Influence of Teachers' Personal Variables to Teachers' Mathematics Achievement and Instructional Skills: A Study on the Effectiveness of In-service Training in the Philippines

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Abstract

In the effort to upgrade teachers' as well as pupils' mathematical competence, the University of the Philippines National Institute for Science and Mathematics Education Development (UP NISMED) spearheaded the most number of teacher trainings in the Philippines. This paper reports a study carried out to investigate if there is a relationship between the teachers' personal characteristics and the teachers' mathematics achievement as well as the improvement of their instructional skills as a result of the training they participated in under UP NISMED's in-service program. It also describes the heart of the in-service program that devoted to reinforcing the use of Practical Work as a springboard to developing understanding of mathematical concepts. This is in keeping with the time-tested principle "hands-on, minds-on and hearts-on" approach.

INTRODUCTION

In-service education plays a vital role in bringing innovative practices and new knowledge to all educational personnel. This is an inevitable way of keeping the teachers abreast to the knowledge and skills they must possess to continuously educate pupils of today's generation with a wide spectrum of experiences, beliefs and abilities.

In a developing country like the Philippines, there has been a growing recognition of the need for competent mathematics teachers to alter the practices in the teaching of mathematics and to improve pupils as well as teachers' performance in mathematics.

In the effort to improve mathematics education, concerned authorities sought funding assistance from various organizations and agencies in and out of the country (UNESCO Report, 1999). Thus, Johnson and Johnson Phil, Inc. funded one of the recent teacher trainings in the country with which the University of the Philippines Institute for Science and Mathematics Education Development (UP ISMED now UP NISMED - National Institute for Science and Mathematics Education Development) was the training agency. Johnson and Johnson agreed to give financial assistance on the assumption that certain desirable outcomes will be achieved. In addition to these outcomes, it was deemed necessary to determine what, among the teachers' personal variables influence mathematics achievement as well as instructional skills of the teachers.

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The teacher training in June 1997 gave the opportunity for the researcher, being a member of the teaching staff of UP NISMED, to study and evaluate its result. This study sought relevant data and relationships between teacher variables and outcomes of the training from which decisions could possibly emanate for subsequent training programs in the country.

The Study

The study investigated the result of the In-service Training Program that had been conducted by UP NISMED to Grades 5 and 6 Mathematics Teachers in the Division of Parañaque, Philippines. Its primary aim was to determine whether the teachers' personal characteristics such as age, number of years in teaching mathematics, and educational attainment are significantly related to the teachers' achievement in Mathematics and instructional skills.

The In-service Training Program (INSET)

The training program has three -pronged general objectives; namely, to promote the use of Practical Work as an instructional strategy in teaching Mathematics, to demonstrate techniques that develop higher order thinking skills, and to help teacher-participants improve mastery of the curriculum content (UP NISMED Elementary School Mathematics Workgroup Report, 1997).

According to the modern views of mathematics and mathematics teaching and learning, the ultimate purpose of Practical Work is to develop in the pupils varied thinking processes (Ball, 1989). It gives pupils the opportunity to work with manipulative materials as a springboard to developing understanding of mathematical concepts. Teaching for conceptual understanding, according to Ball, is the most important process. She regarded it as the grindstone of learning. With Practical Work, pupils must be actively involved, and their engagement must move from concrete to the abstract levels. In this approach, telling and explaining are less the teacher's trade. Instead, the teacher serves more as a guide, facilitating pupils' learning by posing problems and asking questions aimed at helping pupils clarify their thinking (e. g., "What can you say about these two objects?", "In what way are they related?" or "Suppose I cover the third number can you explain how to get it?"). All these are believed to have helped pupils explore and make sense of mathematics.

In every session in the training, teaching strategy which focuses on the development of thinking skills, and mastery of the curriculum content were integrated. The training content adopted the topics in the Minimum Learning Competencies (MLC) provided by the Department of Education, Culture and Sports (DECS). The strategy-related topics included Planning a Lesson, Thinking Skills, Mathematical Investigation, Problem Solving, and Games in Mathematics.

Specific training goals and objectives were discussed with the teacher-participants at the beginning of the program, taking the results of a pretest mostly in multiple choice, problem solving and open-ended type questions into account. The same objectives guided the different training sessions and activities throughout the program. The program ended with a posttest identical to the one given at the start of the program.

METHODOLOGY

Research Design

This study made use of a correlational method as it attempted to discover the magnitude of the rela-

tionship of the teachers' personal characteristics to their mathematics achievement as well as their instructional skills.

For the teachers' mathematics achievement, a Pretest and Posttest instrument was used. The items were in multiple choice-type, capstone problems that required the teachers to synthesize and integrate concepts and calculational techniques, and open-ended type questions where the teachers were tasked to validate their conjectures, make generalizations, and the like (Appendix 1). The purpose of these pre-post tests was to find out how well the teachers have improved their knowledge in mathematics as a result of the training program. Also, the result of the tests was analyzed to find its correlation with the teachers' personal variables (age, number of years in teaching mathematics, and educational attainment).

