Professional Skills Among Mathematics Instructors in Relation to Students' Performance

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Abstract

This study aimed to determine the professional skills among instructors in mathematics in relation to the performance of students at Jose Rizal Memorial State College campuses namely: JRMSC, Main; JRMSC, Dipolog; JRMSC, Katipunan and JRMSC, Tampilisan, during the first semester of School Year 2008 – 2009. The study revealed that there was no significant difference between the ratings of the mathematics instructors and the student respondents on professional skills. This implies that their perception of the teaching skills, management skills, and evaluation skills are of the same degree and at a certain level. The study revealed further that mathematics instructors and instructors in mathematics were very much skillful along teaching and management but much skillful in evaluation skill practices. Thus, the students' performance in mathematics subject was good. It was also revealed that there was a positive significant relationship but slight correlation on the level of performance of the students and the professional skills of mathematics instructors The performance of students in Mathematics depends on the teaching, management and evaluation skills of instructors in Mathematics. Thus, there should be seminar – workshop conducted to upgrade the professional skills of Mathematics instructors.

***Keywords and Phrases*:** *professional skills, mathematics instructors, students' performance*

Introduction

Today the world is passing through rapid changes. In such a world, education cannot resist change. One of the significant trends in today's school is the couragement of creativity. To encourage original thought is the great role of a teacher in creative education. The teacher must exert deliberate and systematic influence through instruction, discipline and harmonious development of physical, intellectual, aesthetic, social and spiritual powers of the human being. According to John Dewey, a progressive educator of the present century, a teacher is referred to as the mature person directing the development of all the capacities of an immature person. For any institution of higher learning to survive the competitive world, institutions must have a competitive

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advantage. This is accomplished by offering quality education. The issue of quality education in the Philippines has been echoing for many decades and continuing to radiate the present system. That is why academic institutions find it important to define quality from the standpoint of the teacher and the performance of the learner.

According to the National Research Council, teacher quality refers to the knowledge, skills, abilities, and dispositions of teachers, which enable them to engage students in rigorous, meaningful activities that foster academic learning. Teacher should undertake good teaching activities to stimulate effectively the students' studies and promote students to achieve high standards. The success of the individuals is based largely on the extent of his performance in school which is evident in the breadth and quality of knowledge they have gained in school through years. Teacher quality is an indicator of students' achievements. In other words, enlightened teachers are likely to cultivate accomplished students. The continuous improvement of an index of teacher quality is necessary in order to produce good students. It has been pointed out that in analyzing teachers' personality, it is necessary to consider the total impact of the total pattern of these qualities upon the students (Mehl, et.al., 1998). The individual qualities which make for excellence are not identical in all effective teachers. The individuality and uniqueness of teachers' personality is a priceless ingredient in teaching.

In mathematics, teachers need to be committed and enthusiastic professionals in order to facilitate teaching and at the same time promote students' learning of the subject. Specifically, Mathematics is often perceived as a difficult subject in school. It has a wide scope of application in other disciplines like chemistry, physics, and other related sciences. It is amazing therefore, if in each school year, there were just few students who failed in mathematics subject.

On this premise, the researcher conducted this study to look into the professional skills among Mathematics instructors and instructors in Mathematics in relation to students' performance of the subject at Jose Rizal Memorial State College System during the first semester of the School Year 2008 – 2009.

Objectives of the Study

This study sought to answer the following:

1. Find out the professional skills among mathematics instructors in relation to the students' performance at Jose Rizal Memorial State College System during the first semester of the School Year 2008 – 2009.

2. Identify the level of professional skills of the instructors in Mathematics and the perception of students in terms of teaching skills, management skills, and evaluation skills.

3. Determine the significant difference on the ratings of the Mathematics instructors and the students on professional skills of the instructors.

4. Look into the students' level of performance in Mathematics.

Materials and Method

The descriptive – correlational method of research was employed in this study. The instrument used was the checklist questionnaire, which consisted of two parts: the profile of respondents and the professional skills of instructors in Mathematics. The Mathematics instructors and instructors in Mathematics and the students were the respondents of this study. The data gathered were treated using the weighted mean, t-test and the Pearson r Product Moment Coefficient of Correlation.

Results and Discussions

It was revealed that there was a significant relationship on the performance of the students and the teaching skills, management skills and evaluation skills of instructors in Mathematics. This was evidently showed with the observed t – value of 5.619(teaching skills vs. academic Performance), 4.521 (management skills vs. academic Performance) and 3.423(evaluation skills vs. academic Performance). The resulting t- values were greater than the critical t – value of 1.96 at 5% level with 394 degrees of freedom. This implies that teaching skills of instructors in Mathematics have a great effect on the performance of the students. Furthermore, the more the instructors employed management and evaluation skills in the classroom the better is the performance of the students. Since the instructors in Mathematics possessed the teaching skills strategies, this might give good effect to the students' achievement as well as to the college where they belong.

