

**K-12 REGIONAL MASS TRAINING PERFORMANCE OF  
GRADE 10 MATHEMATICS TEACHERS OF THE  
DEPARTMENT OF EDUCATION**

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**Abstract**

Great teachers help create great students. In fact, research shows that an inspiring and informed teacher is the most important school-related factor influencing student achievement, so it is critical to pay close attention to how we train and support both new and experienced educators.

This study focused on the k-12 regional mass training performance of Grade 10 mathematics teachers of the Department of Education-Province of Ilocos Sur. It sought to determine the level of performance of the grade 10 mathematics teachers during the Regional Mass Training held last May 2015.

The researcher used the Experimental Research Design specifically the One-Group Pretest-Posttest Design. Parallel 50-item expert made tests were administered to the grade 10 mathematics teachers before and after the k-12 regional mass training. The data gathered were interpreted using frequency count and percentages, mean, standard deviation and t-test.

The result of the study revealed that the respondents' performance before the regional mass training were at "Approaching Proficiency" level and was improved to "Advanced" level after the training. Thus, it was concluded that the k-12 regional mass training for grade 10 teachers was useful and effective not only to those veteran teachers that have already forgotten the concepts but also to those newly employed and non-math major teachers. It is therefore recommended that teachers should continue attending different trainings, seminars, workshops and symposia for their

professional development. In addition, the Department of Education should continue offering such trainings and other related activities to help teachers grow and develop more their skills. Lastly, Department of Education officials should conduct another related research not only in Ilocos Region but entire the country to further validate the effectiveness of the yearly regional mass training for teachers.

### **Keywords**

Dep Ed

k-12

Mass Training

Teachers' Performance

Effectiveness

### **1. Introduction**

The Department of Education yearly administers national and regional training for teachers in preparation to the full implementation of K-12 program. It is a great innovation of our educational system to equalize our young professionals with graduates of other countries abroad particularly in the number of years in formal education. With the implementation of k-12 program, our graduates from college will become globally competitive and have greater job opportunities.

Teachers are potent factors in education. They are responsible for shaping the youth through quality education. It is imperative that teachers acquire the totality of the information and qualities of education through instructions and trainings which maximize the development of an individual physically, mentally and morally. If teachers would be able to implement good programs and provide the learners effective teaching learning situations, the success would be reflected in the desired changes in the pupil's behavior. Teaching strategies acquired from seminar – workshops would be effective only in the hands of effective teachers. In their hands lies the responsibility of affecting desired changes in the lives of learners.

Since seminars, workshops and trainings are useful for the teachers, it is important to determine its effects on the trainees and even measure its effectiveness. To measure the training

effectively, the School Head need to think what to measure and how to approach it. Once the system of evaluation has been organized and planned then the content of the program /training is developed and its purpose will be determined. If the school wants to know how effective the training was, a complex evaluation and analysis must be done.

Great teachers help create great students. In fact, research shows that an inspiring and informed teacher is the most important school-related factor influencing student achievement, so it is critical to pay close attention to how we train and support both new and experienced educators.

A highly qualified teacher makes a difference in student outcomes, especially for children having difficulties. Reading Recovery's professional development is widely acclaimed as an investment in the professional skills of teachers and a model worth emulating (Herman & Stringfield, 1997).

## **2. Statement of the Problems**

This study aimed to find out the performance of the Grade 10 mathematics teachers during the K-12 Regional Mass Training of the Department of Education.

Specifically, it sought to answer the following questions:

1. What is the level of proficiency of the grade 10 mathematics teachers before and after the conduct of the k-12 regional mass training?
2. Is there a significant difference in the scores of the grade 10 mathematics teachers before and after the k-12 regional mass training of the Department of Education?

## **3. Scope and Delimitation**

This endeavor focused on determining the performance of Grade 10 mathematics teachers during the K-12 Regional Mass Training of the Department of Education conducted last May 2015.