For the teachers' instructional skills, the instrument Classroom Observation Checklist was used. It consisted of 20 statements on instructional skills. In a scale of 1 to 5, with 5 being the highest, the mathematics supervisor rated the teacher-participants as to how they execute a particular lesson in the classroom (Appendix 2). The purpose of the checklist was to find out if the different instructional skills taught in the training were carried out or manifested by the teachers in the way they taught their lessons in their respective classes. In addition, this checklist was used to make comparison of the performance of the teacher-participants in terms of their instructional skills before and after the training. The score increment in this checklist was analyzed against the identified teachers' personal variables.

The teacher training program were participated in by 34 mathematics teachers teaching Grades 5 & 6 from the Division of Parañaque, Philippines, but, with this number, one teacher did not provide any information about his profile. Table 1 shows the distribution of teachers by grade level and school.

Table 1. Distribution of Grades 5 and 6 Teachers by Grade Level and School

SCHOOL	Grade 5	Grade 6	TOTAL	Percentage
Parañaque Elementary School - Central	3	5	8	24.2
La Huerta Elementary School	1	1	2	6.1
Parañaque Elementary School District III	5	1	6	18.2
Tambo Elementary School	4	3	7	21.0
Sto. Niño Elementary School	2	0	2	6.2
Baclaran Elementary School District I	3	3	6	18.2
Baclaran Elementary School District II	1	1	2	6.1
TOTAL	19	14	33	100

The Pearson Product-Moment of Correlation was employed to determine if there exists a relationship between the independent variables (teachers' personal characteristics such as age, no. of years in teaching mathematics, and educational attainment) and the dependent variables (the score increment in the pretest and posttest and the score increment in the teachers' instructional skills before and after the training). A high positive correlation between an independent and a dependent variable implies that the independent variable is a good predictor of the dependent variable.

Research Procedure

Teachers' Personal Data

The teacher-participants were asked to accomplish the personal data sheet attached on the first page of the pretest given at the start of the training. The information about age, educational attainment and number of years in teaching mathematics were basically the items asked in the form. The teacher-partici-

pants' age and number of years spent in teaching mathematics were rounded off to the nearest year. For their educational attainment, it was categorized into 4 levels: 1 for baccalaureate degree; 2 if there were master's units earned; 3 for master's degree; and 4 for those who managed to earn doctoral units. These variables were analyzed to find their relationship to the teachers' mathematics achievement and instructional skills.

Pretest/Posttest and Classroom Observation Checklist

The raw scores from the pretest/posttest and the teachers' instructional skills rating were gathered. The score increments from these scores were computed to find out whether the results have been influenced by the identified teachers' personal variables.

PRESENTATION, ANALYSIS and INTERPRETATION of DATA

Participants' Profile

The teachers' personal characteristics referred to in the study is peculiar to the set of Grades 5 and 6 teachers who attended the UP NISMED teacher training program for the Division of Parañaque, Philippines. Table 2 shows the distribution of the teacher-participants by age, educational attainment, number of years in teaching mathematics and the grade level they teach.

Table 2. Profile of Grades 5 and 6 Teacher-Participants

Educational Attainment	1	2	3	4			total
	16	10	6	1			33
No. of Yrs. Teaching Math	No experience	Below 5	5-9	10-14	15-19	20/above	total
	1	10	3	3	5	11	33
Age	25-29	30-34	35-39	40-44	45-49	50/ above	total
	2	4	3	2	7	15	33

Mirroring national trends, schools in the lower grades were staffed largely by women. In fact, in this study, majority of the Grades 5 and 6 teacher-participants were females. The ratio of male to female was about 70%.

Regarding the educational attainment of the Grades 5 and 6 teacher-participants, one had started her doctoral degree; six had finished master's degree while ten had earned master's units. Almost 50 percent of the teachers were graduates of Bachelor of Science in Elementary Education or Bachelor of Science in Industrial Education.

As per the teachers' number of years in teaching mathematics, majority of them had taught elementary mathematics from 1 to 9 years. Twenty-four percent had 10 to 19 years experience while one-third had 20 and above. However, one teacher had not taught mathematics at all.

Moreover, for the age of this group of teachers, two-thirds had ages ranged from 45 and above, 58 being the oldest. About one-fifth of them were in the age-ranged 30 to 39 while two were below 29 years old.

The percentage of teachers belonging to the age group of less than 29 years was 6.1 percent, while 39.4 percent have a teaching experience of only 1 to 9 years. The great discrepancy between the variables age and number of years in teaching mathematics could be associated to the following possibili-

ties: that most of the teachers were not initially meant to teach elementary mathematics as they enter the teaching profession, and that most of them might have preferred teaching subjects other than Mathematics during the early stage of their teaching career.

Teachers' mathematical and teaching abilities as a result of the INSET

In the study, there was a presumption that because of the training, the teachers significantly improved their knowledge and skills in mathematics and their instructional skills in teaching the subject.

To test whether the teacher-participants have significantly improved their knowledge and skills in mathematics, their raw scores in the pretest and posttest were subjected into a two-tailed test of a Paired Comparison (or Dependent) t test at 0.05 level of significance. Table 3 summarizes the t test for these scores.

