Chang, M. et al. (Eds.) (2019). Proceedings of the 27th International Conference on Computers in Education. Taiwan: Asia-Pacific Society for Computers in Education

Apply Zuvio system to explore student's learning effective in the biostatistics class

Kuo-feng Wu
Assistant Professor, Department of Nurse-Midwifery and Women Health, National Taipei University of Nursing and Health Sciences
Doresses Liu PhD, RN
1.Department of Nursing, Wan Fang Hospital, Taipei Medical University, Taipei, Taiwan
2.School of Nursing, College of Nursing, Taipei Medical University, Taipei, Taiwan
3. Center for Nursing and Healthcare Research in Clinical Practice Application, Wan Fang Hospital, Taipei Medical University

Abstract: The nursing education system learning training is focus on improving technical skills. Most students directly into the workplace after graduation. For this reason, they are more interested in technical courses than basic courses. Students' learning effective reflect teachers' teaching quality and learning effective. In this research, the researcher will using the Zuvio cloud digital platform to expand the learning environment and evaluation methods. The sample of this study is all of two-year technical program student, they are less interested in the biostatistics of this research course. Researcher will through different design in teaching methods, in mid-term and final-term courses. Compare with difference teaching methods of learning effective, to showing which is better. Researchers will collect data in the biostatistics course, all students enrolled in research, not only compare teaching methods, but also through data to analysis framework about the student cost the time how to influence on the final exam results.

Keywords: learning effective, Zuvio, paired t test

1. Introduction

Recently, the popularity of smart phones and the increase in mobile, student spent time for Internet have increased. Market demand for related application software is expanding all over the world. For this reason, Student learning style is changed from traditional single classroom learning to multi-network learning. Teachers will shift from the traditional teacher-centered teaching method to the student-centered technology application teaching method.

Biostatistics is a compulsory course in the field of nursing. How to apply the knowledge learned in the classroom to the empirical curriculum and the workplace is a challenge for many students. In order to enable students to grasp the concept of the course, researchers will adopt a hybrid learning approach in the class. Teaching methods include traditional teaching methods, increasing mobile phones, lithography computers, and computer operations application in the class. Web platform interaction helps researcher to elucidate the gap between the learners' ability and the learning objectives in the class. Web platform allows the teacher proper interventions to make sure their learning needs. (Johnson CE, Keating JL, Boud DJ, et al, 2016). Zuvio has four major features, including: roll call, pre-class preparation, class interaction, and after-school tracking. This study will pre-set the questions in the Zuvio system before class. Researchers will use the Zuvio cloud digital platform to expand the learning environment and evaluation methods in the class.

Research Questions

The following research questions were proposed:
Research purpose1: After biostatistics course, students' learning effectiveness will be improved.
Research purpose2: New teaching biostatistics method that applicate literature review was more effective than traditional teaching method.

2. Literature Review

Outcome-based education is the ability that learners expect to have after completing a study or graduation (CEDEFOP, 2009; Gallavara et al., 2008), this ability-based learning was according to the core competencies of students and was defined from the education objectives for teacher's teaching and student's learning guide. The core competence of nursing student was included direct patient care, readiness for safe, reliable care provision is more critical (Hwang et al., 2016). In the past, in Korea,

670

there was a research that developed a 1-week classroom based patient safety coursed for second-year medical school students. They was found that the frequency of medical errors and adverse outcomes in student's awareness was changed after the course significantly. (Myung et el., 2012)

In this research, researcher will using ZUVIO online teaching and learning platform in, this platform was designed by Xue-Yue Technology. (ZUVIO, 2013).Through ZUVIO, researcher will collected the data about Problem-Based Learning, PBL Questionnaire to test five learning ability variety. Those ability include self-directed learning, team-work/collaboration, communication, problem solving, critical thinking, (Al-kloub, et al., 2013; Terry 2010; Wells 2009). Through pre-test and post-test to collate data and through paired t-test to evaluate student's learning outcomes variety.

Furthermore, researcher will compare student score between midterm exam and final exam. Further explain difference teaching methods which one have better learning outcomes.

3. Method

This study was using a total of 20 two-year technical program student participated. Students during the first year, they mainly learning about nursing basic knowledgeThey was enrolled in the Department of Nurse-Midwifery and Health student in biostatistics course. This research is comprised the quasi-experimental group (n=20); those with similar characteristics to the group (age, gender, and year).

Firstly, in the first biostatistics course, researcher will using Problem-Based Learning, PBL Questionnaire to test five learning ability variety.Through paired t-test to evaluate student's learning outcomes variety.The five-learning purpose was designed from National Survey of Student Engagement (NSSE) and College Senior Survey in UCLA.

Before midterm exam, adopting traditional teaching method and strengthening calculation ability in Biostatistics course. Between the tenth week and the seventeenth week. Adopting student to read literature review learning the concept of biostatistics.The final exam will through by reading the statistical reports from nurse field article and student will write their perceptions about biostatistics knowledge, evaluating student's final exam outcome to determine the student's learning quality. During the tenth week to the seventeenth week, student not only learning biostatistics calculate but also principle. The researcher will assign a definition and corresponding score to each paragraph of text. In the same time, converting qualitative text results into quantified scores.Finally, through comparing result about the differences between the two points from midterm exam and final exam. Further explain which teaching methods have better learning outcomes.

4. Expected results

Through the combination of information technology and biostatistics teaching, this study expects to get the following two results:

Through the paired t test, the student's learning performance has growth significantly.

Comparing traditional teaching methods and applications Zuvio in the literature review teaching method in biostatistics class, the latter teaching method is better than former.

References

Barrett, Terry (2010). The problem-based learning process as finding and being in flow. Innovations in Education and Teaching International. 47 (2), 165–174.

CEDEFOP (European Centre for the Development of Vocational Training) (2009).\The shift to learning outcomes: Conceptual, political and practical developments in Europe. Luxembourg: Office for official publications of the European Communities.

Gallavara, G., Hreinsson, E., Kajaste, M., Lindesjöö, E., Sølvhjelm, C., Sørskår, A. K., & Zadeh, M. S. (2008). Learning outcomes: Common framework-different approaches to evaluation learning outcomes in the Nordic countries.

Hwang, J.I., Yoon, T.Y., Jin, H.J., Park, Y., Park, J.Y., Lee, B.J., 2016. Patient safety competence for final-year health professional students: perceptions of effectiveness of an interprofessional education course. J. Interprof. Care 30 (6), 732–738.

Johnson, C. E., Keating, J. L., Boud,D. J.,Dalton,M. ,Kiegaldie, D., Hay,M., McGrath,B., McKenzie,W. A., Nair, K. B. R., Nestel,D., Palermo, C. & Molloy, E. K., Identifying educator behaviours for high quality verbal feedback in health professions education: literature review and expert refinement. BMC Med Educ 2016;16:96. doi:10.1186/s12909-016-0613-5.

Myung, S.J., Shin, J.S., Kim, J.H., Roh, H., Kim, Y., Kim, J., ... Kim, S.W., 2012. The patient safety curriculum for undergraduate medical students as a first step toward improving patient safety. J. Surg. Educ. 69 (5), 659–664.

ZUVIO. (2013, October 15). ZUVIO. Retrieved from http://www.zuvio.tw/.