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Teaching Practices of Mathematics Teachers in Selected Public and Private Elementary Schools

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ABSTRACT

Teaching practices comprise instructional teaching principles and methods. Instructional teaching method depends mostly to the skill and information that is found or influenced by the enthusiasm of the teacher. This study was conducted to determine teaching practices and problems encountered in the public and private elementary schools. Further, it sought to find out the following: a) mathematics teachers' socio-demographic profile; b) their usual teaching practices; c) the problems they encountered; d) the trainings they need; and e) the training plan for Mathematics teachers. Descriptive research design was used in the study. Data were collected from the 15 participants. They were the selected elementary Mathematics teachers. Survey questionnaire was utilized to find out the demographic profile for the teachers, the usual teaching practices, the problems encountered and the training needs assessment. The data gathered were summarized, translated, analyzed and matched with the result of the focus group discussion. It was found out that lack of more comprehensive trainings among teachers with the new trends of teaching methodologies and strategies and insufficient resources and funding; negative views about seminars and trainings and the scarcity of trainings conducted within their reach and capacity were revealed in both focus group discussion and in the results of the

survey conducted. Based on the results, the design was formulated to address the problems as identified. The researcher recommends that school administrators should utilize the training design proposed.

Keywords **-** Mathematics education, demographic profile, training design, teaching practices, teaching methodologies, descriptive design, Philippines

INTRODUCTION

Mathematics teacher in the present is experiencing key changes not only in what mathematics content they teach, but also in the way they teach. Knowing that Mathematics consisted of ideas needed to be memorized or mastered relatively by group of students who were taught using a lecture method. Nowadays teachers teach more demanding mathematics to various audiences with the use of active learning approaches made to increase understanding. This is a great dispute with the National Council of Teachers of Mathematics (NCTM) (Dickey, 1997). In the field of education, every teacher should possess a very wide range of perceptive of a concept to be able to significantly share the idea to the students. Studies dealing with the areas of difficulty in mathematics assume that only teachers have the knowledge and students are the only parties having troubles (Levenberg & Ophir, 2001).). On the other hand, in a study made by Lawrenz (1986) about in-service elementary school teachers' knowing of some physical science concepts, it was revealed that as some of the errors committed by teachers were due to lack of content knowledge, others were a sign of serious misconceptions. So, teachers, similar to any other learners, do carry on some problems and misconceptions.

In Great Britain, pupils are lagging behind in Mathematics compared with other countries because there are no enough primary school teachers have a proper grasp of the subject. There are less mathematically capable teachers in primary school. The crisis means many of the pupils depart primary school without receiving to grips with the fundamentals (Haris, 2012).

Currently, the educational system of the Philippines is faced by some issues that need to be addressed in order to build up the delivery of education to the most number of the population. The educational system of the Philippines in the present is faced by some issues that need to be answered in order to develop the delivery of education to the most number of the population. One of this is the quality and ease of access of education to its stakeholders. Unquestionably, the Philippines government, despite its insufficiency of giving some basic services to

its citizens, is doing its best to supply the essentials of basic schooling to its people for free to give quality education to all learners. However, with the different struggles facing the public schools, its instruction is delayed. Even public school teachers are competent to teach. It was revealed that the shortage of instructional materials, inadequate facilities and lack of training for professional growth hindered them to execute at their best. Private schools also experienced the same problem. Private schools have to exert more endeavours to encourage a good number of enrolments to assure their survival (Durban, 2012).

In Davao City, the poor performance of Elementary pupils in the National Achievement Test it was observed in the past couple of years. According to Sunstar Davao (2011), Davao City ranked 151st in the National Elementary Achievement Test in the same subject. Furthermore, it was stated that a child aptitude for math is 12 percent inherited, and the rest is from the environment - their teachers.

Based on the above mentioned situations the poor performance of the students in the elementary level could also be attributed to how the teacher teaches them which refers to the teaching methodologies and strategies. The main concern therefore, is the teachers. Hence, the researcher was prompted to consider identifying the problems they have encountered including their common teaching practices then further consider results as a basis for identifying an intervention to solve this problem.

OBJECTIVE OF THE STUDY

The study aims to identify training program needs of elementary Mathematics teachers.

