

PRE-SERVICE TEACHER EDUCATION: MEETING THE DEMANDS OF THE K-TO-12 CURRICULUM IN GRADE 7 MATHEMATICS IN THE NEW NORMAL

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ABSTRACT: *The study aimed to determine whether the pre-service teacher education curriculum particularly BSED major in Mathematics of the University of Science and Technology of Southern Philippines has met the demands of the K to 12 curriculum in Grade 7 Mathematics in the new normal condition. The Syllabi and the mathematics competencies in the K-to-12 Curriculum for grade 7 level were verified if it were captured in the pre-service teachers curriculum of Bachelor of Secondary Education major in Mathematics programs offered by the University. The study revealed that there is very sufficient coverage of all the content standards of mathematics in Grade 7 Level has been included in the BSED Math Pre-service Teacher Education Curriculum. Therefore, it is highly recommended that the university will continue to offer BSED-Mathematics program as it adequately prepare pre-service teachers in the field of teaching.*

Key Words : pre-service teacher education, k to 12 curriculum, new normal

1. INTRODUCTION

The Philippines rank at the bottom as reflected in the results of the Program for International Student Assessment [1]. It was further added by the results of the three straight year of the National Achievement Test which the national average mean percentage score (MPS) in the Grade 6 NAT continued its downward trajectory at 37.44. It was the weakest performance in the history of the standardized examination of the DepEd. Furthermore, the OECD report [1] revealed that Filipino students' average scores in mathematics was ranked 76th. The examination results can be attributed to poor delivery of the curriculum.

Pre-service teachers curriculum is vital to produce a competent graduates. Theories and practices needed for the pre-service teachers must be properly define in the curriculum. [2], stated that there seems to be difficulty in integrating theory and practice and in articulating two institutional settings – schools and universities – in the preparation of teachers.

[3], revealed that in the teacher education program, it is necessary to develop pre-service teachers' foundation skills both in content and pedagogy as well as communication ability. They need to be taught how to articulate sound mathematical explanations and how to justify their solutions.

The situation calls for the pre-service teachers to be trained to teach learners in the new normal condition and in new learning environments. Skills on using digital technologies to support remote learnings is very important. Additionally, there is the challenge of delivering alternative learning methods for students without the digital devices and internet connectivity. As pointed out by [4], teachers need to be updated on effective pedagogical methods with or without the use of online technologies.

The need to strengthen the pre-service teachers curriculum to meet the demand of the K-to-12 Curriculum and the new normal is vital. Hence, this study was conducted.

2.METHODOLOGY

2.1 Research Design

The study is quantitative in nature, which aimed to determine the gap between the pre-service teacher education curriculum of the University of Science and Technology of Southern Philippines and the K-to-12 curriculum in the Department of Education, specifically high school Mathematics. The contents and the mathematics competencies in the K-to-12 Curriculum for grade 7 level were verified if it were captured in the pre-

service teachers curriculum of

Bachelor of Secondary Education major in Mathematics programs offered by the University. Syllabi and the K-12 curriculum standard in mathematics were compared to gather the data.

2.2 The Instruments

The instruments used in this study are all recent syllabi in the professional education and major courses of the program BSED-Mathematics, which were examined. The competencies for Mathematics in Grade 7 of the K-to-12 Curriculum were also used in the study.

2.3 The Respondents

The respondents consisted of all professors/instructors handling the subjects (BSEd Math) in the Department of Mathematics Education of the College of Science and Technology Education- USTP CDO were all included.

2.4 Data-Gathering Procedure

The Syllabi and the mathematics competencies in the K-to-12 Curriculum for grade 7 level were verified if it were captured in the pre-service teachers curriculum of Bachelor of Secondary Education major in Mathematics programs offered by the University. Syllabi and the K-12 curriculum Standard in mathematics were compared to gather the data.

In addition, teaching competencies that address the new normal environment brought about by the COVID-19 pandemic were likewise determined in order to generate a complete picture of what pre-service teachers truly need before they are deployed to the classrooms. This approach responds to the recommendation of authors especially, [5] who stated that the design of teacher education should be responsive and appropriate to the unique needs of the educational system.

The evaluation of syllabi was done by the researchers were separated from the validation of the instructors who handled the course. Researcher' evaluation and instructors' validation are mostly different and the result can be attributed to the flexible implementation of the syllabi. In addition, some syllabi are not written in detailed; sub topics are not enumerated clearly.

