Teachers' Pedagogical Knowledge for Enhancing the Curiosity of Primary School Children in North Okkalapa Township, Yangon Region

Khin Mar Ni[1], Theint Thiri Aung[2]

Abstract

The primary purpose of this research is to study teachers' pedagogical knowledge for enhancing curiosity of primary school children in the selected primary schools in Yangon Region. A total of 159 primary school teachers from selected primary schools participated in this study. The level of pedagogical knowledge and the variation of pedagogical knowledge of primary school teachers for enhancing the curiosity of primary school children were explored. Quantitative and Qualitative approaches were applied in this study. Questionnaire was developed by the researcher based on the related literature. Descriptive statistics, independent samples *t* test and One-Way ANOVA were employed for the analysis of quantitative data. In interpreting the MPC and IPC values, 0.00% to 49.00% is considered as *below satisfactory level*, the value between 50.00% to 74.00% *satisfactory level* and the value 75.00% to 100% *above satisfactory level*. The significant difference was not found in pedagogical knowledge of primary teachers grouped by academic qualification, age and teaching services. According to the total mean percent values, most of the primary teachers had *above satisfactory level* of pedagogical knowledge for enhancing the curiosity of primary school children. The level of teachers' pedagogical knowledge for enhancing the curiosity of primary school children was *above satisfactory.*

Key Words: Curiosity, Pedagogical knowledge

Introduction

Human beings are hardwired to be curious and being curious is a major activity of childhood and young adulthood (Johnson, 2010). Curiosity is at present in all humans, but at different levels. Due to the fact that curiosity is present at different levels, it is reasonable to conclude that higher levels of curiosity result in higher levels of learning. Thus, the teachers need to train children to have curiosity since they are in school age (Goldberg.s.et.al, 2013). For children to grow up as creative, productive, investigating and highly thinking individuals, they should be provided with opportunities to participate in educational programs from the early years on that valve and faster child curiosity. Curiosity also helps our children explore and probe how situations and scenarios of life could be different in their finer aspects. Curiosity is the most critical fuel for all-round development of your children. Asking probing questions, investigating all possibilities, and owning a sense of thrill and excitement will also help our children become wonderful inventors and innovators (Andre Looh, 2015).

The reason for choosing to do the research about the teachers' pedagogical knowledge in the primary school children is that the students at that age are the best stage to be trained. They are very curious to know everything at that age. Thus, the teachers in that grade should arouse their curiosity. Therefore, the main purpose of this research is to make a contribution in building the best education system and in developing our country.

[1] Dr., Lecturer, Department of Educational Theory, Yangon University of Education

[2] Dr., Lecturer, Department of Educational Theory, Yangon University of Education

The objectives of this study were as follows:

1. To study the level of the teachers' pedagogical knowledge for enhancing the curiosity of primary school children
2. To study the differences of teachers' pedagogical knowledge grouped by personal factors for enhancing the curiosity of primary school children

Research Questions

(1) What is the level of the teachers' pedagogical knowledge for enhancing the curiosity of primary school children?

(2) What are the differences of teachers' pedagogical knowledge grouped by personal factors for enhancing the curiosity of primary school children?

Theoretical Framework of the Study

Fostering curiosity and creativity in today's learners is a challenge. Not all students are highly curious. It becomes the job of the educator to recognize these differences and control the classroom or other learning environment to accommodate all learners. Instilling curiosity in students encourages their desire to learn (Marilyn P. A, 2003).

Vozza.S (2015) stated pedagogical strategies to support children's curiosity include curiosity as a hook, conceptual conflict, an atmosphere for questions, time, choices, curiosity-arousing elements, the right amount of stimulation, exploration, rewards and modeling.

Williams A.P (2014) said that curiosity is rooted in uncertainty; students become inquisitive when they don't know the answers to the questions they have. But being curious also means that they really want to know the answers; it involves willingness to pursue a question until a satisfying answer is found. National Science Foundation (2001) described humans are innately curious beings.

