

## Exploring the Effect of Nursing Students' Self-Directed Learning and Technology Acceptance through the Use of Digital Game-Based Learning in Medical Terminology Course

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**Abstract :** Background: The use of medical terminology is essential to professional nurses on clinical practice. However, most nursing students consider traditional lecture-based teaching of medical terminology as boring and overly conceptual and lack motivation to learn. It is thus an issue to be discussed on how to enhance nursing students' self-directed learning and improve learning outcomes of medical terminology. Digital game-based learning is a learner-centered way of learning. Past literature showed that the most common game-based learning for language education has been immersive games and teaching games. Thus, this study selected role-playing games (RPG) and digital puzzle games for observation and comparison. It is interesting to explore whether digital game-based learning has positive impact on nursing students' learning of medical terminology and whether students can adapt well on this type of learning. Results can be used to provide references for institutes and teachers on teaching medical terminology. These instructions give you guidelines for preparing papers for the conference. Use this document as a template if you are using Microsoft Word. Otherwise, use this document as an instruction set. The electronic file of your paper will be formatted further at WASET. Define all symbols used in the abstract. Do not cite references in the abstract. Do not delete the blank line immediately above the abstract; it sets the footnote at the bottom of this column. Page margins are 1,78 cm top and down; 1,65 cm left and right. Each column width is 8,89 cm and the separation between the columns is 0,51 cm. Objective: The purpose of this research is to explore respectively the impact of RPG and puzzle game on nursing students' self-directed learning and technology acceptance. The study further discusses whether different game types bring about different influences on students' self-directed learning and technology acceptance. Methods: A quasi-experimental design was adopted in this study so that repeated measures between two groups could be conveniently conducted. 103 nursing students from a nursing college in Northern Taiwan participated in the study. For three weeks of experiment, the experiment group (n=52) received "traditional teaching + RPG" while the control group (n=51) received "traditional teaching + puzzle games". Results: 1. On self-directed learning: For each game type, there were significant differences for the delayed tests of both groups as compared to the pre and post-tests of each group. However, there were no significant differences between the two game types. 2. On technology acceptance: For the experiment group, after the intervention of RPG, there were no significant differences concerning technology acceptance. For the control group, after the intervention of puzzle games, there were significant differences regarding technology acceptance. Pearson-correlation coefficient and path analysis conducted on the results of the two groups revealed that the dimension were highly correlated and reached statistical significance. Yet, the comparison of technology acceptance between the two game types did not reach statistical significance. Conclusion and Recommend: This study found that through using different digital games on learning, nursing students have effectively improved their self-directed learning. Students' technology acceptances were also high for the two different digital game types and each dimension was significantly correlated. The results of the experimental group showed that through the scenarios of RPG, students had a deeper understanding of medical terminology, which reached the 'Understand' dimension of Bloom's taxonomy. The results of the control group indicated that digital puzzle games could help students memorize and review medical terminology, which reached the 'Remember' dimension of Bloom's taxonomy. The findings suggest that teachers of medical terminology could use digital games to assist their teaching according to their goals on cognitive learning. Adequate use of those games could help improve students' self-directed learning and further enhance their learning outcome on medical terminology.

**Keywords :** digital game-based learning, medical terminology, nursing education, self-directed learning, technology acceptance model

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