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Digital gaming in teaching pharmacy vocabulary

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INTRODUCTION

Technical vocabulary is a specialized group of words which belong to a narrow area of language [1]. Knowledge of technical words plays a critical role in subject learning for students at tertiary level [2]. Given the crucial role of technical vocabulary knowledge for subject learning in pharmacy education, there is a need for effective teaching approaches. Linking technology and instructional practices may be an alternative to increase students' motivation and support their learning efforts. We hypothesize that integrating digital game-based activities into classroom may provide learners a positive learning experience that can increase their learning.

AIM/S

This study aims to investigate the influence of in-class digital game-based activities on pharmacy students' technical vocabulary learning performance and explore their perceptions. Following research questions guided the study:

1. What is the impact of in-class digital gaming on pharmacy students' technical vocabulary learning performance?
2. Is there a difference between the perceptions (PU: perceived usefulness; PEU: perceived ease of use; BI: Behavioral Intention) of the experimental group (EG) and control group (CG) about the digital platform?

Acknowledgments (if applicable)

METHOD

A comparative experimental study was conducted on a total of 47 second-year pharmacy students (experimental group=21; control group=26). The experiment lasted a period of 15 weeks in a 2-credit English for Professional Purposes course. Participants in the present study did not have any experience in mobile learning.

400 technical vocabulary were targeted. The Quizlet was chosen as a learning platform since it offers collaborative review games that can be incorporated into classes.

Data for the first research question was collected via 2 multiple choice technical vocabulary tests (50 items each), and data for the second research question was collected using a post-treatment questionnaire (10-item Likert scale designed by Dizon [3]).

Data were expressed as Mean ± SD. Data were analyzed by Man-Whitney-U. The significance level was set at $p<0.05$.

RESULTS

Mean scores of the two vocabulary tests were compared (Table 1). There was a significant difference both in Test 1 ($U=101.5$, $p=0.000$) and Test 2 ($U=153.5$, $p=0.010$) between the EG and CG. The calculated effect sizes were 0.536 and 0.378, respectively. This suggests that in-class digital gaming had a moderate to large effect on technical vocabulary learning.

Table 2 displays the results obtained from the questionnaire administered after the experiment. Results indicated that overall both group of students had positive perceptions about the digital tool used (4.37±0.08). However, there were statistically significant between group differences. The perceptions of the EG pertaining to the usefulness and ease of use of the tool were higher than those of the CG ($U=159$, $p=0.01$, and $U=181$, $p=0.04$, respectively). These finding indicated that in-class gaming have positive impact on students' perceptions.

Table 1. Test scores of the groups

Test score	Group	
	CG (n=21)	EG (n=26)
Test 1	78.85 ±12.88	91.90±6.70*
Test 2	84.38±7.55	89.52±5.72**

*p=0.00; **p=0.01

Table 2. Comparison of perceptions between groups

Perception	Group		p
	CG (n=21)	EG (n=26)	
PU	4.212±0.737	4.738±0.399	0.011
PEU	4.240±0.618	4.571±0.565	0.045
BI	4.000±1.048	4.405±0.768	0.158

PU: Perceived usefulness; PEU: Perceived ease of use; BI: Behavioral intention

CONCLUSION

Present study reports the findings of an experimental study on the effect of in-class digital gaming on pharmacy students' technical vocabulary learning, and their perceptions of its use. In-class digital gaming was found to have significant effect on students' technical vocabulary learning performance. Equally important is the finding that the level of perceived usefulness was higher in the experimental group which suggest that in-class gaming positively influence the technology acceptance and use behaviors of the tertiary level learners.

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