Daniel Berlyne (1950s) determined that curiosity can be aroused by external stimuli with the characteristics: Complexity, Novelty, Uncertainty and Conflict.

George Lowenstein (1994) suggested that the curious person is motivated to obtain the missing information to reduce or eliminate the feeling of deprivation. This states that, in order for curiosity to be present, the student must already possess some level of knowledge. Then, "to stimulate curiosity, it is necessary to make students aware of manageable gaps in their knowledge."

Research Methodology

Methodology and Sample

In this study, descriptive research design was used. There are 45 Basic Education Primary Schools in North Okkalapa Township. Among them, 11 primary schools were selected as the sample by using Random Sampling Method. A total of primary teachers participated in this study was 159.

Instrumentation

The questionnaire was divided into two parts. The first one was demographic information concerning gender, age, academic qualification, teaching service (years) and training courses they had taken. The second one includes (28) true-false items, (8) multiple choice items and five open-ended questions. Altogether is (41) items.

Findings

Quantitative Findings

For quantitative study, the percentage of teachers who responded the correct answer was revealed by the values of IPC (Item Percent Correct) and MPC (Mean Percent Correct).

According to the findings on the level of teachers' pedagogical knowledge for enhancing the curiosity of primary school children (true-false items), the overall average percentage of teachers who gave correct response was 81.43%. So, it can be noted that 81.43% of teachers who have knowledge for enhancing the curiosity of primary school children. (See Appendix-1)

According to the findings on the level of teachers' pedagogical knowledge for enhancing the curiosity of primary school children (multiple-choice items), the overall average percentage of teachers who gave correct response was 83.01%. So, it can be noted that 83.01% of teachers who have knowledge for enhancing the curiosity of primary school children. The item with the lowest percent was item (5) and it can be noted that only 42.1% of the participant teachers had knowledge concerned with this item. The items with the highest percent were item (6) and (8) and it can be noted that 91.2% of participant teachers had knowledge with regard to those items.(See Appendix-2)

Table(1) Number and Percentage of Teachers Showing their Level of Pedagogical Knowledge for Enhancing the Curiosity of Primary School Children

(N=159)

No.	Scoring	Number of Participant Teachers	Percentage of Participant Teachers	Level
1.	0.00%-49.00%	0	0%	Below satisfactory
2.	50.00%-74.00%	30	18.87%	Satisfactory
3.	75.00%-100.00%	129	81.13%	Above satisfactory

Scoring Direction: 0.00%-49.00% = Below satisfactory, 50.00%-74.00%= Satisfactory, 75.00%-100.00% = Above satisfactory

Table(1) indicates that most of the participant teachers have *above satisfactory* level of pedagogical knowledge for enhancing the curiosity of primary school children.

Findings on the Variations of Teachers' Pedagogical Knowledge for Enhancing the Curiosity of Primary School Children Grouped by Personal Factors

Table(2) Mean, Standard Deviations and Mean Percent Values Showing Teachers' Pedagogical Knowledge for Enhancing the Curiosity of Primary School Children by Age

(N=159)

Variable	Group	N	Mean (SD)	Mean Percent Value	Level
Pedagogical Knowledge	Up to 40	26	30.27 (3.29)	84.08%	Above Satisfactory
	Over 40	133	29.94 (2.93)	83.17%	Above Satisfactory

Scoring Direction: 0.00%-49.00% = Below satisfactory, 50.00%-74.00%= Satisfactory, 75.00%-100.00% = Above satisfactory

According to the table (2), it can be noted that (up to 40 years) of age group was higher pedagogical knowledge than (over 40 years) of age group. According to Independent Samples *t* Test Result, there was no statistically significant difference in the pedagogical knowledge scores between the primary school teachers grouping by age.

