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PERFORMANCE OF THE BEED SECOND YEAR STUDENTS IN THE MATHEMATICS IN THE MODERN WORLD

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ABSTRACT: The student's performance plays a significant role in producing the best quality graduates who will become great leaders and manpower for the country. The present research study determined the performance of the Second Year Bachelor of Science in Elementary Education (BEED) students of the College of Teacher Education at President Ramon Magsaysay State University in Mathematics in the Modern World (MMW). The study used a descriptive-correlational and survey questionnaire as an instrument in gathering data. Based on the findings of the study; the performance of the respondents in MMW was classified as good, the respondents performed well in the assessment conducted by the researcher which was classified as good as well in a level of assessment in MMW, there is no significant relationship between the Academic average of the respondents and the level of assessment in MMW. Thus, the researchers recommended that; students are encouraged to strengthen their knowledge in algebra by using social media platforms such as; YouTube, Facebook and other social platforms, the students may spend their spare time reading mathematics books to familiarize themselves with the basic rules in solving math problems in terms of logical mathematics problem that may improve their Level of Performance in MMW or any mathematics-related subject and conduct a similar study are encouraged to have a broader scope.

KEYWORDS: *Assessment, Academic, Performance, MMW*

I. INTRODUCTION

The world has changed from the industrial focus to knowledge and skills based. People in today's world are competing in the expanding global marketplaces. Schools must prepare the students with both knowledge and essential skills that will help them adjust themselves and be able to live in the changed world. Unlike previous century, the 21st century students must learn life skills and also core contents such as math, science, economics, literacy, etc.,¹. The Mathematics in the Modern World (MMW) is a 3-unit subject which is part of the 36 general education units started in 2018 and implemented in all general education curriculum (GEC). MMW involves the nature of explorative mathematics of patterns and as an application of inductive and deductive reasoning. Accordingly, MMW is anticipated to become an instrument for dealing and understanding the complexity of present day living as to personal financial management, making social options, appreciation designs related to geometry, comprehending codes, and fairly allocating limited resources.² MMW replaced the old general education mathematics subjects which had been used in the Philippines since 1996. Due to the effects of Senior High School as mandated by the RA 10533 (K-12 Law), all general education subjects were moved in the Senior High School and replaced by new set of general education subjects. The transition from high school to college leads from light to difficult adjustment of the students. The data revealed that some students are better able to cope and deal with the transition period than others.³ Students think that the transition into college life was easy both academically and socially because the senior year of high school helps them to become independent and the teachers prepared them for the thoroughness of college.⁴ The purpose of K to 12 curriculum which offers additional 2-year education in high school, is to help the students prepare for their college education by providing them sufficient time for mastery of concept and skills.⁵ The impact of this transition from the old curriculum to a more sophisticated curriculum is felt in the higher education especially teachers who have been teaching general mathematics subjects in the past years. The shifting from teaching traditional Algebra, Geometry, Trigonometry, Statistics to Problem Solving, Data Management, and Voting and Apportionment, provides new challenges to teachers. Several studies proved that teaching mathematics has a lot of challenges. mathematics has a lot of challenges. The student's performance plays a significant role in producing the best quality graduates who will become great leaders and manpower for the country. The present research study determined the performance of the Second Year Bachelor of Science in Elementary Education

(BEED) students of the College of Teacher Education at President Ramon Magsaysay State University in Mathematics in the Modern World (MMW).

1.1. Significance of the study

The findings of the study are deemed significant particularly to the following entities:

To the Students. This study was benefited the students to determine their strengths and weakness in the subject and make necessary changes in their study habit.

To the Teachers. This study was benefited the teachers by knowing the strengths and weakness of the students in the MMW and make adjustment in their teaching methodology.

To the Parents. This study was be a help them to become aware about the performance of their children in the subject,

To the Future Researchers. This study would serve as one of their references in conducting a replication study.

