Background

Technology may provide contemporary educators with tools to engage students using a computerized gaming format. Gaming can provide opportunities that incorporate critical thinking and collaboration with millennial nursing students.

The purpose of this study was to test the effect of a computerized game on the learning outcomes of junior baccalaureate nursing students related to concepts of fluid and electrolytes.

Methods

- **Design**: Quasi-experimental one group pretest/posttest design.
- **Sample**: A convenience sample of junior level baccalaureate nursing students (n=32).
- **Data Collection**: Demographic data of participants included: age, living arrangements during the semester, employment while attending school, hours per day spent on the computer. Pretest and posttest constructed with NCLEX style questions and selected by nursing faculty utilizing Bloom’s taxonomy
- **Intervention**: Family Feud style PowerPoint computer game intervention (University of Michigan, 2012). A pretest was administered one week after the fall semester began. Intervention was given six weeks later to half of the group (n=16) one day, then to the other half (n=15) two days later (one student was released from the study). Posttest given seven weeks after intervention. The students’ studied electrolyte concepts the prior semester.
- **Data Analysis**: Utilizing paired t-test.

Results

- Pretest and posttest contained 10 questions with each correct answer awarded 10 points while incorrect answers were awarded 0 points.
- Test questions were selected based on Blooms Taxonomy.
- Pretest scores ranged from 39.92 – 74.08 with a mean score of 57 (SD = 17.08)
- Posttest scores ranged from 47.70 – 82.30 with a mean score of 65 (SD = 17.30).
- Significant differences were found between the pretest and posttest scores (t= 2.627, p = .013).

**Figure 1. Family Feud Style Game**

Conclusions

Computer games promote enjoyable active learning, collaboration, and learning retention of difficult nursing concepts. The nursing faculty is immediately provided with feedback related to students’ understanding of concepts which increases opportunities for student-faculty interaction and remediation.

The use of computer gaming strategies incorporated into classroom instruction may provide the essential fiber that millennial students desire to enhance engagement and learning for the 21st century and beyond.

There is a need for future research regarding computer gaming to determine if it is a valuable teaching strategy to improve learning outcomes. Research needs to include not only the millennial student but also non-millennial students as well.

Student Responses

“Glad it was a cooperative effort.”
“Competitive spirit was good, made me want to work to get the answers.”
“Nice set up and fun!”
“Loved it”
“Was a good review.”
“I remember more from games or activities than just lecture.”