It was delimited to all grade 10 mathematics teachers of Ilocos Sur Division, Vigan City Division and Candon City Division (*all grade 10 mathematics teachers of the Department of Education in the province of Ilocos Sur*).

#### **4. Assumptions**

This study was premised on the following statements:

1. The test instruments are valid and reliable.
2. The result of the test are true assessment of their knowledge on the content of grade 10 curriculum.
3. The training environment was conducive for training.

#### **5. Hypothesis**

This study tested the null hypothesis that there is no significant difference of the scores of the grade 10 mathematics teachers before and after the regional mass training of the Department of Education at 0.05 level of significance.

#### **6. Review of Related Literature**

##### **6.1.Theoretical Framework**

In the conceptualization of this study, the researchers reviewed selected concepts and researches which have bearing on the research.

### **On Teachers' Professional Development**

According to Felipe (2013), it is the goal of the Department of Education that every teacher will become not only efficient but also effective. It is in this mission that today, a lot of training's and seminars are being conducted to improve and develop the craft of each mentor in school. The Department fully understand that everything rises and falls on the teacher's capability to bring learning at the heart of every pupil.

Trainings and seminars on ICT, new methods and techniques in teachings, orientations on the K-12 Curriculum, Values Formation Seminars and the likes are being held in different parts of the country so as to prepare all the teachers in globalization. Their attendance to these seminars will help create an effective learning environment, improve teaching-learning situations, keep updated on modern instructional devices and inspire them to become better teachers in the modern world. Since the department is offering free trainings and seminars, teachers must grab this opportunity for self- improvement.

In addition, trainings and seminars are the platform to meet the people with same interest and learn a lot with field of teaching they have .Where personal experiences are shared, refresh old skills and also gain state- of- the art information about various topics. Devoting more than a couple of days learning a new skill with others who share similar problems and needs is very useful. Teachers learn much from the competent speaker who delight group with his/her insights, humor, and practical suggestions for solving challenges. (Navales 2013)

Curbi (2003) found out that students performance were greatly influenced by the trainings attended, educational attainment and attitude of administrators and students. Likewise, it has nothing to do or it was never influenced by the leadership and managerial competence. In her research results, it mentioned that the methods and strategies used by teachers did not influence the performance of the students. The use of deductive method, singing approach, conceptual approach, multiple instructional materials, to name a few was emphasized.

According to the study by Gibbs, et.al on the effectiveness of university teachers' training involving 22 universities in 8 countries wherein training group of teachers and their students were

studied at the start of their training and one year later. They reported that an evidence of a range of positive changes in teachers in the training group, and in their students, and a contrasting lack of change, or negative changes, in untrained teachers from the control group.

Moreover, insufficient training, time, and incentives are among the most commonly cited barriers for faculty change, and the focus of most of the current efforts to understand and promote faculty pedagogical change. (Henderson et. al)

Eronico (2003) referred by Unciano (2015) stated that there should be conscious effort on the part of the teacher to continuously provide opportunities to develop critical and creative thinking skills in the process of learning.

### **On Teachers Performance.**

Tabag (2013) mentioned that the quality of education at present depends to a large extent on the performance and quality of the teachers. Further she elucidated that the teacher has been charged with the responsibility of training to develop young children who are equipped with intellectual, good value, manual skills which are needed in our society. The academic performances of a teacher serve as a higher standard of learning on the part of the children.

Salcedo (1990) as cited by Unciano (2015) in her study, noted that an outstanding teacher does not possess an extra, indefinable something that we might call magic. According to her, there is the quality of greatness in some teachers that we may never fully understand.