Table 3. Analysis of the Paired Comparison (or Dependent) t test for the Pretest and Posttest Scores of Grades 5 & 6 Teacher-Participants

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
PRETEST	7.91	34	4.67	.80
POSTTEST	16.74	34	3.31	.57

Paired Samples Correlations

	N	Correlation	Sig.
PRETEST & POSTTEST	34	.587	.000

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
PRETEST - POSTTEST	-8.82	3.83	.66	-10.16	-7.49	-13.449	33	.000

The pretest mean score (7.91) was 36% of the total perfect score (22 points), while that of the posttest (16.74) was76%. The posttest mean score inched up to more than twice of the pretest. This gives an initial impression that the teachers' performance in the posttest was better than in the pretest since there was a gain of 40% in the percentage of mean scores.

A comparison of the standard deviations for the two distributions (4.67 and 3.31) shows that the scores in the posttest were less spread out from the mean than the scores in the pretest. It can be noted also that while the pretest has a greater variability (4.67), it has a smaller measure of central tendency (mean=7.91) compared to the posttest' standard deviation of 3.31 and mean score of 16.74. This could be described as being better and more homogeneous in their knowledge of mathematical concepts when the teachers took the posttest than in the pretest.

Also, there exists a significant correlation between the pretest and posttest ($r=0.587$, $p<0.05$). This indicates that those who score high on the pretest tend to score high on the posttest. The finding suggests that the INSET broadened what existing knowledge and skills the teachers may already have.

Tested at 0.05 level of confidence, t test reveals a very small (<0.05) p value (Sig.(2-tailed)) associated with the t value of -13.449. The result gave enough evidence to accept the hypothesis that teachers who participated in the training program have significantly improved their knowledge and skills in mathematics. Thus, the researcher is confident in saying that the observed differences in the pretest and posttest are not merely a function of chance coincidence but rather the effect of the training program with which the teachers participated in.

Furthermore, to test the presumption that the teachers' instructional skills have significantly improved after they participated in the training program, the mathematics supervisor's evaluation scores on the teachers' performance were subjected to the same statistical test as the pre- and posttest. The t test analysis for this data is presented in Table 4.

Table 4. Analysis of the Paired Comparison (or Dependent) Test for the Data from the Classroom Observation Checklists that were accomplished by the Mathematics Supervisor

Paired Samples Statistics

	Mean	N	Std. Deviation	Std. Error Mean
Before	59.9091	33	1.4001	.2437
After	83.2121	33	7.6924	1.3391

Paired Samples Correlations

	N	Correlation	Sig.
Before & After	33	.533	.001

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference Lower	Upper			
Before - After	-23.3030	7.0467	1.2267	-25.8017	-20.8044	-18.997	32	.000

The mean scores of the teachers' instructional skills 'BEFORE' the training is moderate (59.91%). This means that the teachers were already equipped with good instructional techniques based on the supervisor's criteria before they attended the training. The level of attainment AFTER the training was 83.21%.

The correlation between the teachers' instructional skills before and after the training was 0.533. This was supported by a very small (<0.05) p value (Sig.), which indicates that there was a strong linear relation between the teachers' performance before and after the training.

The mean score for the teachers' instructional skills before the training was about 23 points smaller than the mean score after the training (that is 59.91-83.21). The 95% confidence interval for the difference in means (-23.30) extends from -25.80 to -20.80. The p value (Sig. (2-tailed)) associated with the t statistic (-19.00) was very small (<0.05), thus, giving clear evidence that the difference of the means before and after the training was "real", that is, it was statistically significant difference. The analysis, therefore, confirms the assumption that the teachers have improved their instructional skills following their participation in the training program.

The main purpose of this paper is to present an evidence as basis for the acceptance or rejection of the following two hypotheses.

Hypothesis #1: Teachers' age and number of years in teaching mathematics are NOT significantly related to the following:

a. Teachers' mathematics achievement from the training; and

b. Teachers' instructional skills in the classroom after the training.

Hypothesis #2: Teachers' Educational Attainment is significantly related to:

a. Teachers' mathematics achievement from the training; and

b. Teachers' instructional skills in the classroom after the training

In this study, the teachers' mathematics achievement was represented by the score increment in their pretest and posttest. Thus, to determine the relationship between the teacher-participants' mathematics achievement and the variables: age, educational attainment and number of years in teaching mathematics, the Pearson Product-Moment Correlation was employed.

Table 5. Correlations between Teachers' Variables and Pretest/ Posttest Score Increment (N=33).

Teachers' Variables		Score Increment
Age	Pearson Correlation Sig. (2-tailed)	-0.145 0.414
Educational Attainment	Pearson Correlation Sig. (2-tailed)	0.059 0.741
Years in teaching Math	Pearson Correlation Sig. (2-tailed)	-0.337 0.051

Table 5 summarizes the correlation of the teachers' variables with the score increment in the Pretest and Posttest. The table reveals that there was no significant correlation between the score increment and the identified teachers' variables. This relationship is further pictured in Figure 1. It can be observed in the scattergrams that the plotted points are scattered in a random fashion, or the points largely deviate from the regression line. This is indicative of a less degree of relationship between the independent variables (teachers' personal characteristics) and the dependent variable (Teachers' Mathematics Achievement). Also, it is worth to note that in Figures 1b and 1c, the regression lines sloped down to the right. This implies that there were negative correlations, though the relationships were not found significant using inferential statistics, between the independent variables and the dependent variable.

