
The Performance of the Tertiary Senior Students in Mathematics

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ABSTRACT

Background: Mathematics is vital in the modern education of students nowadays. **Objectives:** the study was conducted to determine the students' performance level in their Mathematics Foundation Courses, Mathematics Major Courses and Practice teaching and to find out if there exist a relationship between the performance outcomes. **Methods:** The quantitative descriptive-correlational method was used in the study where documentary analysis was more appropriate in gathering data which was taken from the grade sheets of the final grades of the students. The population of the study involved 51 fourth year students who were taking BSED major in Mathematics in the academic year 2016-2017. **Results:** The study revealed the students' performance on their Mathematics foundation and Major Courses was on the very good level; and Practice teaching was on the superior level. It also revealed that there was significantly moderate correlation between Mathematics Foundation Courses and Mathematics Major Courses; and Mathematics Major Courses and Practice teaching while Mathematics Foundation Courses and Practice teaching were not significantly correlated. It is recommended for improvement or re-visit in re-designing or updating the instructional course guide on Statistics II and Integral Calculus for the students to have much higher level of learning that would resulted in an excellent level of performance.

Keywords: Performance, Tertiary Senior Students, Mathematics

INTRODUCTION

Decade past, Government, educational agencies, teachers, and curriculum maker reckoned negatively on the low performance of the students in mathematics despite the tremendous effort on heightening this vicious circle. Hence, Performance is an achievement of the students' tasks that the teacher gave to them which is translated into grades⁽¹⁾. Additionally, it is the output of the student's educational goal and the amount of knowledge and skills that student learned in a determined amount of time inside the school that sums up their level of learning in mathematics. On that note, the performance of the students is an indicator of globally competitive and an excellent graduates who possess qualities of a good leader and well-fitted human resource of the country which is one of the major goals of the higher institutions.

However, students in the Philippines were superior in acquiring knowledge; but they have difficulties in employing the knowledge into the next level of thinking other than remembering or telling a fact². This condition is a great evidence of the failing expectations on the performance of students in local and international studies on the mathematics competencies during 2003 and 2004 local and international mathematics olympiads. This is an alarming state for Filipino students which is found lacking in the ability of basic mathematical knowledge which leads them to be unprepared in the college mathematics courses despite the fact that mathematics has a great significance in their future career because having knowledge in mathematics is not just indispensable in measuring the importance of fashion, athletics, technology as well as economics; but it is an asset which people could make use in developing competencies in reasoning, drawing decisions and solving problem in a real-life situation. It is vital in making sense in many aspects in a rapidly changing society because it promotes self-reflection and develops individual potential and ability to face daily challenges in life. Thus, Mathematics is among the basic subjects in any field of study, starting from the basic education up to college level. The purpose of this study is to determine the level of performance of the tertiary senior students in mathematics and to identify if there exists a relationship between the performance outcomes.

METHODS

This study determines the performance level among students utilizing quantitative descriptive- correlational research design in their mathematics foundation and major courses and practice teaching. The 51 fourth year students taking up Bachelor of Secondary Education major in mathematics enrolled in the academic year 2016-

2017 in Eastern Visayas State University-Ormoc City Campus were identified through purposive sampling technique. A documentary analysis matrix were used to present the necessary data which was taken and approved by the registrar officer and the campus director. In analyzing and interpreting the gathered data, the average mean was used. The Pearson r was used to find out if there exists a relationship between the performance outcomes. Ethical consideration was given importance in the study.

RESULTS

Table 1. Summary on the performance of the BSED major in mathematics students in mathematics foundation courses

Courses	Mean	SD	Descriptive Rating
College Algebra (Math 113)	1.8000	0.41665	Very Good
Statistics I (Math 135)	2.0294	0.53863	Very Good
Basic and Applied Mathematics (Math 153)	1.7765	0.31786	Very Good
Grand Mean	1.8686	0.13972	Very Good

Note: N=51 Parameters: E - 1.0; S - 1.1-1.5; VG - 1.6-2.0; G - 2.1-2.5; F/P - 2.6-3.0; FL - 3.1-5.0

Table 2. Summary on the performance of the BSED major in mathematics students in mathematics major courses

Courses	Mean	SD	Descriptive Rating
Advanced College Algebra (Math 125)	1.9961	0.28352	Very Good
Statistics II (Math 145)	2.2686	0.3558	Good
Spherical Trigonometry (Math 123)	1.6431	0.32573	Very Good
Mathematics of Investment (Math 213)	1.9235	0.35866	Very Good
Plane Geometry (Math 253)	1.7216	0.43142	Very Good
Set Theory (Math 233)	1.9039	0.19996	Very Good
Solid Geometry (Math 223)	1.4216	0.26856	Superior
Analytic Geometry (Math 225)	1.7314	0.38078	Very Good
Linear Algebra (Math 243)	1.6098	0.11875	Very Good
Differential Calculus (Math 315)	1.5941	0.31203	Very Good
Solid Mensuration (Math 314)	1.4314	0.33196	Superior
Integral Calculus (Math 325)	2.2647	0.23649	Good
Number Theory (Math 324)	1.9275	0.25774	Very Good
Differential Equation (Math 435)	1.9137	0.37471	Very Good
Grand Mean	1.8107	0.26612	Very Good