Table(3) Mean, Standard Deviations and Mean Percent Values Showing Teachers' Pedagogical Knowledge for Enhancing the Curiosity of Primary School Children Grouped by Academic Qualification

(N=159)

Variable	Group	N	Mean(SD)	Mean Percent Value (%)	Level
Pedagogical Knowledge	Undergraduate	4	28.75 (4.43)	79.86%	Above Satisfactory
	B.A,B.Sc	153	29.99 (2.95)	83.31%	Above Satisfactory
	B.Ed	2	32.5 (2.12)	90.28%	Above Satisfactory

Scoring Direction: 0.00%-49.00% = Below satisfactory, 50.00%-74.00%= Satisfactory, 75.00%-100.00% = Above satisfactory

According to the mean values, this finding shows that the teachers who got B.Ed degree had more pedagogical knowledge for enhancing the curiosity of primary school children. According to One-Way ANOVA Result, there was no statistically significant difference among the scores of teachers' pedagogical knowledge for enhancing the curiosity of primary school children grouped by academic qualification.

Table (4) Mean, Standard Deviations and Mean Percent Values Showing Teachers' Pedagogical Knowledge for Enhancing the Curiosity of Primary School Children Grouped by Teaching Services

(N=159)

Variable	Group	N	Mean(SD)	Mean Percent Value (%)	Level
Pedagogical Knowledge	Up to 20	33	30.39	84.42%	Above Satisfactory
	Over 20	118	29.87	82.97%	Above Satisfactory

Scoring Direction: 0.00%-49.00% = Below satisfactory, 50.00%-74.00%= Satisfactory, 75.00%-100.00% = Above satisfactory

According to Independent Samples *t* Test Result, there was no statistically significant difference among the scores of teachers' pedagogical knowledge for enhancing the curiosity of primary school children grouped by teaching services.

Qualitative Findings

Responses of Open-ended Questions

Q (1) How do you understand the term "curiosity"?

Most of the teachers said that desire to know something that they haven't known (N=101, 63.52%), asking questions that the children want to know and searching for the answer themselves (N=28, 17.61%), children's potential to learn something new things and builds confidence in the ability to learn and grow (N=9, 5.66%), desire for acquiring new knowledge (N=9, 5.66%), desire to learn something whether right or wrong and the desire to explore more. (N=6, 3.77%), children's intrinsic motivation that has potential to enhance their learning (N= 3, 1.89%), heightened state of interest in the children's mind (N= 3, 1.89%).

Q (2) Describe the fact that can fade the curiosity of the children.

Most of the teachers said that fear, Threatening and Anxiety (N=67, 42.14%), disapproval and absence to offer safety to try new things (N= 52, 32.70%), afraid to be wrong (N= 4, 2.51%), not giving the opportunity to ask questions (N=26, 16.35%), teachers who do not explore the interests of the children (N=6, 3.77%), boring (N= 2, 1.26%), teachers and parents who are not patient to listen to their experiences (N= 2, 1.26%).

Q (3) What are the ways to develop the curiosity of primary school children?

Most of the teachers said that telling the new story, showing the pictures that are related to the lesson that they haven't seen (N=20, 12.58%), telling the student to explore their natural surroundings (N=26, 16.35%), providing a chance to manipulate and explore objects relevant to what being studied (N=51, 32.08%), asking a lot of questions (N=15, 9.43%), praise the children by showing their new discovery, explorations and the questions that they can answered (N=20, 12.58%).

Q (4) State the teaching methods used in the classroom to get fun of the children.

Most of the teachers said that group discussion and Group competition (N=70, 44.03%), teaching by reciting poems, music and storytelling (N=32, 20.13%), teaching by doing performance of the story and using pictures (N=28, 17.61%), starting the lesson with an interesting question or statement (N= 9, 5.66%), giving group work to explore school environment and home environment and present the findings (N=9, 5.66%), Child-Centered Approach (N=6, 3.77%), making time for open-ended activities by using their own imagination (N=5, 3.14%).

Q (5) What are the characteristics of curious children?

Most of the teachers said that ask a lot of questions and find the answers of the question themselves (N=51, 32.07%), want to know everything and welcome surprise in their lives (N=28, 17.61%), very active instead of being passive (N=25, 15.72%), supportive, sharing and working together (N=20, 12.58%), aren't afraid to do everything and have confidence (N=15, 9.43%), aren't not afraid to be wrong and learn from their mistakes (N=10, 6.29%), want to be experiment by using five senses (N=10, 6.29%).