On the other hand, to determine if the identified teachers' variables are related to the score increment of the teachers' instructional techniques scores before and after the training, the Pearson Product-Moment of Correlation was also used.

Table 6 gives the summary of the analysis for the correlation between the score increment from the teachers' instructional skills before and after the training, and the identified teachers' variables. This table shows that of the three identified teachers' variables, only the number of years in teaching mathematics ($r = 0.432$, $p = 0.012$) has a statistically positive significant correlation, tested at 0.05 level of significance (2-tailed), with the teachers' instructional skills. This means that teachers who have spent more years in teaching mathematics tend to demonstrate better instructional techniques than those with fewer experience teaching the subject. The variables age and educational attainment with -0.097 and 0.306 degree of correlation, respectively, were found to have no significant correlation with the teachers'

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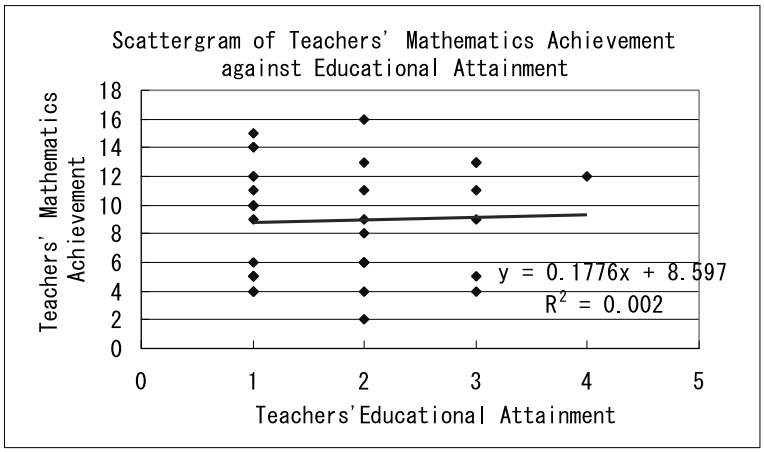

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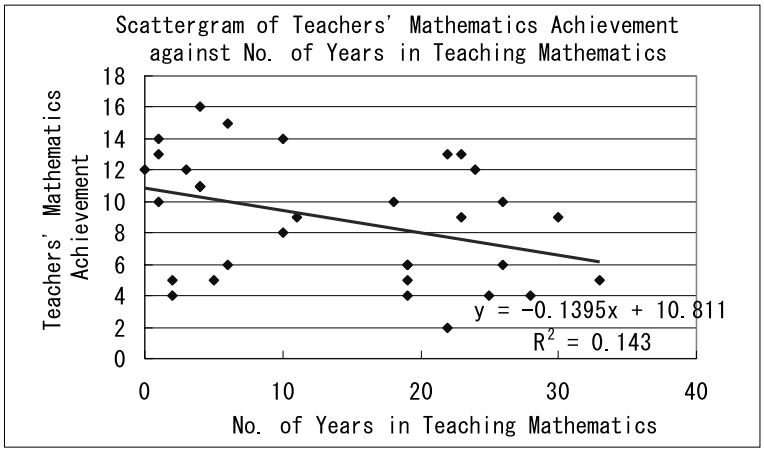

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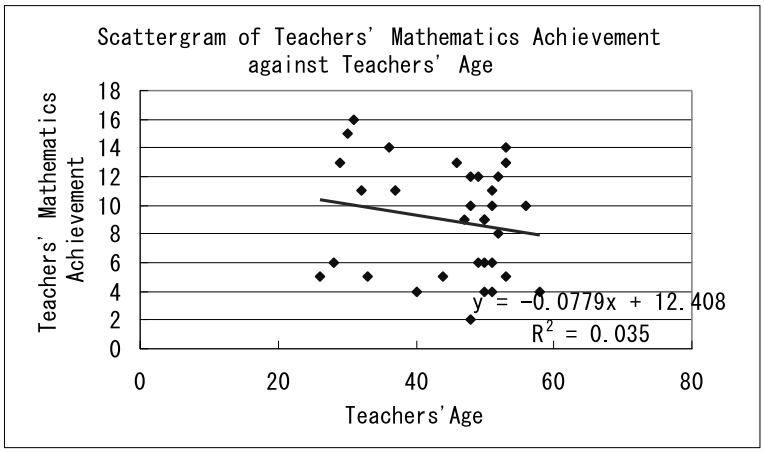

Figure 1. Scattergrams between the Teachers' Mathematics Achievement and the Teachers' Personal Variables

Table 6. Correlations between Teachers' Variables and Teachers' Instructional Techniques Score Increment (N=33).