1.2. Statement of the Problem:

This study determined the performance of the BEED students of College of Teacher Education in Mathematics in the Modern World. Specifically, the objectives are as follows:

1. What is the general weighted average of the respondents in Mathematics in the Modern World?
2. What is the level of assessment in the Mathematics in the Modern World of the respondents?
3. Is there a significant relationship between the academic performance of the respondents and the performance level of the respondents in MMW?

II. Review of Related Literature

2.1. Mathematics in the Modern World

The Commission on Higher Education (CHED) released CMO No. 20 series 2013 as a guide that defines the New General Education Curriculum (NGEC) in the context of the K to 12 curriculums. General Education is the portion of the curriculum common to all undergraduate students regardless of their major in response to the challenges of the 21st Century. The goal of general education is to produce thoughtful graduates imbued with values reflective of a humanist orientation, conscious of his/her identity as an individual, a Filipino, a member of the global community, and a steward of the environment.⁶ Higher education institutions (HEIs) are allowed to design curricula suited to their own contexts and missions and determine the appropriate means of delivery, support facilities and educational resources to ensure achievement of the set program outcomes. HEIs have the flexibility to determine the appropriate means of delivery to employ in order to ensure achievement of the set program outcomes. One of the general education courses that all second-year college students should take is Mathematics in the Modern World (MMW). This course deals with nature of mathematics, appreciation of its practical, intellectual, and aesthetic dimensions, and application of mathematical tools in daily life. The course begins with an introduction to the nature of mathematics as an exploration of patterns and as an application of inductive and deductive reasoning. By exploring these topics, students are encouraged to go beyond the typical understanding of mathematics as merely bunch of formulas, but a source of aesthetics in patterns of nature, for example, and a rich language in itself (and of science) governed by logic and reasoning. The course then proceeds to survey ways in which mathematics provides a tool for understanding and dealing with various aspects of present-day living such as managing personal finances, making social choices, appreciating geometric designs, understanding codes used in data transmission and security, and dividing limited resources fairly. These aspects will provide opportunities for actually doing mathematics in a broad range of exercises that bring about the various dimensions of mathematics as a way of knowing, and test the students' understanding and capacity.

2.2. Academic Performance of students in Mathematics

The students' performance (academic achievement) plays an important role in producing the best quality graduates who will become great leader and manpower for the country; thus, responsible for the country's economic and social development. ⁷Educational services are often not tangible and are difficult to measure because they result in the form of transformation of knowledge, life skills and behavior modifications of learners.⁸The school personnel, members of the families and communities provide help and support to students for the quality of their academic performance. The participation of the Philippines in TIMSS confirmed this deplorable condition-based from the report posted last 2013 that the performance of Filipino students in national and international surveys on mathematics and science competencies lag behind its neighboring countries like Singapore, South Korea, Hongkong, Chinese Taipei and Japan. ⁹Students' performance in mathematics, as indicated by the grades they achieved, is affected by various factors. Among the various factors, this study will primarily deal with students' affective characteristics, which focus on study habits and study

attitudes, which are then further referred to as study orientations as reiterated by.¹⁰ The data revealed that mathematics performances of schools are positively correlated with (a) the academic performance of school indicated by school leaving pass percentage and also (b) with the performances in subjects other than mathematics. On the other hand, students and teacher ratio seems not to affect the mathematics performance of the schools under study. The requirement of urgent attention to improve the performance of secondary school is indicated considering the societal needs.¹¹

III. Methodology

3.1. Research Design

This study used a descriptive-correlational research design in its attempt to determine, describe and analyze relationships between general weighted average and the level of assessment in Mathematics of the Modern World of BEED second year students in PRMSU – College of Teacher Education, Iba Campus A.Y. 2020 – 2021.

A descriptive correlational method in scientific research refers to a type of study in which information is collected without making any changes to the study subject. This means that the experimenter cannot directly interact with the environment in which he or she is studying in a way that would cause any changes related to the experiment. Although all descriptive correlational method study has the same basic property of avoiding any direct changes in the environment of the study. Still, there are several different types of descriptive correlational methods that perform research in a slightly different way.

