



BABCOCK
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COLLEGE OF POSTGRADUATE STUDIES

2022/2023 PhD Thesis Abstract

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RT: Developing and Implementing a Software Application to Improve Nursing Students Performance in Fundamentals of Nursing in Babcock University

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AB: The educational environment is meant to optimize student learning using the suitable learning approach. One of such is multimodal learning. Multimodal learning is a teaching approach that combines more than one teaching method in students' learning. Studies on multimodal learning and its benefits on learning outcomes have been done in different fields of study but it appears there seem to be none in nursing education in Nigeria. Overtime, in Babcock University School of Nursing Science, there is poor performance in the course, Fundamentals of Nursing. Therefore, the study developed and implemented a software application to improve Babcock University School of Nursing students' performance in the course, Fundamentals of Nursing.

The study adopted a design and developed intervention research design. A needs analysis was conducted to establish the existing performance of students who have undertaken the course in the past five years, that is, 2017–2021. Using the ADDIE framework, a total population of 88 200L nursing students of Babcock University School of Nursing Science formed the sample size that participated in the study. The developed software application was used concurrently with the traditional face to face classroom teaching to complement the learning process of the students. It was designed to include features such as flashcards, puzzles, games and videos. With the Delphi technique, the validity and reliability of the software application was determined using Medical

Evaluation Website Quality Evaluation Tool (MEWQET) and System Usability Scale (SUS). MEWQET was administered to software developers while SUS was administered to nursing experts and students. Data (needs analysis, mid- and end-of-semester examination scores) were analysed with descriptive and inferential statistics (T-test and one-way ANOVA) at 5% level of significance.

Findings showed an average trend in the students' performance over the studied retrospective years (2017-2021) with mean scores ranging between 49.48 ± 9.25 and 53.05 ± 9.08 . A software application was developed which showed a usability value of 73% and 82% for MEWQET and SUS respectively. The multimodal learning in 2022 when compared with traditional learning from 2017-2021 showed a significant difference in the performance of the students (2017: $p = 0.00$; 2018: $p = 0.00$; 2019: $p = 0.00$; 2020: $p = 0.00$; 2021: $p = 0.00$). Furthermore, out of the 88 students, results showed a significant influence of the multimodal learning on the performance of 46 students who engaged with the software application at both the mid-semester ($p = 0.01$) and end-of-semester examinations ($p = 0.01$), when compared with students who did not engage with it.

In conclusion, this study showed that the software application improved the students' performance in the course, Fundamentals of Nursing. It is recommended that consistent use of the multimodal learning approach by nurse educators in teaching Fundamentals of Nursing and other nursing courses should be encouraged.

Keywords: Blended learning, Fundamentals of Nursing, Multimodal approach, Software application, Traditional learning

Word Count: 458

Abbreviations: RFN: Researcher's Full Name, RD: Researcher's Department, RS: Researcher's School, RE: Researcher's Email, RAE: Researcher's Alternate Email, RP: Researcher's Phone Contact, RT: Registered Title, MS: Main Supervisor, ME: Main Supervisor's E-mail Address, SP: Main Supervisor's Phone Contact, CS: Co-Supervisor, CE: Co-Supervisor's E-mail Address, CP: Co-Supervisor's Phone Contact, AB: Abstract

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