Conclusion

In investigating the level of teachers' pedagogical knowledge for enhancing the curiosity of primary school children, most of the participated teachers have high level of pedagogical knowledge for enhancing the curiosity of primary school children in because there is no one in *below satisfactory level.*

In concerning teachers' pedagogical knowledge for enhancing the curiosity of primary school children, teachers who are (up to 40 years) of age, teachers who got B.Ed degree, teachers who are (up to 20 years) of teaching services had the highest pedagogical knowledge for enhancing the curiosity of primary school children.

In true-false items, less than 50% of the participant teachers did not know that "Primary school children should be asked only Yes or No questions"; "The teacher should avoid asking difficult questions that have more than one answer". "To promote curiosity of primary children, only the teachers should held objects to children". So, they have little knowledge for this area.

In multiple-choice items, less than 50% of the participant teachers did not know that "the type of question that should commonly ask to children". So, they have little knowledge for this area.

Marilyn (2003) said that create an atmosphere where students feel comfortable about raising questions and where they can guess their own hypotheses through discussion and brain storming. Not only does this foster curiosity but it also helps to build confidence. Quality questions are a vital medium for curiosity. Good question contains "why", "what if" and "how". Myhill (2006) said that the teachers' job is to take the spirit of inquiry further with the right kind of questions (Why?, How? What if?, What makes you see that?, What do other think?, What if I said the opposite?, Can you justify that?, Can you say that or do that differently?, Is there another way? Do you agree?"). Vozza (2015) said that curious children ask questions that start with "how", "what", "when", "where" and "why". They stay away from questions that can be answered with a yes or no. This creates openness for the person who is being asked and for the person who is asking.

Therefore, teachers should ask "Why", "How" questions to develop primary school children are critical thinking skills. Berlyne (1960) and James (1890) said that curiosity is the desire for acquiring new knowledge and new sensory experiences that motivates exploratory behavior". Instructional Leadership (2006) described for young students, the chance to manipulate and explore objects relevant to what is being studied may be the most effective way to keep curiosity stimulated. Therefore, the teachers should give the children a chance to manipulate and explore objects relevant to their lessons.

In comparing the age group of the teachers, the total mean percent value for (up to 40 years) of age group was 84.08% and for (over 40 years) of age group was 83.17%. Therefore, it can be noted that (up to years) of age group was higher pedagogical knowledge than (over 40 years) of age group.

In comparing the academic qualification of the teachers, the pedagogical knowledge of group of teachers who got B.Ed degree was the highest pedagogical knowledge among those groups.

In comparing the teaching service of the teachers, it can be said that pedagogical knowledge of group of teachers whose teaching services was (up to 20 year) was higher than that of a group of teachers whose teaching services was (over 20 years).

It was found that most of the old services teachers may be over 40 years of age. According to their age and teaching services, they could have pedagogical knowledge for enhancing the curiosity of primary school children. But, there could be other factors such as family problem, health and pressure in work. Thus, they have less knowledge than the group of teachers who are (up to 40 years) and (up to 20 years) of teaching services.

It was found that there was no significantly difference in pedagogical knowledge between graduate and undergraduate teachers. But, according to the mean percent value, the teachers who are graduated have more knowledge than the teachers who are undergraduate. Thus, academic qualification can slightly influence on the teachers' pedagogical knowledge for enhancing the curiosity of primary school children.

Personal variables such as age, academic qualification and teaching services have no influence on pedagogical knowledge of primary school teachers participated in this study.

Primary school teachers should be given more training and knowledgeable books for enhancing the curiosity of upper primary school children. They should be invited to attend seminar and work-shop to enhance the curiosity of upper primary school children. Moreover, school principal should support many books about curiosity to their subordinates. They should provide the books in the library.

Moreover, primary school teachers should discuss to share experiences, teaching methods and new articles that are related to enhance to increase the curiosity of their children. And, they should do well-prepared lesson plan to align with the learning objectives.

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