Rubrics were used to determine the extent of sufficiency of the coverage with regard to the content of the syllabi and the mathematics competencies in the K-to-12 Curriculum for grade 7 level were being evaluated.

3.RESULTS AND DISCUSSIONS

TABLE 1. Coverage of the Major Courses Topics in BSED Mathematics Syllabi vis a vis with the K-to-12 Curriculum Grade 7 Content Standards as Evaluated by Researchers and Instructors

Content Standard	Researcher Evaluation (Courses = 27)	Coverage	Instructor Evaluation (Courses = 27)	Coverage
Demonstrates understanding of key concepts of sets and the real number system	8	Very Sufficient	16	Very Sufficient
Demonstrates understanding of the key concepts of measurement	3	Very Sufficient	14	Very Sufficient
Demonstrates understanding of key concepts of algebraic expressions, the properties of real numbers as applied in linear equations, and inequalities in one variable	5	Very Sufficient	14	Very Sufficient
Demonstrates understanding of key concepts of geometry of shapes and sizes, and geometric relationships	4	Very Sufficient	11	Very Sufficient
Demonstrates understanding of key concepts, uses and importance of Statistics, data collection/gathering and the different forms of data representation, measures of central tendency, measures of variability, and probability	3	Very Sufficient	4	Very Sufficient

Based from the researchers’ evaluation of syllabi, there are very sufficient coverage of all content standards in Grade 7 mathematics. The result is confirmed by the instructors who actually handle the subject. The least coverage reflected in the evaluation of the researchers is 3 , while the instructors is 4. It means that out of 27 major courses in BSED Mathematics, at least three of them covers the competencies written in the K-12 content standards in Grade 7 mathematics. Some of the courses which cover the Grade 7 mathematics contents are Math 101 Mathematics in the Modern World, Math 121-Elementary Statistics & Probability, and Math 223 Advanced Statistics.

The difference of frequency evaluation by the researchers and validation by the instructors can be attributed to the implementation of flexible syllabi. In mathematics subjects, preparatory topics needed for the discussion of the main topic were hidden in the syllabi. It only came out when the instructors conducted a review.

In summary, based on the researchers’ evaluation of syllabi and validation of instructors teaching the subjects/courses, it appears that the content standards of Grade 7 Mathematics under K-to-12 program in the Department of Education are emphasized and discussed repeatedly in at least three (3) courses in BSED-Mathematics curriculum. Through this, the pre-service teachers in the said program will be capacitated to teach the mathematics subjects in the Junior High School. Further, the BSED-Mathematics curriculum addressed the demand of the Department of Education with regard to the proficiency and mastery of the subject matter to be taught under K-to-12 curriculum particularly on Grade 7.

4. CONCLUSIONS AND RECOMMENDATIONS

From the analysis of the data as the BSED-Mathematics and the K-to-12 grade 7 high school curriculums are

compared, the researchers claimed that with regard to content standard, no gap was found of all the content standards of mathematics in Grade 7 level. Hence, the BSED teacher education program major in mathematics adequately prepare and capacitate pre-service teachers for teaching grade 7 junior high school mathematics in the Department of Education in old and new normal condition. It is therefore recommended that the program will be continued however, the curriculum must be regularly updated to maintain its high quality standards.

5. REFERENCES

[1] OECD. (2013). PISA 2018 Results. Combined Executive Summaries. *Journal of Chemical Information and Modeling*, 53(9), 1689–1699. <https://doi.org/10.1017/CBO9781107415324.004>

[2] Flores, M.A. (2016). Teacher education curriculum. In J. Loughran & M.L. Hamilton (Eds.). *International book of teacher education*, pp. 187-230. Dordrecht: Springer Press. <https://repositorium.sdum.uminho.pt/bitstream/1822/52318/1/Flores.pdf>

[3] Lomibao, L. S. (2016). Enhancing mathematics teachers’ quality through Lesson Study. SpringerPlus, 5(1). <https://doi.org/10.1186/s40064-016-3215-0>

[4] Rapanta, C., Botturi, L., Goodyear, P. et al. Online University Teaching During and After the COVID-19 Crisis: Refocusing Teacher Presence and Learning Activity. *Postdigit Sci Educ* (2020).

[5] Musset, P. (2010). Initial teacher education and continuing training policies in a comparative perspective: Current practices in OECD countries and a literature review on potential effects (OECD Education Working Papers No. 48). OECD Publishing.