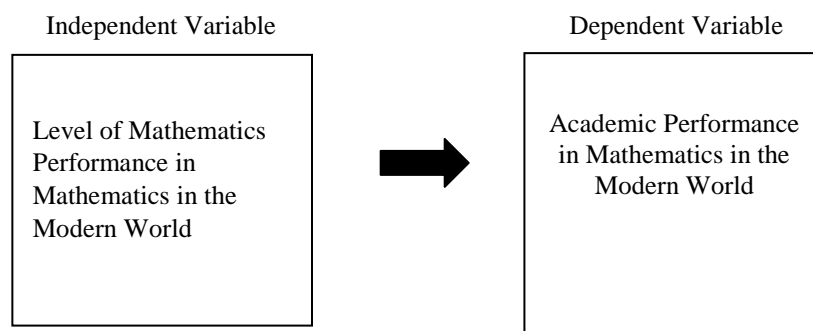
3.2. Theoretical Framework

The theory of B.F. Skinner was based upon the idea that learning is a function of change in overt behaviour. Changes in behaviour are the result of an individual's response to events (stimuli) that occur in the environment. A response produces a consequence such as defining a word, hitting a ball, or solving a math problem. When a particular Stimulus-Response (S-R) pattern is reinforced (rewarded), the individual is conditioned to respond. The distinctive characteristic of operant conditioning relative to previous forms of behaviourism (e.g., connectionism, drive reduction) is that the organism can emit responses instead of only eliciting response due to an external stimulus.

Reinforcement is the key element in Skinner's S-R theory. A reinforce is anything that strengthens the desired response. It could be verbal praise, a good grade or a feeling of increased accomplishment or satisfaction. The theory also covers negative reinforcers – any stimulus that results in the increased frequency of a response when it is withdrawn (different from aversive stimuli – punishment – which result in reduced responses). A great deal of attention was given to schedules of reinforcement (e.g. interval versus ratio) and their effects on establishing and maintaining behaviour. One of the distinctive aspects of Skinner's theory is that it attempted to provide behavioural explanations for a broad range of cognitive phenomena. For example, Skinner explained drive (motivation) in terms of deprivation and reinforcement schedules. It deals with issue of free will and social control. Operant conditioning has been widely applied in clinical settings (i.e., behaviour modification) as well as teaching (i.e., classroom management) and instructional development (e.g., programmed instruction).¹² Parenthetically it should be noted that Skinner rejected the idea of theories of learning.¹³ In the framework, for the Independent Variable frame, it deals with the perception of the respondents in the level of assessment in Mathematics in the Modern World. For the Dependent Variable frame, or known as the effect variable deals with academic performance of the respondents in Mathematics in the Modern World.

3.3. Conceptual Framework

In the framework, for the Independent Variable frame, it deals with the perception of the respondents in the level of assessment in Mathematics in the Modern World. For the Dependent Variable frame, or known as the effect variable deals with academic performance of the respondents in Mathematics in the Modern World.



3.4. Research Instruments

In this study, the researcher used a multiple-choice type of questionnaire as the main instrument in gathering the data. The questionnaire was formulated and developed by the researchers. The first part of the questionnaire is the general weighted average of the respondent in the subject MMW. The last part of the questionnaire is a 50 item test questions about the content of the subject. The research questionnaire was made, through reading other researchers in connection to the subject of Mathematics in the Modern World. The researcher also checked the syllabus and books used by the teacher in teaching MMW to align the content of the questions based from the syllabus and books. To ensure the accuracy precision and the validity of the instrument used in this research and was checked by the thesis Adviser and Mathematics Instructor in the college.

IV. RESULTS AND DISCUSSION

This presents the presentation, analysis and interpretation of data gathered out of the instrument used in the study presented according to the specific problems mentioned.

4.1. Respondent's Academic Performance

Table 1 shows the general weighted average of BEED second year students in Mathematics in the Modern World.