She also cited the following are some factors that contribute to effective teaching:

1. The teacher's background in her subject matter and related areas compelled with willingness to learn more
2. Knowledge of learning theory
3. Knowledge of learning techniques and strategies

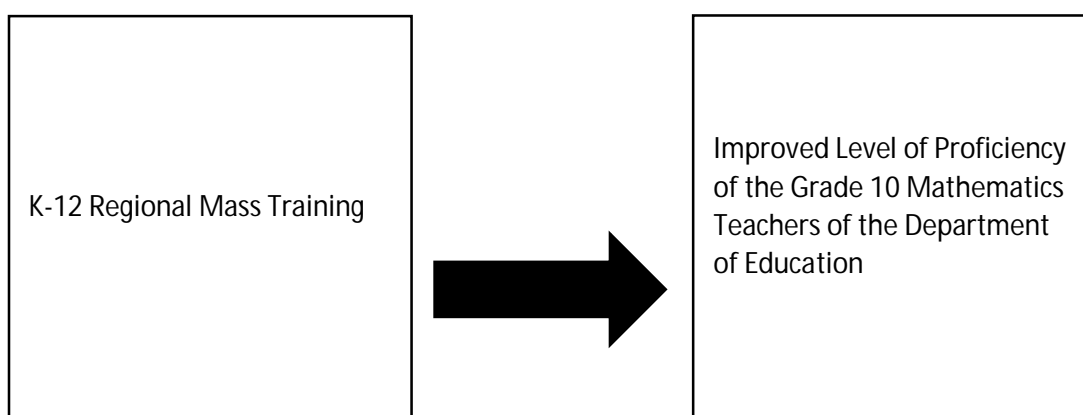
She also mentioned about basic degree finished, training and seminar-workshop provide additional knowledge and skills on the part of pre-school teachers and recommended that teachers

should enrich themselves through exposure to other forms of technology, especially those that can be used in the classroom.

This study is similar with the aforementioned studies and ideas in the sense that it focuses on teachers' trainings and performances.

## **6.2. Conceptual Framework**

Figure 1 presents the conceptual framework of the study.



*Figure 1. Conceptual Paradigm*

The figure shows that through the K-12 Regional Mass Training conducted by the Department of Education has a big impact to improve the level of proficiency of our grade 10 mathematics teachers.

## 7. Methodology

This chapter presents the research design, subject of the study, data gathering procedure and statistical treatment used in conducting the research.

### 7.1. Research Design

This study used an Experimental Research Design specifically the One-Group-Pretest-Posttest Design as illustrated in Figure 2.

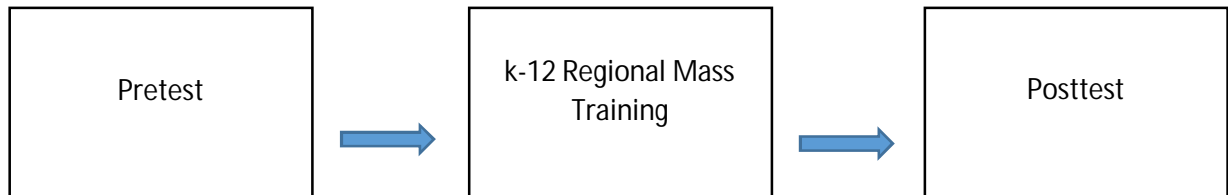


Figure 2. Research Design

In this design, the researcher (trainer of the k-12 Regional Mass Training for Grade 10 Mathematics Teachers) administered a pretest before conducting the training to the teachers on how to teach effectively and efficiently the course contents of mathematics curriculum.

Finally, the posttest was administered to them.

### 7.2. Subjects of the study

The subjects of the study were the 87 Grade 10-Mathematics Teachers of the Department of Education-Province of Ilocos Sur.



### 7.3. Research Instrument

The research instruments used by the researcher were 50-item parallel tests constructed by experts during the National Training for Trainers of Grade 10 mathematics teachers. It was composed of purely multiple choice type of test considering all the competencies of the grade 10 mathematics curriculum. The level of proficiency of teachers was interpreted through the following norms:

<b>Ranges of Scores</b>	<b>Descriptive Rating</b>
40.01-50.00	Advanced (A)
30.01-40.00	Proficient (P)
20.01-30.00	Approaching Proficiency (AP)
10.01-20.00	Developing (D)
0.00-10.00	Beginning (B)

### 7.4. Data Gathering Procedure

The K-12 Regional Mass Training was conducted in 6 consecutive days (from day 0 to day 5) and there were 3 trainers in the mathematics group. On Day 1, the trainers administered a 50-item multiple choice type of test to diagnose the teachers' prior knowledge regarding the course contents and competencies of Grade 10 Mathematics Curriculum.