Teachers' Variables		Score Increment
Age	Pearson Correlation Sig. (2-tailed)	-0.097 0.593
Educational Attainment	Pearson Correlation Sig. (2-tailed)	0.306 0.083
Years in teaching Math	Pearson Correlation Sig. (2-tailed)	0.432* 0.012

instructional techniques. Though it was not found significant, the negative value of the degree of correlation between age and instructional skills would give an enigmatic implication. It can be recalled that in the discussion of the teachers' profile, age does not seem to be positively correlated with teaching experience, a variable found to have positively correlated with better instructional techniques. A possible implication is that the higher the age does not mean having better teaching techniques but, seems to have, on the contrary, the other way around.

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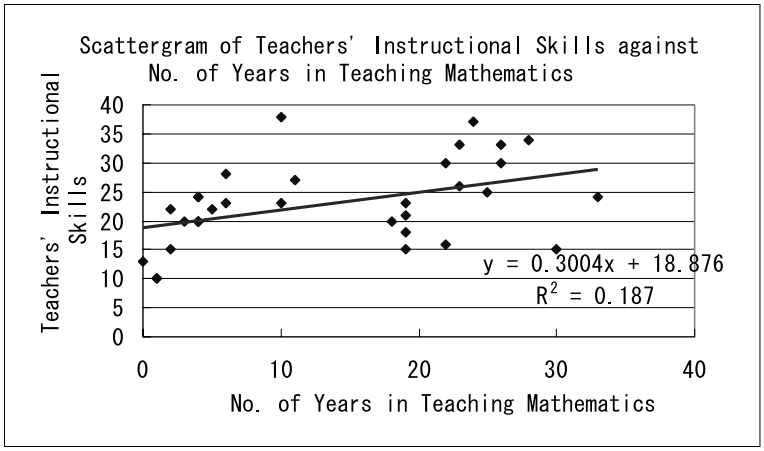

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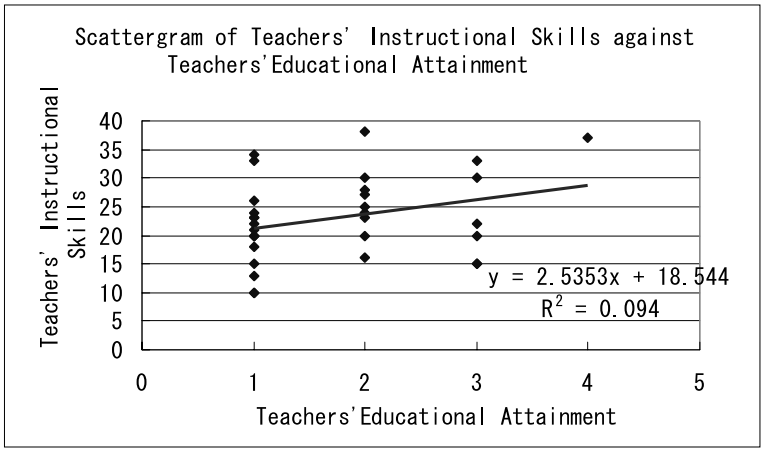

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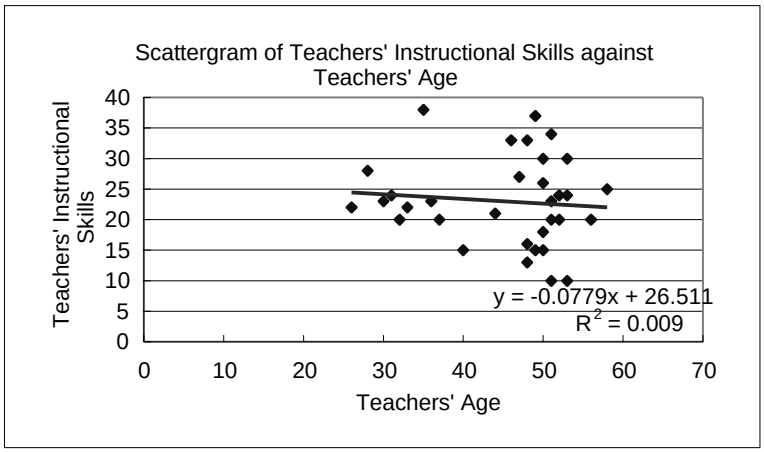


Figure 2. Scattergrams between the Teachers' Instructional Skills and the Teachers' Personal Variables

Moreover, the multiple regression correlation coefficient (R^2) in Figure 2a shows that 18.7 percent of the Teachers' Instructional Skills variance can be accounted for by its correlation with the teachers' number of years in teaching mathematics; the other 81.3 percent of the variability can be attributed to other factors beyond the purview of the study (e.g., size of the class, major course, minor course, sex, and others in addition to the ones mentioned earlier).

The Impact of the Training Program and its Implication

Among others, educational attainment was hypothesized to have a positive effect on the result of the training program. But, the outcomes of the statistical tests in this study consistently show that the teachers' educational attainment does not have significant impact on the teachers' mathematics achievement and improvement of instructional skills.

Except for the length of time the teachers spent in teaching mathematics, it is safe to say that the differences in the teacher-participants' scores in the pretest and posttest as well as the improvement in their instructional skills could not be associated to any of the other identified personal characteristics they possess but rather due to the effect of the training they attended.

