WEST VISAYAS STATE UNIVERSITY
COLLEGE OF EDUCATION
GRADUATE SCHOOL
Iloilo City

STUDENTS' TECHNOLOGICAL SKILLS, PERCEPTION, CLASS PARTICIPATION, AND PERFORMANCE IN ADVANCED STATISTICS: BASES OF AN ENHANCED BLENDED CLASSROOM LEARNING PACKAGE

A Dissertation 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

Doctor of Philosophy in Science Education

(Mathematics)

by

Manuel Ortiz Malonisio

March 2018

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APPROVAL SHEET

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Abstract

This study determined the technological skills, perception towards blended learning, class participation, and performance of thirty Master of Arts in Education students major in English, Social Studies, and Mathematics of Aklan State University enrolled during the Summer of SY 2016-2017. The results revealed that the graduate school students were proficient in using technology. They had advanced skills in basic computer operation and concepts, using Microsoft word, using e-mail and social networks, they also had proficient skills in using Microsoft excel and using the internet in general. However, the same students lack skills in using the SPSS program. Students' perceptions towards blended learning were positive. Convenience, reduce travel time and expenses, improve use of course content, access to web resources, and management of learning skills as independent learners were the students' perceived benefits in blended learning while slow internet connections, the need to exert more time and effort to meet overwhelming information and resources, and lower interaction with other students were the challenges they encountered in the blended learning environment. The graduate school students' class participation was high. They were

prompt in submitting their reflections, online quizzes, and laboratory activities. However, participation in online discussion was low. This may be due to the slow internet connections. Students' performance in Advanced Statistics in pre-test was at the beginning level while their performance in post-test is at proficient level. The increase in the performance of the students in the pre-test and the post-test is statistically significant and supported the potential of the blended learning package in bringing positive and effective learning. The blended learning package was designed and developed using the ADDIE model based on the results in analysis stage on students' technological skills, prior knowledge about statistics as a result of pre-test, and experts' evaluation. The blended learning package was enhanced based on the results on students' perception towards blended learning, class participation, performance in post-test, and experts' evaluation. Experts' evaluations revealed that the initial and enhanced blended learning package was highly acceptable in terms of format and design, learning outcomes, contents, learning activities, assessment procedures, and relevance to the blended learning environment.

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XIII. Grading Plan

Online Quizzes	10%
Assignment/Paper	10%
Midterm/Final Exam	30%
Laboratory Activities	25%
Class Participation	
Online forum	10%
Face-to-Face	10%
Prompt submission	5%
Total	100%

Midterm Grade	50%
Final Term Grade	50%
Final Grade	100%

XIV. References:

A. Textbook

1. Alferez, M. S., & Duro, M. A. (2006). Statistics and Probability. Cainta, Philippines: MSA Publishing House.

2. Bernstein, S & Bernstein, R. (1999). *Elements of statistics II.* McGraw Hills Companies, Inc. USA.

3. Bluman, A.G. (2013). Elementary Statistics. A Step by Step Approach, 6th Edition. New York: McGraw-Hill Co. Inc.

4. Broto, A. S. (2008). *Nonparametric statistics (with computer aided-solutions).* National Book Store, Mandaluyong City.

5. Broto, A. S. (2007). *Simplified approach to inferential statistics.* National Book Store, Mandaluyong City.

6. Mann, P. S. (2004). *Introductory statistics, 5th edition.* John Wiley and Sons, Inc. Singapore.

7. Odicta, G. L. (2015). *Nonparametric statistical tools in data analysis.* Unpublished Instructional Manual.

8. Spiegel, M. R. & Stephens, L. J. (2008). Schaum's Outline of Theory and Problems of Statistics, 4th edition. New York: McGraw-Hill Co. Inc.

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10. Walpole, R., Myers, R., Myers, S. & Ye, K. (2007). Probability & Statistics for Engineers & Scientists, 8th edition. New Jersey: Pearson Prentice Hall.

11. Wilcox, R. (2009). Basic Statistics: Understanding Conventional Methods and Modern Insights. New York: Oxford University Press.

B. Weblinks

1. ocw.metu.edu.tr/pluginfile.php/2410/.../3-**central**%20**tendency**-NC.**pdf**
2. http:// *www.slideshare.net/priyansakthi/methods-of-data-collection-16037781*
3. psut.jo/sites/sababheh/Courses/probability/**hypothesis_testing**%20(1).**pdf**
4. http://www.investopedia.com/terms/n/nonparametric-statistics.asp
5. https://statistics.laerd.com/spss-tutorials/wilcoxon-signed-rank-test-using-spss-statistics.php
6. http://www.statisticssolutions.com/assumptions-of-the-wilcox-sign-test/
7. https://statistics.laerd.com/spss-tutorials/mann-whitney-u-test-using-spss-statistics.php
8. http://tqmp.org/RegularArticles/vol04-1/p013/p013.pdf
9. https://www.statisticssolutions.com/kruskal-wallis-test/
10. http://www.statstutor.ac.uk/resources/uploaded/mannwhitney.pdf

XV. Classroom Rules of Conduct

1. *Food and beverages are not permitted during class hours.*
3. *No assignments shall be done during class time.*
4. *All requirements shall be passed on or before the deadline. In case of late submission, points shall be deducted from the total rating.*

XVI. Emergency Procedures

1. *Be familiar with the location of fire extinguisher and first aid kit in the building.*
2. *Be aware of evacuation procedures and instructions/ symbols on the corridors of the building in case of emergency like earthquakes, fire, etc.*
3. *Call the attention of the instructor in case of classroom accidents or the security guards on post in case of some trouble inside the campus.*
4. *Report immediately to school authorities any problems encountered in the campus for proper solution/guidance.*

XVII. Ideas, Evaluation, etc.

Your ideas, comments, suggestions, questions are welcome. However, discretion on these matters is highly expected. No part of the grade will be based on anything other than what are stipulated in the grading plan.