

WEST VISAYAS STATE UNIVERSITY  
COLLEGE OF EDUCATION  
**GRADUATE SCHOOL**  
Iloilo City

VIDEO LESSONS IN MATHEMATICS USING CODE SWITCHING:

A DESIGN-BASED RESEARCH

A Thesis Presented to the  
Faculty of the Graduate School  
College of Education  
West Visayas State University  
La Paz, Iloilo City

In Partial Fulfilment  
of the Requirements for the Degree  
Master of Arts in Education  
(Mathematics)

by

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July 2022

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Segura, Jr., Rufino T. "*Video Lessons in Mathematics using Code Switching: A Design Based Research.*" Unpublished Graduate Thesis. Master of Arts in Education (Mathematics). West Visayas State University, College of Education, La Paz, Iloilo City, July 2022.

Abstract

This study employed design-based research to develop instructional material in the form of video lessons that discuss the least mastered competencies in the 3rd quarter of Grade 9-Mathematics. This study began by identifying the least mastered competencies through conducting a survey. With the help of the mathematics district supervisor, 50 public school teachers who have taught the subject in S.Y. 2020-2021 were reached through the use of the snowball sampling method. The result revealed the following five least mastered competencies: proves theorems on the different kinds of the parallelogram, prove the conditions for similarity of triangles by special right triangle theorems, proves theorems on trapezoids and kites, proves the conditions for similarity of triangles by A.A. similarity theorem, and proves the conditions for similarity of triangles by right triangle similarity theorem. Five video lessons were developed, wherein one competency is discussed in every video lesson. The lecturer employed code-switching as the medium of instruction in presenting the lesson. The developed module was implemented for 40 Grade 9 students. After the implementation, the module was evaluated and rated "acceptable" by the students and the experts. Moreover, the module is rated "highly acceptable" regarding its learning outcomes, style, and presentation. Code-switching was also evaluated and rated "highly

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acceptable" in terms of attention, attitude, and success by the students. The qualitative data analysis through a thematic analysis was also utilized to determine the participants' experiences in the developed module. The result suggested that the video modules were beneficial to them; they have improved their engagement in learning math, even if it is conducted through distance learning. Furthermore, the learners greatly approved the integration of the modules presented in the form of videos and the lecturer's use of Hiligaynon and English to discuss the lessons. They reacted positively to this new platform as supplementary material in their modular learning. As a result, they can better comprehend the concepts discussed, and some testified to have lessened their anxiety about learning mathematics. The developed module achieved its objective and opened opportunities for technology integration to cater to 21st-century learners. The output of this research may be used by other educators as instructional material for their classroom use and to further try out its effectiveness.

*Keywords: design-based research, least mastered competencies, code-switching, Hiligaynon, English, Mathematics*

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