Hence, the in-service training program that UP NISMED conducted for the elementary mathematics teachers of Parañaque Division had helped these teachers grow professionally. This confirms the claim of Ball (1989) in her study that the teachers' instructional skills, attitudes, and beliefs about mathematics significantly change following their participation in a training program. It is, therefore, within this premise that the researcher makes suggestion on the adaptation of parallel in-service programs to other divisions in the country. And more importantly, part of the sustainability of the project is to monitor and supervise the teachers' as well as students' activities inside the classroom, which would require more funding and assistance from concerned authorities and school officials.

SUMMARY and CONCLUSIONS

Summary of the Research Method

This study was undertaken to determine if there is a significant relationship between the teachers' per-

sonal characteristics such as age, length of service and educational attainment, and their mathematics achievement as well as their instructional skills.

The subjects of the study consisted of 34 Grades 5 & 6 Mathematics teachers who participated in the Parañaque Teacher Training Program, which was conducted by the Elementary School Mathematics (ESM) Workgroup of UP NISMED.

The instruments used in the study were the Pre-Post Test and the Classroom Observation Checklist. These were prepared by the UP NISMED ESM Workgroup by which the researcher is one of the members. The Pre-Post Tests were administered to the teacher-participants in 1 1/2 hours each. Meanwhile, the Classroom Observation checklist was used by the mathematics supervisor during classroom observations.

The Pearson-Product Moment Correlation was applied to determine the relationship between the teacher variables and the increments from the pretest and posttest scores as well as the teachers' instructional skills before and after the training.

Conclusions

No significant relationship was found between the identified teachers' personal variables and the teachers' mathematics achievement. However, the teachers' number of years in teaching mathematics had a low negative correlation with the mathematics achievement.

On the other hand, the teachers' number of years in teaching mathematics was found to have significant correlation, tested at the .05 level (2 tailed), with the teachers' instructional skills. Also, the teachers' educational attainment had a positive correlation with the teachers' instructional skills, but the degree of relationship was not considered significant.

REFERENCES

Miguel, M. and Barsaga, E. (1999). Multi-grade schooling in the Philippines: a strategy for improving access to and quality of primary education. In: *From planning to action: Government Initiative for Improving School-level Practice: Proceedings in the UNESCO APEID Seminar Report*, pp. 117-131.

Ball, D. L. and Wilcox, S. K. (1989). In-service teacher education in Mathematics: examining the interaction of context and content. *Proceedings from an Annual Meeting of the American Educational Research Association in San Francisco*. [Online] URL: http://ncrtl.msu.edu/http/rreprots/html/pdf/rr893.pdf

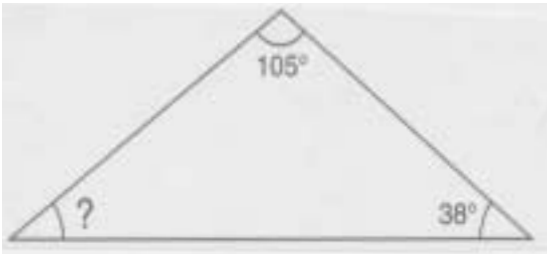
Burgess, R. and Galloway, S (1993). Does in-service education have an effect on classroom practice? In: R. Burgess, J. Connor, S. Galloway, M. Marrison, and M. Newton (Eds.), *Implementing In-service Education and Training* (pp. 169-173). London: The Palmer Press

UP NISMED Elementary School Mathematics. *Science and Mathematics Education Manpower Development Project: a consolidated report*. University of the Philippines National Institute for Science and Mathematics Education Development, Quezon City, Philippines.

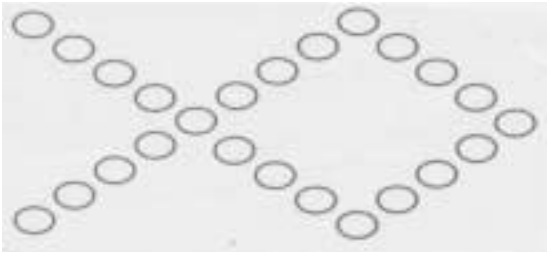
Appendix 1. The Program's Pretest/Posttest Items

1. Edna bought 3 apples for P28. If Aida has P252, how many more apples can she buy than Edna?

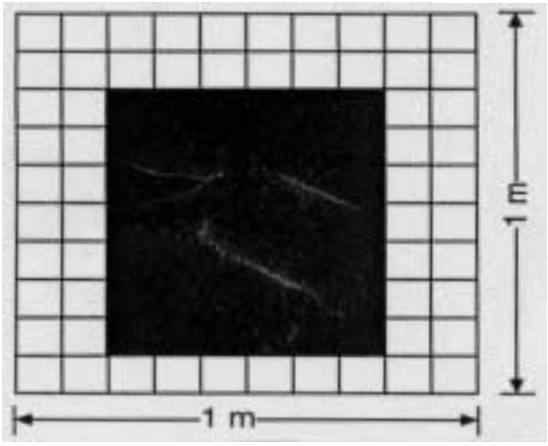
2. Find the measure of the angle in question mark by computation.