Table 1
Frequency and Percentage Distribution of Respondent's
General Weighted Average

Grade	Percentage Equivalent	Frequency	Percent
1.00	99-100	2	2.9
1.25	96-98	2	2.9
1.50	93-95	3	4.3
1.75	90-92	23	32.9
2.00	87-89	19	27.1
2.25	84-86	15	21.4
2.50	81-83	3	4.3
2.75	78-80	3	4.3
Total		70	100.0
Mean Grade: 1.9 Good			

In seventy (70) respondents, 32.9% got a GWA 1.75 (90-92), 27.1% got 2.00 (87-89), 21.4 % got 2.25 (84-86), 4.3 % got 1.50 (93-95), 4.3 got 2.50 (81-83), 4.3 % got 2.75 (78-80), 2.9 % got 1.00 (99-100), and 2.9 % got 1.25 (96-98) with a mean grade of 1.9 remarks as good.

4.2. Student's Level of Assessment

Table 2 shows the level of assessment of BEED second year in Mathematics in the Modern World of the respondents.

Table 2
Frequency and Percentage Distribution of Respondent's
Level of Assessment in MMW

Score	Descriptive Equivalent	Frequency	Percent
41 – 50	Outstanding	2	2.9
31 – 40	Very Good	11	15.7
21 – 30	Good	31	44.3
11 to 20	Fair	24	34.2
1 to 10	Poor	2	2.9
Total		70	100.0
Mean Score: 23.6 Good			

Out of seventy (70) students, 44.3% got a score of 21-23, 34.2% scored 11-20, 15.7% scored 31-40, 2.9% scored 41-50, and 2.9% scored 1-10 that has a mean score of 23.6 remarks as good. The result implies that

BEED second year students is a hetero section where advance, average and slow learners are merge together and some are struggling in dealing assessment in MMW.

4.3. Test of Significant Relationship between General Weighted Average and Level of Assessment of BEED second year in MMW

Table 3
Test of Significant Relationship between General Academic Average and the Level of Assessment of BEED second year

Grade		Interpretation
Score	Pearson Correlation	-0.163
	Sig. (2-tailed)	0.177
	N	70

Table 3 shows the significant relationship between Academic Performance and Performance Level of BEED second year.

The computed Pearson (r) for academic performance was -0.163 denoted as negligible relationship. The computed significant value was 0.177 which is more than 0.05 alpha level of significance; therefore, the null hypothesis is accepted that there is no significant relationship between the general weighted average and level of performance of BEED second year in MMW. It implies that even students did not perform well in assessment they are still able to manage to pass in MMW. It also revealed that scores in assessment is just one part of the grading scale and there are a lot of things need to consider in giving remarks in subject area.

V. CONCLUSION AND RECOMMENDATION

Conclusion

This presents the summary of the investigation conducted, the conclusions arrived and the recommendations formulated by the researchers based on salient findings obtained in the study. Based on the gathered data and findings of the study, the researchers concluded the following; the academic performance of the respondents in the Mathematics in the Modern World was good. Moreover, the level of assessment of students in the Mathematics in the Modern World was good. Furthermore, there was no significant relationship between the general weighted average and the level of assessment of BEED second year in Mathematics in the Modern World.

Recommendation

In line with the aforementioned conclusions, the following recommendations are made: The students of BEED second year are encourage strengthening their knowledge in algebra such as; rules in operation, combining like terms, familiarization in decimals and percentage, etc., by using social-media platforms such as; YouTube, Facebook, and etc. In order to build their foundation stronger for them to solve a more complex problem that may positively affect their Weighted Average Mean. Moreover, the students may spend their spare time in library to read mathematics books to familiarize on the basic rules in solving math problems in terms of logical mathematics problem that requires a higher thinking order skills and algebraic manipulation that may improve their Level of Performance in MMW or any mathematics related subject area. Finally, future researcher/s who will conduct a similar study are encouraged to have a broader scope such as; the whole class of CTE.

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