SERIOUS GAME E-BABY: SKIN INTEGRITY AND AUSUBEL'S MEANINGFUL LEARNING THEORY IN NURSING

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Abstract

Introduction: Based on the importance of professional qualification for nurses and preterm newborns' care, considering the analysis of child mortality in the world, we have developed a serious game to facilitate learning in neonatal nursing. The serious game e-Baby: skin integrity is a digital tool that offer students the possibility to perform clinical evaluation and provide care to the premature baby in a virtual simulation (safe environment for learning), before going to the scenario of practice. Objective. Evaluate the impact of the serious game e-Baby: skin integrity in the cognitive learning of nursing students.

Method: Multicentered and randomized experimental research involving pre and posttest, control and experimental group (serious game as intervention). Forty-seven nursing students from two different Brazilian universities were enrolled in this study and they were randomly assigned to control or experimental groups (n=22 and n=25, respectively). The pedagogical context to insert the serious game was an extracurricular course about clinical evaluation of skin and interventions related to this issue on preterm newborns, in alignment with the serious game theme. It was used parametrical analysis (t Student), considering normal distribution, and linear regression.

Results and Discussion: The students from both universities were considered the same sample because they all matched inclusion criteria and homogeneity statistical test on pretest (p=0,154). After t Student test, this study demonstrated that control and experimental group were statistically similar (p=0,089). However, performance median in control group was 9.5 (SD= 19.13) and experimental group was 19.65 (Standard Deviation [SD]=20.63), showing that despite statistically similar, the outcomes were better for students who accessed and used the serious game as educational support during the course. Considering performance in the same group through time, both had significant outcomes (p=0.03 for control group and p=0.00 for experimental group) revealing cognitive learning in the theme. Linear regression isolating group and university was applied for the variable performance, revealing statistically significant difference comparing one university to other’s performance of students (p= 0.01), regardless group allocation. We believe it might be due to Ausubel’s learning theory, theoretical referential in this study, considering that students from the university with better results had previous content about preterm newborns, which was not contemplated on the other university curriculum. It reinforces the meaningful learning when people connect new information to previous experiences, building knowledge. Regression also showed that the experimental group would present significantly higher performance compared to control group in statistics (p=0.01), considering one university only (fixing this variable).

Conclusion: Despite this study did not show statistically significant findings comparing groups on the serious game use, it demonstrated that the experimental group presented better performance through central tendency measures’ analysis. Additionally, it reinforces Ausubel’s meaningful learning theory by showing superior results among students who already had this content in their curriculum. Finally, the validated serious game e-Baby: skin integrity can support learning in neonatal nursing by providing interactive experience and overall higher performance.

Keywords: Educational technology, neonatal nursing, nursing students, simulation training, infant premature.