3. Write a number expression that tells the total number of circles in the figure.



4. What is the area of the shaded region?

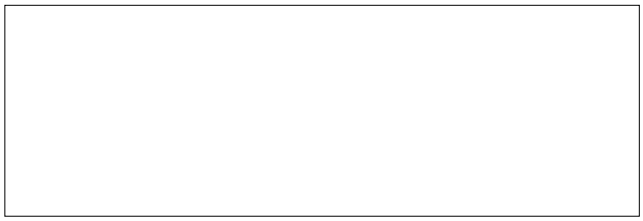


5. Nilo can bike 2/5 of a kilometer in 3 minutes. If he travels at the same rate, what part of a kilometer can he cover in one minute?

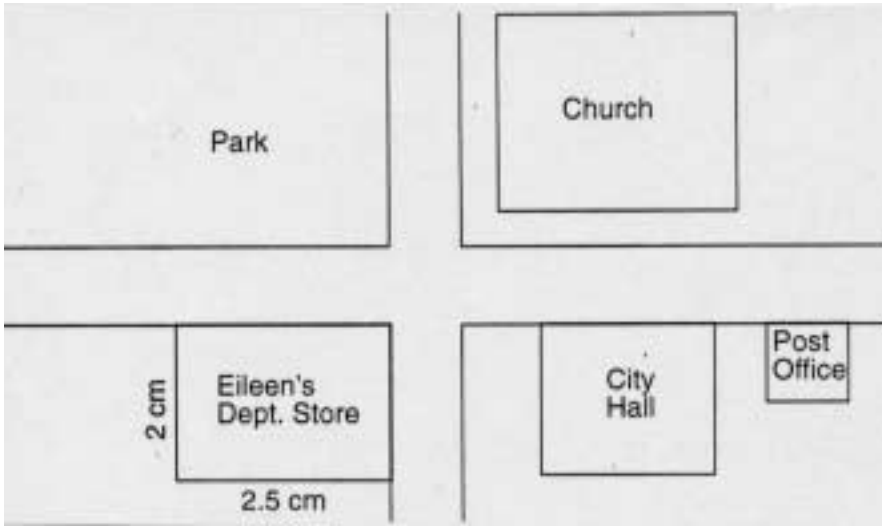
6. Ric was playing on a staircase. He went 3 steps up, 4 steps down and 5 steps up. If he is now at the

7th step, at which step did he start?

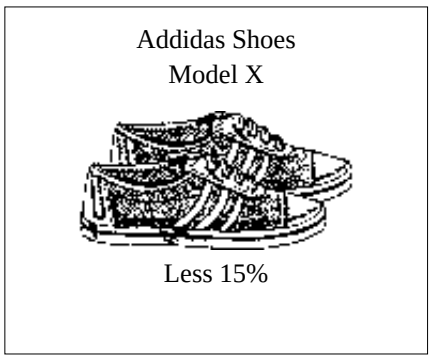
7. Mang Tirso can paint 3/4 of a wall in 2 hours. If the rectangle below is made to represent the entire wall, what part of the wall will Mang Tirso be able to paint in one hour? Shade that part of the wall.



8. Given the community map drawn to a scale of 1 cm: 20 m, approximate the perimeter of Eileen's Department Store.

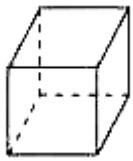


9. In Jill Mart, a pair of Addidas shoes costs P900. Ann's Department Store sells the same model of shoes at the same price. During a sale the following ads are displayed.



Which store sells the shoes at a lower price?

10. A net is the pattern of a spatial figure given so that when the edges are attached the spatial figure will be created. Draw a net of the given cube below.



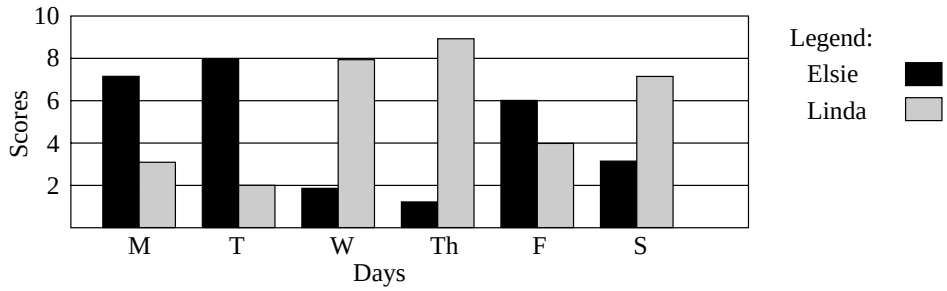
11. Simplify:

$$4/5 + (6 \times 8) - 2$$

12. Given the list of some appliances and their wattage, which one consumes more electricity: Two Air Conditioning Unit used for 30 minutes or three Fluorescent lamps (21" each) used for one day and 10 hours?

Appliances	Wattage
Air Conditioning Unit	358
Rice Cooker	650
Fluorescent Lamp (21")	32
Desk Fan (10")	40

13. Elsie and Linda played jackstones everyday from Monday to Saturday. The graph shows their daily scores.



Which of the following statements is NOT true?