Table 1 Test of Relationship Between the Performance of the Students and the Professional Skills of the Instructors in Mathematics

Variables Correlated		Computed r-value	Computed t-value	Critical t-value	Decision
Students' Academic Performance	Teaching Skills	*0.2836*	5.619s	1.96	Reject H0
	Management Skills	*0.2315*	4.521s	1.96	Reject H0
	Evaluation Skills	0.1773	3.423s	1.96	Reject H0

Legend: s – significant at 0.05 level of significance

Adediwura, et.al. (2007) study was corroborated with the present findings. It was revealed that there was a positive significant relationship between students' perception of teacher teaching skills and academic performance of students. Galleto's (2004) study was corroborated with the present findings. He revealed that there was a significant relationship between the practical work activities used by teachers in teaching Mathematics IV and performance of students in the subject. Evangelista (1991) study was corroborated with the present findings. The study revealed that evaluation practices had effected high performance in Mathematics. Various exposures of students to appropriate evaluation practices were good predictors of Mathematics grades (Gumban, 1986).

Professional Skills of Mathematics Instructors and Instructors in Mathematics. It was also revealed in the study that Mathematics instructors and instructors in Mathematics were very much skillful in their teaching skills and management skills. This was evidently showed with a weighted mean of 4.30(teaching skills) and 4.26(management skills) as reflected in Table 2. This means that instructors handling mathematics subjects were thoroughly enhanced and skillful in teaching their students. Further, the instructors in Mathematics are similar in some ways of managing their students. This implies that the instructors themselves are knowledgeable in terms of performing management roles.

The Mathematics instructors and instructors in Mathematics were much skillful in evaluation skills with a mean obtained of 4.198. This means that the Mathematics instructors and instructors in Mathematics vary somehow in evaluating students' performance. This implies that instructors lack consistency in terms of evaluation of students' performance practices.

Table 2 Summary Table on the Professional Skills of Mathematics Instructors and Instructors in Mathematics

Professional Skills	Weighted Mean Average	Verbal Description
Teaching Skills	4.30	Very Much Skillful
Management Skills	4.26	Very Much Skillful
Evaluation Skills	4.198	Much Skillful

Perception of Students on Professional Skills of Instructors. In students' perception on teaching skills, management skills, and evaluation skills of instructors in Mathematics, the results showed that the instructors were very much skillful as described by student respondents. As reflected on table 3 the weighted mean are 4.38 (teaching skills), 4.43 (management skills) and 4.37 (evaluation skills) respectively. This means that most often the instructors were very much skillful on the subject matter as demonstrated in the day to day classroom learning activities. Furthermore, the student respondents perceived their instructors in mathematics as capable in making their students successfully go along with classroom works. This implies further that instructors in mathematics are very much objective in giving grades to students and utilizing innovative/non – traditional assessments.

Table 3 Summary Table on the Perception of Students on Professional Skills of Instructors

Professional Skills	Weighted Mean Average	Verbal Description
Teaching Skills	4.38	Very Much Skillful
Management Skills	4.43	Very Much Skillful
Evaluation Skills	4.37	Very Much Skillful

Test of Difference on the Rating of Mathematics instructors and instructors in Mathematics and the Student Respondents in terms of Teaching, Management and Evaluation Skill. It was revealed that there was no significant difference that existed on the ratings of the mathematics instructors and the student respondents on teaching, management and evaluation skills respectively. This was proven through the computed t – values of 0.60, 0.89, and 1.27 respectively. Those t – values did not exceed the critical t – value of 1.96 at 0.05 level of significance with 394 degrees of freedom. This means that the perception of mathematics instructors and the student respondents do not affect at all the ratings of the professional skills.

Table 4 Test of Difference on the Rating of Mathematics Instructors and the Students as to Professional Skills of Instructors

Professional Skills	Students N = 363		Instructors N=33		Computed t-value	Decision
	Mean	Sd	Mean	Sd		
Teaching Skills	4.38	0.74	4.30	0.73	0.60	Accept H0
Management Skills	4.394	0.72	4.264	0.81	0.89	Accept H0
Evaluation Skills	4.373	0.73	4.198	0.76	1.27	Accept H0

Test of Difference on the Rating of Mathematics instructors and instructors in Mathematics and the Student Respondents in terms of Teaching, Management and Evaluation Skills. The instructors in mathematics and student respondents similarly agree on the level of instructors' professional skills. This shows that their level of the teaching skills, management skills, and evaluation skills are of the same degree and at a certain level. In other words, they do not differ significantly. Thus, the result does not provide sufficient evidence to conclude that the perception of instructors in mathematics and the student respondents in terms of teaching skills, management skills and evaluation skills is statistically different. Instructors must utilized and manifest the professional skills effectively when possible and when applicable inside the classroom.

Level of Performance of the Students in Mathematics. Table 5 presents the level of performance of the students in mathematics. The result showed that the weighted mean of the students' level of performance was found "good" with a computed mean value of 2.09. This implies that in general the respondents' level of performance in Mathematics subject was good.

Cuivillas (2004) study corroborated the present findings. He revealed that the grade of students in high school obtained good performance in Mathematics.

Table 5 Respondents' Level of Performance in Mathematics

Level of Performance	Frequency	Mean Value	Description
Excellent	53	2.09	Good
Very Good	66		
Good	107		

Fair	137		
Total	**363**		

The result showed that the performance of students in mathematics subject depends on the teaching, management, and evaluation skills of Mathematics instructors and instructors in Mathematics. The instructors in Mathematics were very much skillful in teaching and management while much skillful in evaluation as perceived by professors/instructors in Mathematics respondents. However, instructors in Mathematics were very much skillful along teaching skills, management skills, and evaluation skills as perceived by student respondents.

Instructors in Mathematics and students viewed the professional skills of instructors in mathematics similarly. Finally, the students' performance in Mathematics was good.

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