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POSTGRADUATE INSTITUTE OF MEDICINE
UNIVERSITY OF COLOMBO

SELECTION EXAMINATION FOR POSTGRADUATE CERTIFICATION IN MEDICAL EDUCATION - JANUARY 2021

Date : 18th January 2021 Time: 9.30 a.m. – 10.30 a.m.

Answer question 1 and any one (01) out of questions 2 and 3.
Answer each question in a separate book.

Question 1

You have been asked by the Director of your hospital to conduct a 1-hour introductory session on 'online learning' as a Continuous Professional Development (CPD) activity for the medical and other health professions staff in the hospital. Outline a detailed plan of how you would conduct the session including what you would do before, during and after the delivery of the session and a summary of the content that would be discussed. (100 marks)

Question 2

Please read the following abstract and answer the questions below.

Three-dimensional Virtual Reality as an Innovative Teaching and Learning Tool for Human Anatomy Courses in Medical Education: A Mixed Methods Study.

Yasser Alharbi, Mubarak Al-Mansour, Radi Al-Saffar, Abdullah Garman, Abdulrahman Alraddadi

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Journal: Cureus
Date of publication: 24 February 2020
Volume number: 12
Issue number: 2
Page: e7085

Abstract

Introduction Poor knowledge retention is one reason for medical student attrition in learning and has been a huge concern in medical education. Three-dimensional virtual reality (3D-VR)-based teaching and learning in medical education has been promoted to improve student learning outcomes. This study aimed to determine the effectiveness of 3D-VR in knowledge retention in human anatomy courses as compared to traditional teaching methods among medical students.

Contd…..2/

Methods A convergent mixed methods design was utilized to evaluate learning outcomes in terms of short- and long-term knowledge retention scores among students using 3D-VR and those using traditional models and to describe students' experiences and views of the use of 3D-VR as a teaching and learning tool.

Results Male students who used the 3D-VR tool had significantly higher short- and long-term knowledge scores than males who used the traditional methods. Meanwhile, females who used traditional methods showed significantly higher short-term knowledge scores than females who used 3D-VR.

Conclusion Medical students described 3D-VR as a learning tool with a great deal to offer for learning human anatomy as compared to traditional methods. Therefore, we recommend adding the use of 3D-VR in the anatomy curriculum. However, several 3D-VR limitations were also identified, which may hinder its utilization for teaching and learning. These concerns must be addressed before 3D-VR tools are considered for implementation in medical education human anatomy courses.

2.1. Give **three (03)** reasons why the study recommends using 3D-VR for anatomy curriculum. (15 marks)

2.2. Give **one (01)** finding in this study that does not support the above recommendation. (05 marks)

2..3. Explain **two (02)** strengths of the above study. (20 marks)

2.4. Explain **two (02)** deficiencies of the above abstract that reduces the scientific value of the study. (20 marks)

2.5. Describe a precaution that you would take if you are to adopt the findings of this study. (15 marks)

2.6. Write the reference of the publication of the above abstract using an accepted referencing style. (25 marks)

Contd.....3/

Question 3

Please read the following abstract the journal BMC Medical Education and answer the questions below.

Does blended problem-based learning make Asian medical students active learners?: A prospective comparative study

Abstract

Background Asian educators have struggled to implement problem-based learning (PBL) because students rarely discuss their work actively and are not sufficiently engaged in self-directed learning. Supplementing PBL with additional e-learning, i.e. 'blended' PBL (bPBL), could stimulate students' learning process.

Methods We investigated the effects of bPBL on tutorial group functioning (discussion, self-efficacy, self-directed learning, active participation, and tutor's perceived authority) and students' level of acceptance of the e-learning elements. We compared PBL and bPBL in a medical university in Japan. In the bPBL condition, the tutor's instructions were replaced with online materials and short quizzes. After the course, a 13-item questionnaire using a 5-point Likert scale was distributed regarding the tutorial group functioning of the tutorial group (influence of discussion, self-efficacy, self-directed learning, active participation, and tutors' authority). The mean scores of subscales were compared with analysis of covariance. Knowledge levels were measured using a pre-test post-test design. A multiple regression analysis was performed to explore the association between e-learning acceptance and the subscales related to PBL.

Results Ninety-six students participated in the study (PBL: n = 24, bPBL: n = 72). Self-efficacy and motivation for learning triggered by group discussions was significantly higher for students in bPBL ($p = 0.032$ and 0.007, respectively). Knowledge gain in test scores was also significantly better in the bPBL condition ($p = 0.026$), and self-directed learning related positively to the acceptance of blended learning ($p = 0.044$).

Conclusions bPBL seemed more effective in promoting active learning and improving knowledge, without affecting tutors' authority. Implementing e-learning into PBL is suggested to be an effective strategy in the Asian context.

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3.1. Summarize the key finding/s of the above study. (10 marks)

3.2. Briefly discuss the relevance of this study for teaching and learning. (20 marks)

3.3. Briefly describe **four (04)** advantages of problem-based learning. (20 marks)

3.4. Briefly describe **four (04)** barriers that you need to overcome to implement problem-based learning in the Sri Lankan context. (30 marks)

3.5. Briefly describe **two (02)** interactive online teaching learning activities that could be used to teach medical student/ health professions students. (15 marks)

3.6. State a medical education journal that you know of other than the ones mentioned in this paper. (05 marks)