Opinion
Volume 10:9, 2022

Journal of Health Education Research & Development

ISSN: 2380-5439 Open Access

Utilizing Wearable Technology for Project-based learning in Engineering Technology Education

Jens Rosenberg*

Centre for Educational Research, Western Sydney University, Sydney, NSW 2751, Australia

Introduction

One of the engineering disciplines with the fastest global growth is biomedical engineering. BME professionals are widely used in the healthcare and health technology sectors. As a result, their education must equip them to handle the challenge of a technology environment that is rapidly expanding. Analysis of biomedical signals and systems is crucial to the undergraduate BME curriculum. Unfortunately, students frequently undervalue the value of their coursework because they fail to acknowledge how important it will be to their future careers. In this study, we suggest leveraging blended learning environments to create fresh learning opportunities within the framework of a course on biological signals and system design in order to increase students' enthusiasm and interest in the course material. The health care and health technology sectors, hospitals and other institutions, academic institutions, governmental organisations, and national regulatory bodies all employ a lot of BME people. In fact, the World Health Organization (WHO) recently stated the vital role that biomedical engineers play in the advancement of healthcare systems. Thus, BME education must equip upcoming biomedical engineers with fresh talents to apply their knowledge and instruments of analysis, design, and implementation for problem-solving within intricate healthcare systems. Analysis of biomedical signals and systems is crucial to the undergraduate BME curriculum. Analysis of biological and medical signals for diagnostic and therapeutic reasons requires the extraction of useful information. For instance, it is possible to examine cardiac impulses to predict a patient's risk for a heart attack. It is possible to analyse muscle signals and extract properties that are then used to control robotic limbs.

Analyzing biological signals also makes it possible to identify the systems that produce or control them. For instance, investigating brain signals can help us comprehend how the brain works while we sleep. Consequently, the course "Biomedical Signals and Systems Analysis" offers a chance to apply abstract ideas and mathematical techniques to actual issues. Even if their future professions are relevant, BME undergraduate students frequently undervalue the significance of their courses because they do not see how they will directly benefit their future professional endeavours. They exhibit a lack of enthusiasm and desire as a result, which results in inadequate competency development. Implementing activities that let students develop their knowledge in a compelling and realistic real-world context can help close this knowledge gap. There are several ways to provide BME students practical experiences throughout the curriculum, enhancing their learning and engagement and helping them become more prepared to seek professions in business, academia, or other fields.

Computer simulation, lab experiments, design courses, guest lecturers, design projects supported by the industry, hospital field tours, placements at medical device businesses, and internships are some of these approaches. To enhance BME education, instructional strategies like project-based learning and challenge-based learning have also been suggested. With the help of these methods, students work together to discover answers to issues involving important discipline-related concepts, strengthening their disciplinary knowledge and critical thinking abilities. Additionally, it has been discovered that using these strategies helps students become more motivated and conscious of the connections between what they learn in class and their future job.

Discussion

In this paper, from the viewpoint of a teaching practice, we propose the use of blended learning environments in a course on "biomedical signals and systems analysis," which combines direct instruction, experiential learning in real-world situations, and cloud-based collaborative development environments. Our solution is based on a fresh interpretation of the "experiential learning space" that was previously put out. Notably, we use wearable technology to monitor behavioural and physiological signs in real-world situations during experiential learning exercises. To boost students' academic performance and competency development, we want to increase their perceptions of the course content's relevance, interest, and motivation. The concept of relevant, interesting and the desired contribution to competency development in this work must be clarified in order to support the proposal of blended learning spaces for experiential learning supported by wearable technology and cloud-based collaborative development environments. These concepts are incorporated into the underlying presumptions that guide the creation of pertinent learning opportunities in the suggested blended learning venues.

Situational interest increases focus and commitment to the subject, which helps learning. The learner is more likely to go farther and become more invested in the subject if it turns into a personal passion. As a result, interest is a predictor of academic achievement and, consequently, of the development of competency. When the assignments were thought to be pertinent, this shift from situational to personal interest happens. In this view, educational relevance is thought to pique interest since it helps people become competent at their current or future occupations or duties under certain existing conditions and criteria [1-5].

Utilizing real-world circumstances in learning experiences is therefore crucial for competency development because it emphasises the purposeful nature of learning and the possible benefits that students may derive from their coursework or new skills. The notion of "how to learn," or the instructional strategy used to support students' learning, is still up for debate. Various strategies may be taken into consideration in order to advance in this direction. However, there is a need for genuine, long-lasting alternatives built on a constructivist, student-centered strategy. This viewpoint advocates "experiential learning," which is said to be more effective than any other type of instruction because it supports students' active engagement in the learning process and encourages them to code and create learning within their condition and reality.

Conclusion

The goal of this work is to improve the learning outcomes and competency development of BME undergraduate students by fostering active learning

***Address for Correspondence:** