this study was to investigate the perceptions and understandings of diversity and inclusive education held by teachers at ten schools in Sri Lanka. A purposive sampling strategy was adopted and individual, depth interviews were conducted with teachers who participated in the study. Interpretive analysis was done on the transcriptions of the interviews by making use of the constant comparative method of analysis. Coding and inducing of categories and themes helped the researcher engage with and make sense of the data that was generated. The key findings of this study showed that the teachers working at Schools have a good understanding and sense of what diversity. All the teachers who had participated in the study demonstrated a general understanding of the concept of inclusion which means accepting disabled children to the regular class. Overall, the majority of the teachers felt having an inclusive classroom was positive. Their attitudes are generally positive and they embrace diversity and see inclusive education as having many advantages. All the teachers identified the social benefits for students with SENs. All the teachers felt that child centred, activity based primary education system in Sri Lanka supported the concept of inclusive education and therefore that was easy to apply inclusive education in Primary classroom in Sri Lanka successfully. On the other hand teachers showed that year 5 scholarship exam is a major barrier for application of inclusive education in the primary classes as well. This means that the current education system has to be revised for the application of IE successfully in Sri Lankan primary classrooms. All the teachers clearly stated that the establishment of an inclusive education system will require appropriate school-based support services and a capacity building service.

Key words: diversity, inclusive education

Introduction

Inclusive education is gaining ground throughout the world; the drive towards inclusion is fuelled by a number of initiatives and treaties, including the UN Convention on the Rights of the Child (1989), the UN Standard Rules on the Equalisation of Opportunities for Persons with Disabilities (1993) and the UNESCO Salamanca Statement (1994). Together, these documents recognise the right of all children to education which is inclusive. One hundred and ninety three countries have signed the Convention on the Rights of the Child, with Somalia being the most recent in May 2002. Some countries have made significant advances towards promoting inclusive education in their national legislation. A central argument of the inclusive education movement is that students with disabilities ought to be educated as close to general education as possible. The international drive for educational change impacts on each country as it takes up its role in the global community.

Thus Sri Lanka's commitment towards inclusive education was heightened when it became a signatory to the Salamanca Declaration in 1994. This commitment was strengthened by the World Declaration on Education and Education for All, Dakar 2000 and Millennium Development Goals (MDG). Sri Lanka has taken steps to adopt the concept of inclusive education for special education and accepted the concept of inclusive education as policy through the Circular No 16 on admission of children to schools near their homes. The provision of education for special needs children along with other students in the regular classroom has been introduced. The Educational Reforms of 1997 that were introduced through all grades of primary schooling in conformity with the child friendly school concept, activity based learning, competence based approach and continuous assessment have been supportive of the education of students with special educational needs (SENs), in the regular school. As classrooms become more inclusive, major adjustments have been necessary to prepare teachers for more diverse student populations. Teachers' perceptions may influence acceptance of diversity. Thus the result of this study will be benefited for administrators to estimate teachers' understanding of diversity and inclusive education and make subsequent plans for training that can fill the gap. Therefore it is imperative to study the teachers perceptions and understandings of diversity and inclusive education.

The main aim of this research was to investigate the perceptions and understandings held by teachers regarding diversity and inclusive education.

The research question that directed this study was: What are the teachers' perceptions and understandings of diversity and inclusive education in selected schools?

Review of Literature

Diversity and Inclusive education

The notion of valuing diversity presents a departure from the categorical thinking that has previously resulted in the separation of particular groups. It suggests that everyone is different, everyone is unique and everyone is valuable for who they are (Benjamin, 2002). The term inclusion is interpreted in various ways, but today it is generally associated with a process intended to respond to the diversity among students (Blanco Guijarro 2008) Inclusion increases the diversity that exists in the classroom. In schools that value diversity – all students are valued as individuals so that the differences between them can be acknowledged without prejudice (Wedell, 2008). Inclusive schools seek to encourage collaboration among teachers for the purposes of teaching, planning and supporting learners (Laluvein, 2010; Soodak, 2003).

Teacher's perceptions and Inclusive education

Teachers in inclusive schools have to construct the meaning of inclusion for themselves as part of an overall cultural transformation of their school (Kinsella & Senior, 2008, p. 660). Teachers are able to expand their skills that make them more effective and well prepared educators for all students (Carter, 1991). Much research has found that teacher attitudes are essentially a deciding factor in whether inclusive education is successful or not (Lindsay, 2007). Teachers attitudes, values and beliefs affect the potential success of inclusive education. Teachers who are not in favour of inclusion may pass that discontent onto the students. Ultimately, an unfavourable attitude can undermine the confidence and success of the students. Conversely, teachers who support and believe in the inclusion model can provide special education students with confidence and a comfortable, and ultimately successful, learning environment (Scruggs and Mastropieri, 1996). So inclusive education requires a different school culture. One where teachers believe every child has potential and their attitudes regarding inclusive education and the changes that may need to take place in their school are positive. Teachers perceptions about the evolving inclusive classroom must be borne in mind (Whiting & Young, 1995). Teachers perceptions may influence their behaviour toward and their acceptance of students with disabilities (Hammond & Ingalls, 2003). Further, the attitudes of mainstream teachers may have some bearing on the success of inclusive educational programs (Van Reusen, Shoho, & Barker, 2001)

Research design

Descriptive, qualitative depth interviews were done. Descriptive studies aim to describe phenomena accurately rather than trying to speculate insights or prove hypotheses. The qualitative research interview seeks to describe and the meanings of central themes in the world of the subjects. The main task in interviewing is to understand the meaning of what the interviewees say. (Kvale, 1996).

Getting Teachers to Participate in the Study

Researcher selected ten primary classrooms from four schools as purposefully, from Piliyandala Educational Zone, in Western Province for the study. There were 74 primary classrooms altogether in the four selected schools and ten classrooms were identified as inclusive classrooms. Teachers were selected as participants who had experienced the phenomenon under study.

Academic background of teachers

The total number of teachers that participated in this study was ten. All the ten teachers were teaching in inclusive classes in the selected schools. In order to maintain their anonymity, the teachers were coded as Teacher No. 1, Teacher No. 2, Teacher No.3, Teacher No. 4, Teacher No. 5, Teacher No 6, Teacher No. 7, Teacher No. 8, Teacher No. 9, and Teacher No.10.

Table 1

Academic Backgrounds of Teachers of Inclusive Classes

Teacher No.	School	Experience Years	Grade taught	Qualifications	Training in SNE
1	A	12	2	BA, PGDE, Ed. Mgt.	None
2	A	11	3	Dip. In Primary Ed.	None
3	A	20	4	Tr. Certificate (Primary Ed.)	None
4	A	17	5C	BA	None
5	A	20	5E	B.Ed.	None
6	B	25	5	Tr. Certificate (Primary Ed.)	None
7	B	35	3	BA	Several workshops
8	C	15	3B	Diploma in Primary Ed.	Several workshops
9	C	25	3C	Tr. Certificate (Primary Ed.)	Several workshops
10	D	15	3	BA	None

Data generation

Semi-structured interviewing was chosen for this study as it allowed for much rich data to be collected. Individual interviews also provided an environment whereby 10 participants could talk openly about their personal understandings and experiences of diversity and how they perceive concept of inclusive education. Babbie and Mouton (2001) state that in a semi-structured interview, the interviewer has a general plan of investigation, but allows the conversation to progress in no specific order, although specific areas of interest are raised. All individual interviews were audio-taped and transcribed verbatim in to English and an initial coding tree was developed. Each interview was coded using this coding tree and adjustments to the coding tree were made as and when needed. Each teacher was given an opportunity to discuss and respond to questions related to the following: (a) experiences and understanding of diversity (b) personal beliefs, attitudes, expectations and perceptions of inclusion; and (c) the advantages and difficulties of inclusive education.