Note: N=51 Parameters: E =1.0; S =1.1-1.5; VG =1.6-2.0; G =2.1-2.5; F/P =2.6-3.0; FL =3.1-5.0

Table 3. The performance of BSED major in mathematics students in practice teaching (Prof. Ed. 426)

Performance	f	%	Mean	SD	Descriptive Rating
Excellent (E)	1	1.96%	1.3137	0.19289	Superior
Superior (S)	42	82.35%			
Very Good (VG)	8	15.68%			
Good (G)	0	0%			
Fair/Passing (F/P)	0	0%			
Failure (FL)	0	0%			

Note: N=51 Parameters: E =1.0; S =1.1-1.5; VG =1.6-2.0; G =2.1-2.5; F/P =2.6-3.0; FL =3.1-5.0

Table 4. Correlationship between mathematics foundation courses, mathematics major courses and practice teaching (N=51)

Variable	Pearson r	P-value	Decision	Interpretation	Strength of Correlation
Mathematics Foundation Courses & Mathematics Major Courses	0.517**	0.000	Reject Ho	Significant	Moderate
Mathematics Foundation Courses & Practice Teaching	0.253**	0.074	Fail to Reject Ho	Not Significant	Negligible
Mathematics Major Courses & Practice Teaching	0.637**	0.000	Reject Ho	Significant	Moderate

** . Correlation is significant at the 0.01 level (2-tailed).

DISCUSSION

Table 2 implies that having students equipped with basic mathematical knowledge and skills would make them be prepared in college mathematics courses. Thus, despite the wide considerable discussion regarding the role and value of basic mathematics today, it is still one of those standard courses in the college curriculum in which the importance of foundation courses of mathematics is recognized by the colleges and universities as a gateway to further mathematical courses and beneficial to their future career.

Table 2 implies that students are equipped with necessary skills and facilitate the development of critical thinking skills and that students have a very good foundation on their basic mathematical subjects in which helped them to have a satisfactory if not excellent performance in higher mathematics subjects. Thus, having equipped with mathematics develops students' analytical skills and the ability to work in a problem-solving environment. This result is inline of the Philippine mathematics education aspiration which to empower Filipino students in mathematics by developing critical and analytical thinking skills so that students will acquire a satisfactory if not excellent mathematical knowledge and skills which will eventually transform them into globally competitive and productive human resource in a highly technological society in the future⁽³⁾.

Table 3 implies students are better prepared in higher mathematics courses because theoretically, having a strong background and understanding in higher mathematics moulded them to be competitive in their chosen career. More specifically, students strengthened their knowledge and develop skills through repeated and reflection on their actions through practice teaching as they impart all the learnings back to the classroom.

Table 4 the result which show the significant relationship between mathematics foundation courses and mathematics major courses, this implies that students were not just having knowledge in computing or performing basic mathematical tasks but they were also able to pose and solve mathematical problems; students were able to apply mathematical knowledge and skills and reasoning in other mathematics areas, in other areas of knowledge and in their everyday experiences. On the other hand, the relationship of mathematics foundation courses and practice teaching is not significant to the fact that practice teaching is not just having a deep understanding in mathematics alone but how the practice teacher deliver or impart the knowledge in the class. This is supported by the concept that in order of the teacher to help students understand a specific subject matter, teacher must have knowledge on on how to organized, represented and re-design to the diverse learners on a particular topics, obstacles and issues and then introduced the topic to the learners⁽⁴⁾.

Lastly, the relationship between mathematics major courses and practice teaching is significant, this implies that students are equipped with knowledge and skills in their mathematics major courses, the students would become an effective student-teacher because what had been learned in their mathematics major courses will be put into practice during their practice teaching experience.

CONCLUSION

It is concluded in the study that the BSED students have stronger knowledge and skills in Mathematics courses that lead them to have a very good level of performance which made it an evidence of what Philippine mathematics education aspire for in developing Filipino students to be critical and analytical thinkers. It also concluded that the performance of the students as practice teacher was in an above average level which means that students possess a truly professional teacher and that they deepened their knowledge, developed their skills

and extended their talents and learnings as they bring back all the leanings in the classroom. Thus, there is still a need for improvement or re-visit in re-designing or update the instructional course guide on Statistics II and Integral Calculus for the students to have much higher level of learning that would resulted in an excellent level of performance.

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