METHODOLOGY

The study made use of the descriptive research design to identify the common teaching practices and problems encountered by the elementary Mathematics teachers. The informants in this study were the selected elementary Mathematics Teachers. They were from the different public and private elementary schools of the first congressional district, Davao City. Specifically, as informants of the survey, 15 teachers, five each from the three selected public and private elementary schools of the first congressional district, Davao City. Furthermore, six (6) other from public and 6 from private school teachers were invited to

attend a focus group discussion. Hence, there are 30 informants for the study and 12 for the focus group discussion with an overall of 42 informants. The data gathering instrument that was used in this study is consists of four parts namely; the teachers' demographic profile, usual teaching practices checklist, problems encountered checklist and an open-ended question to identify the training needs. The second part which was a checklist used to determine the usual teaching practices of Mathematics Teacher. The checklist has two parts; the first part is a checklist for teaching methodology practices, and the second part is a checklist for teaching strategies practices.

RESULTS AND DISCUSSION

The Socio-Demographic Profile of the Mathematics Teachers in Public and Private Elementary Schools

Table 1. Responses of key informants from the survey questionnaire about the Socio-demographic profile of the mathematics teachers in the public and private schools

Profile	School Type			
	Public		Private	
	Mean	Descriptive interpretation	Mean	Descriptive Interpretation
Distance from home to school	4.1333	3.1 km to five kilometers	3.9333	3.1 km to five kilometers
Monthly Income	3.7333	Above 20,000 up to 25,000	2.8000	Above 15,000 up to 20,000
Age	4.9333	40 to 44 years old	3.3333	35 to 39 years old
Educational Attainment	2.4667	With masters' degree	2.4667	With masters' degree
Number of Teaching Years	3.6000	15 to 19 years of experience	2.4667	10 to 14 years of experience

As observed, at an average, the distance of schools from home is similar for both the public and private school teachers which range from 3.1 kilometers to 5

kilometers. Educational attainment for both groups of teachers was also the same which is at least holders of master's degree program. From the table, it could be seen that distance from home to school and the educational attainment, at an average is the same form both groups, the private and public school teachers which imply that the two factors will never affect the differences about their views in line with the teaching practices of mathematics teachers. The factors that would probably have an effect on their responses would be ages, number of years in teaching experiences and their monthly income.

Public school teachers also have a tendency to stay longer in service than those in the private as implied by their number of years of teaching experience in the school which could be brought about by their monthly income in which the public school teachers got higher income compared to those in the private schools. The difference between their monthly incomes is almost P5,000.00 (114 USD). That is, 20 to 25 (455-568 USD) thousand pesos monthly income for public school teachers and 15 to 20 thousand pesos only for the private school teachers. The average age of teachers from the private schools ranges from 35 to 39 years old while for public school teacher is from 40 to 44 years old. At an average, the respondents were found to be teaching at the grade five level with average teaching years of experience as 15 to 19 and 10-14 years for the public and private school teachers respectively.

The socio-demographic profile of teachers can be associated with Maslow theory of a need hierarchy which proposed that people have higher-order and lower-order needs. In Egypt, according to Sabry (2010) the significance of pay increase goes afar its impact on the income of public school teachers. Pay increase for professional workers, such as teachers, is also pertinent to the psychological theory regarding fulfilment and motivation. Several psychological theories sought to know the basic configuration of human needs as they related to the workplace.

The Common Teaching Practices of Mathematics Teachers in the Public and private schools.

From table 2, it could be observed that the most common methods considered to be often used by public and private school teachers are the lecture method, learning by doing and problem solving.

Table 2. The common teaching practices of mathematics teachers in the public and private elementary schools of the First Congressional District in Davao City

Teaching Practices	School Type			
	Public		Private	
	Mean	Number of Times Practiced	Mean	Number of Times Practiced
Methods				
Lecture	4.00	Often	4.07	Often
Inductive	3.33	Sometimes	3.73	Sometimes
Deductive	3.13	Sometimes	3.47	Sometimes
Analytical- Synthetic	3.33	Sometimes	2.80	Sometimes
Project	2.93	Sometimes	2.33	Seldom
Brain Storming	3.47	Sometimes	3.33	Sometimes
Discovery	3.36	Sometimes	3.40	Sometimes
Learning by Doing	4.00	Often	4.33	Often
Problem Solving	4.27	Often	4.47	Often
Inquiry Method	3.40	Sometimes	2.93	Sometimes
Strategy				
Think-Pair-Share	3.73	Often	3.93	Often
Number Tiles	3.20	Sometimes	3.60	Often
Block Modeling	3.53	Often	4.67	Always
Mnemonics	2.53	Sometimes	2.27	Seldom
Accelerated or individualized math	3.20	Sometimes	3.33	Sometimes
Small Group Discussion	3.53	Often	3.33	Sometimes
Jigsaw	2.80	sometimes	2.73	Sometimes
Math Games	3.33	Sometimes	3.47	Sometimes
ICT integrated	2.53	sometimes	2.40	Seldom
Math Journals	2.60	sometimes	2.26	seldom

Among the common problems usually observed by mathematics teachers both in the private and public schools as implied in the participants' responses in the survey questionnaires are observed in table 3.3. It can be seen that lack of students' interaction which may be brought about by the negative attitude of students towards the methods of teaching used, lack of students' reading comprehension abilities, weak foundation of students, unavailability of instructional materials, lack of time for class preparation, overloaded class schedules, destructive learning environment, and students retentive memory.