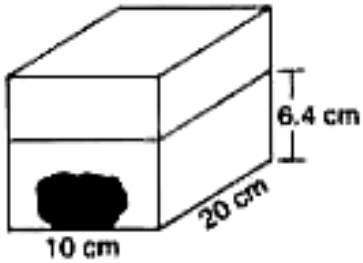
a. Linda's scores show greater improvement than Elsie's score.
b. The scores of the two girls were closest on Friday.
c. Linda had a total score of 38 points
d. On Monday, Elsie's score was 4 more than Linda's.

14. The following is the breakdown of Eric's weekly allowance.

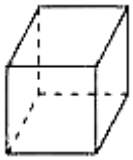
Transportation	31%
Food	40%
School Supplies	24%
Savings	5%

Construct a circle graph based on the above data.

15. The height of the water in the container rose from 4.6 cm to 6.4 cm when a stone was placed in it. Find the volume of the stone.



16. How many edges does this rectangular prism have? _____

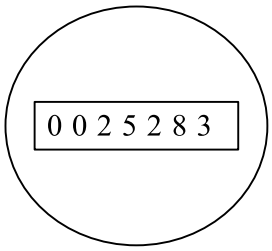


Make another problem about this rectangular prism.

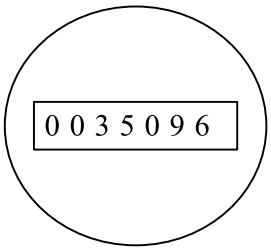
17. Consider the trapezoid below.

Partition it into other plane figures without changing its area.

18. The previous and present readings of a water meter for one week are shown below. If they reflect the <u>average</u> weekly water consumption, how many <u>cubic meters</u> of water was used monthly.



Previous Reading

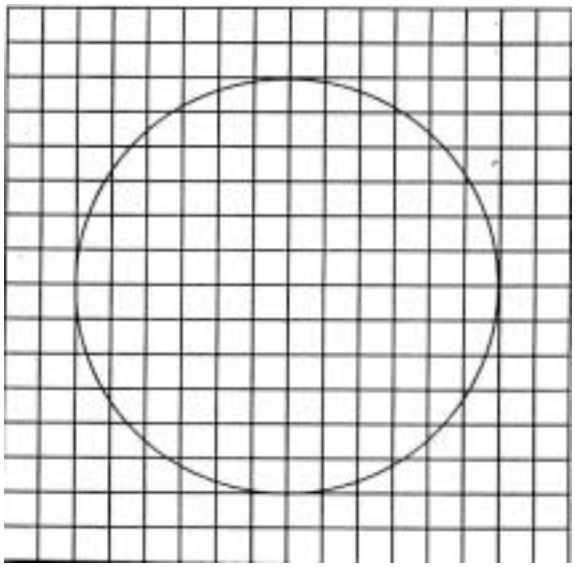


Present Reading

19. A circle cutout has been placed on a grid as shown below.

Find the following:

a. Circumference of the circle
b. Area of the circle



Appendix 2. Classroom Observation Checklist

Teacher Observed: _____ Date of Observation: ____ Time: ____
Class Observed: _____ School: _____
Lesson: _____
Observer: _____

Directions: Below are 20 statements regarding teachers' instructional skills with two sets of a 5-point scale. With "5" as the highest, rate the teachers' instructional skills before and after they have participated in the UP ISMED Teacher Training Program. If possible, please write some comments on your evaluation in each item.

Instructional Skills	BEFORE					AFTER				
	5	4	3	2	1	5	4	3	2	1
1. Clarifies the concepts by giving examples as well as counterexamples.										
2. Every activity has a purpose. It helps carry out the objective/s of the lesson.										
3. Prepares the pupils for the activity. Introduces the material and sees to it that the instructions are clear to everyone. Sets standards. Motivates everyone to participate in carrying out the activity and to share his or her ideas in the group discussions.										
4. When conducting an activity, manages the class well promoting an atmosphere of exploration while minimizing unruly behaviors.										
5. The time allotment is sufficient for carrying out the objective/s of the lesson. Prepares right amount of activities considering time allotment.										
6. Asks questions that promote higher order thinking.										
7. Follows up activities by means of questions and discussions.										
8. Gives every pupil opportunities to present or explain ideas/findings/results from group activities. Gives everyone a chance to become a group leader.										

9. Assesses pupil learning using appropriate method.										
10. When presenting a problem which is to be solved in groups, first, gives the individual pupils time to reflect on the problem before forming the group.										
11. Arranges the instructional steps logically.										
12. In conducting group work, avoids making large groups and sees to it that there is enough space for everyone.										
13. Helps the class analyze what makes some answers wrong or unacceptable.										
14. Uses materials appropriate to activities.										
15. While the activity group is in progress, goes around, observes, asks questions, watches out for misconceptions, and corrects them immediately.										
16. Encourages the pupils to always check their answers using other methods, if possible.										
17. In conducting whole-class discussion/ recitation, calls as many pupils as possible in order to promote participation from everyone, but discourages them from answering in chorus.										
18. Is accurate. Gives correct information, explanation, calculation, procedures, drawings, etc.										
19. Has a wide perspective of the topic.										
20. Emphasizes the essentials.										