On the next day (Day 2), the trainers presented and discussed the following topics: K-12 Updates, 21<sup>st</sup> Century Skills, Differentiated Instruction, New Methodologies in Classroom Assessment, and Localization and Contextualization. From Day 3 to Day 5(morning), the trainers had the walkthrough of the course and let their participants review course content of Grade 10 Mathematics Curriculum. The trainers also identified possible topics that are difficult to teach and learn by their learners.

Lastly, the participants were given another test parallel to the pretest to check their learning progress regarding the course content.

## 7.5. Statistical Treatment of Data

To obtain the objectives set in the study, the researcher used the following statistical measures to treat the data gathered.

**Frequency Count and Percentages (%).** These were used to present the distribution and proportion of the grade 10 teachers who garnered a certain level of proficiency before and after the training.

**Mean ( $\bar{x}$ ).** This was used to determine the level of proficiency of the group of teachers in the different competencies of grade 10-mathematics curriculum.

**Standard Deviation (sd).** This was used to identify the variability of the scores of the subjects.

**Mc-Guigan Gain Ratio.** This was used to determine the percentage expended effort of the subjects in gaining a perfect score.

**t-test for Dependent Sample.** This was used to test if there existed a significant difference in the level of proficiency of the subjects before and after the k-12 Regional Mass Training.

## PRESENTATION, ANALYSIS AND INTERPRETATION OF DATA

This chapter presents the data gathered from the study and the analysis and interpretation of the data using statistical tools mentioned in previous chapter.

### Levels of Proficiency of the Grade 10-Mathematics Teachers of the Department of Education-Province of Ilocos Sur

Table 1 presents the distribution of the Grade 10-mathematics teachers in their level of proficiency.

Table 1  
**Levels of Proficiency of the Grade 10-Mathematics Teachers  
of the Department of Education-Province of Ilocos Sur**

Level of Proficiency	Pretest		Posttest	
	f	%	f	%
<b>Advanced(A)</b>	-	-	52	59.77011
<b>Proficient(P)</b>	12	13.7931	31	35.63218
<b>Approaching Proficiency(AP)</b>	28	32.18391	4	4.597701
<b>Developing(D)</b>	39	44.82759	-	-
<b>Beginning(B)</b>	8	9.195402	-	-
<b>Total</b>	<b>87</b>	<b>100</b>	<b>87</b>	<b>100</b>
$\bar{x}$	<b>20.44(AP)</b>		<b>40.93(A)</b>	
<b>sd</b>	<b>7.51</b>		<b>5.19</b>	
<b>Gain Ratio (%)</b>	<b>110.31</b>			

Legend:

Ranges of Score	Descriptive Rating
40.01-50.00	Advanced(A)
30.01-40.00	Proficient(P)
20.01-30.00	Approaching Proficiency(AP)
10.01-20.00	Developing(D)
0.00-10.00	Beginning(B)

The table shows that during the pretest no participants were at the “Advanced” level and there were more participants in the “Developing”(39) and “Approaching Proficiency”(28) levels. It is because the old curriculum they were teaching which they already mastered was no longer the content of the k-12 grade 10 mathematics curriculum.

On the other hand, after the training or the walkthrough of course content, the participants recalled their prior/stock knowledge and gained more mathematical concepts regarding Grade 10 Mathematics as shown in the posttest result. Fifty-two participants were at “Advanced” level and no more in the “Beginning” and “Developing” level.