Some of these problems that teachers encountered in the Philippines also happen in Africa. According to Thakrar, Wolfenden, & Zinn (2009) overcrowded classrooms, very few trained teachers, lack of schoolbooks and few toilets, often without separation between boys and girls are some of the problems facing primary school students in Sub-Saharan Africa. A statistical examination of school and teaching resources in the region by the UNESCO Institute for Statistics (UIS) highlights these challenges which weaken children's chances to succeed in their studies.

Table 3. The problems encountered by mathematics teachers in the public and private elementary schools of the First Congressional District in Davao City

Problems	School Type			
	Public		Private	
	Mean	Number of Times Observed	Mean	Number of Times Observed
overcrowded classrooms	3.9333	Very often (51 to 75% 0f the times observed)	1.2667	Not all (not observed)
lack of students' interaction	3.0667	Often (26 to 50% 0f the times observed)	2.5333	Often(26 to 50% 0f the times observed)
negative attitude of students	3.0000	Often (26 to 50% 0f the times observed)	3.7333	Very often (51 to 75% 0f the times observed)
lack of students' reading comprehension	3.4000	Often (26 to 50% 0f the times observed)	3.6000	Very often (51 to 75% 0f the times observed)
students' weak foundation	3.5333	Often (26 to 50% 0f the times observed)	2.8000	Often(26 to 50% 0f the times observed)
lack of time in class preparation	2.8000	Often (26 to 50% 0f the times observed)	2.8000	Often (26 to 50% 0f the times observed)
lack instructional material	2.5333	Often(26 to 50% 0f the times observed)	1.3333	Not at all (not observed)
overloaded class schedule	2.7333	Often(26 to 50% 0f the times observed)	1.4000	Not at all (not observed)
lack of students' retention on the subject matter	3.9333	Very often (51 to 75% 0f the times observed)	2.9333	Often(26 to 50% 0f the times observed)
destructive environment	3.2000	Often(26 to 50% 0f the times observed)	2.0000	seldom(1 to 25% 0f the times observed)

Training needs

Among the training needs that were identified from the responses of the Public School Teachers in the survey questionnaires include trainings about strategies that will help arouse pupil's participation especially to pupils below average, MATH Literacy particularly the use of Singaporean Method, Australian Math Orientation and Strategies in Teaching Problem Solving. Teachers from the private schools identified the Incorporation of Reading strategies in teaching how to understand problems in math, special trainings on how to ignite students to ask questions, and similar to the concerns of the public school teachers are the training about New Strategies in Teaching Math particularly the Singaporean Approach.

Teacher professional development happens in the framework of lifelong learning with experiences over an extensive stage of time contributing to teachers' knowledge of, values about and attitudes towards mathematics teaching and learning. According to the study of Carroll (2005), professional development was professed by the teachers to occur through interaction with significant others. The results suggest that teachers benefit from professional development programs that value the understandings and affective factors that teacher bring to the task, and that help teachers to mirror on their experiences. Moreover, according to National Education Association (2012), professional development must be required throughout the career of education support professionals. It should provide the same opportunities for these employees to acquire and enhance the knowledge and skills important to their positions and job performance and should assure that suitable education employees have a key voice at every part of setting up, implementation, and evaluation.

The total informants of the study were 30 public and private elementary math teachers from the first congressional district of Davao City only and complete enumeration design was used. Since only one congressional district was taken as informants, inclusion of second and third district of Davao City would be advised to further validate the result of the study.

CONCLUSIONS

From the findings, the following conclusions were drawn: 1) Most of the stakeholders viewed that they are not fully aware with the correct implementation of their frequent teaching practices considering their limitations in terms of budget and time; 2) Lack of more comprehensive trainings among teachers in

line with the new trends of teaching methodologies and strategies; 3) Insufficient resources and funding; negative views about seminars and trainings and the scarcity of trainings conducted within their reach and capacity; 4) Low monthly income from among the private school teachers could be considered as factors affecting their teaching practices; and 5) Teachers' training program is needed to address issues related to the teaching practices of Mathematics teachers of the selected public and private elementary schools of the first congressional district of Davao City.

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