Once interviews were completed, transcriptions were done and the process of analysis began. Qualitative data analysis is the process researcher used to make sense of and explain the data that was generated during the research process. According to Geertz (cited in Terre Blanche, Durrheim & Painter, 2006, p. 321), the purpose of interpretive analysis is to provide a “thick description”, which refers to a thorough description of the “characteristic process, transaction and context that constitutes the phenomenon” being studied and described in rich language that is familiar and appropriate to the phenomenon. According to Punch (1998), the interview is a very good way of accessing people’s perceptions, meanings, definitions of situations and constructions of reality. He also states that it is one of the most powerful ways we have of understanding others (Punch, 1998).

Data Analysis

Qualitative data analysis is based on an interpretative philosophy. It is the process researchers use to make sense of or explain the data they have collected during the research process. Analysis in qualitative research is “a careful, detailed, systematic examination and interpretation of a particular body of material in an effort to identify patterns, themes, biases, and meanings” (Berg, 2009, p. 338). The method that researcher used was the constant comparative method. This method entails: familiarization and immersion, coding into themes, inducing themes, elaboration and interpretation and checking

Credibility

It is most important in qualitative research to provide enough rich description to contextualise the study, “such that readers will be able to determine the extent to which their situation matches to research context, and hence, whether findings can be transferred” (Merriam, 2002, p. 31). For the credibility of this study researcher used such description and interpretation of data.

Expositions of the findings

The findings will be presented according to the main themes uncovered during analysis. Participants were questioned about their daily experiences and understanding of diversity, their ways of working with it and their personal understandings of what diversity and inclusion actually means to them.

Teachers’ experiences and understandings of diversity

Most participants mentioned that diversity is an everyday part of life in Sri Lanka as Srilanka is multi cultural and multi religious country and therefore were quite normal in the classroom. Teacher No 1 stated that, “it is natural to be working in a diverse environment, that is what our communities are and country is. When talking to participants about what they actually experience in the classroom, they spoke mostly about the demographics of the school, mentioning that many different races, cultures, religions, abilities and socio-economic backgrounds and disability co-exist on the schools. There was definitely a sense from teachers that being exposed to diversity is the “normal” and that learners are encouraged to embrace their own uniqueness.

Comments from a few participants are included

“I see the diversity as such a gift in classrooms today. Children get to learn things they never would have before, things like tolerance, acceptance, information and facts about other languages and cultures. Now in our school we are teaching Tamil language also. Little by little children can understand and speak in Tamil now. The diversity is something we should all be using and appreciating in our teaching every day” (Teacher No 2).

“In my class there is one child who cannot talk properly. I do work very hard at trying to teach my children that his difference is what makes him unique and special. I try to let them realize that we all have our own strengths and weaknesses and we can learn from each other” (Teacher No. 3).

“Diversity means not everyone in the same race, gender or religion. Not everyone speaks the same language. There are differences in socio-economic levels, different life experiences, different cultural practices, different kinds of intelligence all around us – and this to me is diversity” (teacher No.5).

“Diversity is about accepting all different kinds of demographics, learning types and behaviors in the society” (Teacher.No.8)

“Diversity is kind of just to do with difference and including all different types of races or cultures or religions” (Teacher No 9).

“It is all about difference.” (Teacher No.10)

The majority of participants seemed to understand diversity as a version of difference. They each had their own unique way of explaining how they understood the concept, but the overall finding was that teacher’s understood diversity by often simply describing it as “difference”. Participants spoke of diversity in a positive way and these thoughts and understandings about diversity have far-reaching benefits for the teaching and learning that happens in the classrooms at Schools.

Teachers’ understandings of inclusive education

When speaking to participants about inclusive education, it was clear that each participant had their own unique understanding of what the concept meant. When looking closely at the content of the interviews, the main finding was that the teachers working at these schools believe that inclusive education is a way of including students with disabilities into the regular schools. The teachers highlighted that

“The way I understand inclusion and inclusive education is placing students with disabilities into the regular school”. (Teacher No.1)

“What inclusion is, is when children of diverse or different abilities are included in the regular mainstream school and catering for their individual needs”(Teacher No.3)

“Inclusion means brining disabled students to the normal school”(Teacher No.5)

“Placing disabled children in the regular class and accepting all children as children”(Teacher No.6)

“Opening normal schools doors to the disabled children”(Teacher No.7)

“Inclusion and inclusive education is the accommodation and space provided for learners with special needs to be accepted and taught in the regular school”(teacher No.10)

Teachers' feelings and attitudes towards inclusive education

An important subtheme that emerged in the process of analysis was regarding the personal feelings and attitudes towards inclusive education held by the teachers.

All the teachers mentioned that inclusion would help in the socialization of disabled students. They generally hold the belief that all learners benefit from being in a school that is inclusive.

“It is wonderful for the child with special needs who gets to feel included in a mainstream environment, socially and emotionally and academically and it is particularly great for mainstream children to be exposed to special needs learners and to learn to accept different people”(Teacher No.2)

“Inclusion means placing the students with disabilities in a regular class so that they could function better socially” (Teacher No.3)

“When disabled and non disabled children learn together disabled children can learn how other children behave, that is inclusive means socialisation” (Teacher No.4)

“When disabled and non disabled children are learning together in the normal school disabled children will automatically learn how other children eat, act in different situations I think inclusive means socialisation” (Teacher No.5)

“I think it is important for the normal children to be exposed to and also taught how to deal with the other children” (Teacher No.6)

Teachers No.1, No. 3, No. 4, No.7, and No. 8 have further mentioned that inclusion would help to remove attitudes such as a mere compassion towards disabled, the perception that disabled are non productive people, and the myths and stigmas about the disabled, In contrast with those, Teachers No. 6, No.9, and No.10, mere summarized the situation thus.”Inclusion means accepting all children as children” The strong statement expressed by Teacher No.7 referred to providing learning opportunities to all the children under the same roof. “Inclusion means placing disabled students with non-disabled students to give an opportunity to learn together under the same roof”

Teachers No.1, No.3, and No.4, explained the advantages of child centred education for the application of inclusive education in primary classes.

“Inclusive education works well, in our primary classes. According to the reforms of primary education teachers are conducting child centred education” (Teacher No.1)

“Now in our Primary classrooms teachers are conducting activity based child centred education. In other terms inclusive education means child centred education. Because of the child centred education system in Sri Lanka I think the application of inclusive education is easy” (Teacher No.3)

“When disabled children are in the classroom teachers have to teach these children in different ways. This is not a secret. According to the child centred education teachers have to do the same thing to the other students also. The application of inclusive education is easy because of this system. Now teachers are familiar with this system”. (Teacher No.4)

Teachers’ No.3, No.4, No.6, No.7, and No. 8, saw the teachers’ acceptability and willingness as being very important factors to implement inclusive education in the country. They have indicated

“If the teachers are not accepting these children it is doubtful but as you know, we are having a long history of caring for disabled people. Normally class teachers accept a child who comes to the class with some difficulties. Our cultural values are supportive of this concept and it is easy to apply inclusive education in our primary classes.” (Teacher No.3)

“As you know, higher officers can order, but if teachers refuse, this will not be a success. Whether higher officers order or not teachers welcome disabled children in to their classes. We can give evidence from our history. Teachers’ acceptance can be mentioned as a positive reason to apply inclusive education in our primary classes”. (Teacher No.4) These teachers’ attitudes were generally positive and reflected an acceptance of students with special needs into the regular class. These findings thus confirmed the findings of King and Edmonds (2001); Naylor (2002), Pudlas (2003); Martinez (2004) that ‘there is considerable evidence of general teacher support for the philosophy of inclusion’.