In addition, the overall mean rating of the participants during the pretest is 20.44 describe as “Approaching Proficiency” with a standard deviation of 7.51 while in the posttest they garnered an overall mean rating of 40.93 describe as “Advanced” level with a standard deviation of 5.19. It means that the training has a positive result. It deeply imply that the k-12 Regional Mass Training implemented by the Department of Education was a big help for the grade 10 mathematics teachers to recall and master their respective teaching course content.

This supports on the study of Navales (2013) that trainings and seminars are the platform to meet the people with same interest and learn a lot with field of teaching they have .It is where personal experiences are shared, refresh old skills and also gain state- of- the art information about various topics. Devoting more than a couple of days learning a new skill with others who share similar problems and needs is very useful.

In addition, Curbi (2003) found out that students performance were greatly influenced by the trainings attended, educational attainment and attitude of administrators and students. Likewise, it has nothing to do or it was never influenced by the leadership and managerial competence.

Moreover, on the study of Gibbs, et.al regarding the effectiveness of university teachers’ training involving 22 universities in 8 countries wherein training group of teachers and their students were studied at the start of their training and one year later. They reported that an evidence of a range of positive changes in teachers in the training group, and in their students, and a contrasting lack of change in untrained teachers from the control group.

Lastly, the participants expended more effort to make their score to a perfect score as shown in the computed gain ratio of 110.31%.

**Result of the t-test for Significant Difference in the Pretest and Posttest Scores of the Grade 10 Mathematics Teachers Before and After the k-12 Regional Mass Training of the Department of Education**

To determine whether or not there existed a significant difference in the pretest and posttest scores of the Grade 10 teachers before and after the regional mass training, the t-test was used. The result of the t-test is presented in Table 2.

Table 2  
**Significant Difference in the Pretest and Posttest Scores  
of the Grade 10 Mathematics Teachers**

<b>Statistics</b>	<b>Pretest</b>	<b>Posttest</b>
<b>No. of Respondents</b>	87	87
<b>mean difference</b>	20.49	
<b>sd of the differences</b>	8.59	
<b>df</b>	86	
<b>Computed t-value</b>	22.25	
<b>Tabulated t-value</b>	1.99	
<b>Decision</b>	Reject Ho	

As seen in the table, the participants obtained a mean difference of 20.49 with a standard deviation of 8.59. Likewise, the table also shows that the computed t-value of 22.25 is much higher than the tabulated t-value of 1.99 at 0.05 level of significance. Thus, the study rejected the null hypothesis that there is no significant difference in the pretest and posttest scores of the Grade 10 teachers before and after the regional mass training. This implies that there exist a significant difference in the pretest and posttest scores of the Grade 10 teachers before and after the training. It further implies that the implementation of K-12 Regional Mass Training for teachers is effective in helping our teachers grow and develop more their skills in teaching mathematics.

## SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

This chapter presents the summary, findings, conclusions and recommendations.

### Findings

The following are the salient findings of the study.

1. The level of proficiency of the participants in the K-12 Regional Mass Training for Grade 10 improved from “Developing” to “Advanced” level.
2. There exists a significant difference between the pretest and posttest scores of the grade 10 teachers before and after the k-12 Regional Mass Training.

### Conclusion

Based from the findings, the researcher concluded that the implementation of the yearly K-12 Regional Mass Training is useful and effective not only those veteran teachers that have already forgotten the concepts but also to those newly employed and non-math major teachers.

### Recommendations

From the conclusions, the following recommendations are forwarded.

1. Teachers should continue attending different trainings, seminars, workshops and symposia for their professional development.
2. Administrators should encourage their teachers to attend trainings, seminars and workshops, and continue their education as well as make opportunities available for them to do so. Moreover, administrators and districts should offer to either pay or help pay for trainings.

3. The Department of Education should continue offering such trainings and other related activities to help teachers grow and develop more their skills.

4. Department of Education officials should conduct another related research not only in Ilocos Region but entire the country to further validate the effectiveness of the yearly regional mass training.

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