Moreover the above teachers mentioned that the personal attitudes were a major concern to the application of inclusive education in primary classes. This would suggest that teachers’ attitudes play a part in inclusion and teachers who had positive attitudes towards children with disabilities included those children in all aspects of their inclusive classrooms. Teachers No. 6 and 7 saw the strength of identification assessments which had been conducted at the time a child enters to the school. These teachers have expressed

“Identification assessments that provide information about the starting point in education and conditions of the individual special needs. This is the strength to apply inclusive education in our primary classes” (Teacher No.6 and 7)

“Because of the identification assessments at the beginning teachers can identify these children. Each teacher has to spend a two years time period to work with children. This is a good starting point to apply inclusive education in our country. I think before applying inclusive education we have to assess the children. Now already we are doing this”. (Teacher No.8)

The availability of facilities was another factor that Teachers No.2, No. 5, and No. 10 perceived as important in promoting application of inclusive education in primary classes. These teachers felt that they needed human and physical resources to meet the various needs of children with disabilities in order to have a successful inclusive classroom. “It is also hard to apply inclusive education without support in the primary classes” Teacher No.3 had a definite opinion of what made the application of inclusive education unsuccessful. This teacher stated that she needs supportive principals to make the application of inclusive education in primary classes. “I need the freedom to work in an inclusive class. So the principal’s cooperation is needed for this” Teacher No.8 had distinct thoughts about how the principal’s support is needed. “I definitely think administrative support is important and his/her being able to listen to the teacher and to give strategies and ideas, to observe and do everything that is necessary” It is noteworthy that two teachers (No.2 and 10) had stated that special schools are better, indicating that they did not have much belief on Inclusive Education. “It would have been better for the students with disability study in separate schools or classes, according to a special program so they could progress at their own pace” All teachers expressed their views regarding the year 5 scholarship exam.

“There are some practical issues, as we are preparing our students for the scholarship exam. As you know we are in a race”

“With this scholarship exam we can’t even think about inclusive education .If we want to apply inclusive education in our primary classes we have to think again about the scholarship exam. Parents are having high expectations regarding this exam. This will be a major barrier for application of inclusive education in primary classrooms”.

“When we admit students with disability into the regular school teachers have to devote more time with them. But there is big demand for the year 5 scholarship exam in our country. We are preparing our students for the scholarship exam from year three. This is a race. Teachers can’t focus their attention towards disabled children in this situation. I feel scholarship exam is a major barrier for application of inclusive education in Sri Lanka”.

This seems to be a major barrier for application of inclusive education in primary classes as mentioned by all teachers. Overall, the majority of the teachers felt having an inclusive classroom was positive and emphasized the available strengths and weaknesses in the existing primary education system in Sri Lanka for the application of inclusive education in primary classes.

Advantages of inclusion

All teachers expressed their views regarding the social integration on all students. The following quotations illustrate these findings

“Inclusion provides the students with disabilities to integrate socially and at the same time enables the others to become acquainted with diversity” (Teachers No.3 and 7)

“Students with special needs can learn better social skills with inclusion” (Teachers No.3 and 7)

In terms of social benefits, all teachers conclude that social benefits accrue to all students in inclusive settings, particularly in terms of social acceptance and development of friendships. Five teachers (Teachers No.1, No.3, No.6, No.7, No.8,) mentioned about how inclusion affects non disabled students.

“It encourages the non disabled students to learn how to accept those who are different”

“The regular children learn to accept diversity and to respect to each other. This is very important because otherwise our entire social values will decay”

“Good opportunity to be equal”

These teachers believe that inclusive education encourages the non-disabled students to learn to accept those who are different.

Teachers No.1, No.6, and No. 7 were concerned about the academic achievements of students with SEN in an inclusive class. Two teachers mentioned (Teachers No.6 and No.7) “in an inclusive class students with SEN can learn what others learn and can say, inclusion will promote their learning”

Teacher No. 1 felt that it is a good opportunity to study the same curriculum instead of learning subjects such as hand work, painting under a different curriculum in special schools and she stated “Opportunity to study the contents of the regular curriculum”

Three teachers (Teachers No. 4, No.5, and No.8) mentioned attitudes. Thus the teachers stated, “Inclusion is very good. There are fewer stigmas”

“Changing the stigma attached to disability”

Teacher No. 3 highlighted the development of friendships. “When students with SEN are learning in an inclusive class, friends are willing to support them. They are getting peer support”

All the teachers identified the social advantages for the students with special needs. These include prevention of stigma and improving self-image and self-esteem. Students without disabilities also experience developing awareness, tolerance and acceptance of diversity.

Disadvantages of inclusion

Some of the teachers noted different negative effects on inclusion such as slowing down the non-disabled students' learning, reduction of non disabled children's instructional time due to working and teaching with children with SENs which put more demands on the teacher.

"It is very important to pay constant attention for different needs and therefore others may be neglected".

"It will affect the other students learning as teachers have to pay more attention to the children with SENs"

Four teachers (Teachers No.2, No. 3, No.6, No.10) felt that students with SENs cannot keep up with the rest of the class academically and pointed this out as a disadvantage of inclusion "They cannot keep up with the rest of the class academically" Teachers No.7, No.8, and No.10 noted different negative effects on inclusion. They stated

"Teaching children in the same class with a variety of special needs takes more time and it affects learning of other students too".

"It will reduce non disabled children's instructional time".

"Inclusion will slow down the non-disabled students' learning".

It is significant that all these teachers highlighted the disadvantages that result for non-disabled students and mainly in the area of academic development.

Difficulties associated with teaching students with special educational needs in inclusive classrooms

The teachers were asked about the difficulties associated with teaching normal children with students with SEN. The teachers were concerned about inadequate training, lack of proper facilities, instructional difficulties, extra work load, behaviour management, and the number of students in the class. All the teachers said that these students have made their teaching a little more difficult because it involved bringing these students in, managing their behaviour, modifying instructional strategies and activities. "It's a little bit more difficult, but it makes it a little more challenging, too" Teachers disclosed that inclusion pushed them to focus on students and to individualize their instructions as much as possible using their practical knowledge. Teachers indicated that they modified their instructional practices to accommodate the needs of special need students. There was, however, considerable variation in the extent to which teachers espoused authentic instructional practices and held challenging expectations for both students with and without disabilities. As Teacher No.7 stated

“I think I get frustrated, also lot of teachers get frustrated. It’s not that we want to reject the students; we feel we won’t be able to meet their needs adequately and the biggest reason teachers burn out is that they feel it’s ineffective”.

All the teachers expressed their concern for insufficient time. “There is not enough time to spend with children with SENs and not even with normal students. Huge class size extracurricular activities and heaps of paper work”

“There isn’t enough time to work with children with SEN. We have over forty students in a class”.

Teachers No. 1, No.5, No.6, No.7, No.8 and No., 9 stated“Have difficulties in establishing communication with the students with SENs”

And more over teachers emphasized that they need to have knowledge about various disability types and their characteristics “it is very essential to identify the characteristics of disability types”.

Teachers also pointed out that it was difficult for them to do so, due to lack of knowledge regarding how to teach these children. Teacher No.6 described the situation thus “I think regular teachers are not too efficient and effective to teach SENs children. I don’t have much knowledge about how children with SENs should be taught. I don’t have enough knowledge so; I’d like to know more”.

More over all the teachers agreed “there are not enough inclusive education workshops for teachers”. However Teacher No. 8 who participated in two workshops mentioned “I think we need some education background regarding special education”. “I really feel that we need to know a little more about it; even though I think what I have done has worked well through workshops, I think that make a lot of difference”. Teacher No.1 said “we don’t have enough books to read in Sinhalese language regarding special education. If there are Sinhalese books at least we can read and enhance our knowledge”. Teachers asserted that these difficulties are faced by them.

The respondents were having a negative impact on teaching and learning, and these comments suggest the need to improve the knowledge and skills of teachers better to educate students with disabilities. One teacher voicing the concerns of others said “We want to get knowledge about teaching techniques for students with SENs and behaviour management techniques, and one of the most important things is to know how to use assessments” All the teachers felt that they needed more in-service training and education to teach in an inclusive class.

Some teachers are aware that there may be situations where the classroom is not meeting the needs of the SENs children. Four teachers expressed their views (Teacher No.1, No7, No.8, and No.10) of managing the behaviour of SENs children.

“It is very difficult to manage behaviour without knowing how to behave towards the students with SENs”

Moreover, all the teachers were stating that the schools have not necessary facilities for inclusive education. They stated that there were no resource room and there were no special educational counselling service and no special materials, tools from which the students with SENs could benefit in the school. They also mentioned toilets and other physical facilities are not in the schools. “The physical facilities of the schools must be accessible to the child for inclusive education”.

Teachers’ suggestions for effective implementation of IE

Teachers recommended that certain practices be implemented, such as (a) using a collaborative model offering more professional development on inclusion, (b) offering opportunities to visit schools that were moving towards inclusion, (c) providing better training for instructional adaptation with the modern equipments, (d) making assessment process more relevant to classroom application. All the teachers suggested the use of a teacher helper model with the assistance of the special education teacher and with the involvement of the parents. All the teachers’ emphasized that “we need a service which is not providing instructions to us. Occasionally advisors of the special education are coming to the class and give us instructions. Most of the instructions are related to the behaviour management rather than on how to modify the curriculum or our teaching methods to benefit children with SENs. We need someone to work with us taking equal responsibility.” The teachers also recommended that the number of students be lowered in an inclusive class. Wolery et al., (1994) researched this issue and concurred that ‘one area of concern was too many children in each teacher’s classroom’

Most of the teachers said that they need the help of a specialist to carry out inclusive education as an additional support service. It may be because the teachers in the study are less supported and depended on this; their level of getting information appeared to be low because of not providing such a service and due to a lack of knowledge on how to act and due to the difficulties that are faced in having students with SENs who need to adapt to the class. It is evident that the schools in Sri Lanka do not possess the suitable conditions necessary for inclusive education. Almost all the teachers who participated in the study felt the need for different types of knowledge relevant to inclusive education. The teachers are aware of the limitations of their level of knowledge and thus expressed their need to improve their knowledge about IE. In addition, teachers felt for a need to have practical hands-on experiences in inclusive classrooms to feel comfortable in teaching all children. This study also confirms the findings of Niemeyer and Proctor (2002) that ‘teachers need coursework on strategies for working with children who have disabilities.

Additionally, they need to have practical hands-on experiences in inclusive classrooms to feel comfortable to teach all children.

Conclusion

Teachers' experiences of diversity as well as their understandings of diversity were looked. Findings showed that the teachers are approaching diversity in such a way that encourages openness and learning in the classroom. The teachers have a good sense of what the concept means and they are consciously choosing to use diversity in the classroom to both increase awareness and encourage acceptance. Teachers have a clear sense of what diversity is and also how they wish to approach it. All teachers spoke of diversity in a positive way and their understandings and perceptions about diversity have far-reaching benefits for the teaching and learning that happens at Schools.

Inclusive Education, focussed on teachers understandings of inclusive education, their personal feelings and attitudes towards it, requirements for inclusive education and barriers that stand in the way of the effective implementation of inclusive education. All the teachers who had participated in the study demonstrated a general understanding of the concept of inclusion which means accepting disabled children to the regular class. They have emphasized only about the disabled students but had not mentioned about other categories of children who are left out of school due to other reasons such as poverty, displacement though teachers have a clear sense of what diversity.

Teachers expressed difficulties and possibilities associated with the application of inclusive education in the primary classes and they emphasized the available strengths in the existing primary education system in Sri Lanka for the application of inclusive education in primary classes. Teachers felt inclusion for the SEN students' socialization as advantageous but some also felt inclusion will affect the other students learning negatively and therefore, as a disadvantage of inclusion. The teachers were concerned about inadequate training, lack of proper facilities, instructional difficulties, extra work load, behaviour management, and the number of students in the class as the difficulties associated with using instructional strategies. But attitudes of teachers at Schools seem to be positive and all teachers interviewed believe that the benefits of inclusive education outweigh the disadvantages. They seemed to believe that inclusion was beneficial for all learners, but that it was only possible if certain elements were in place such as appropriate support structures.

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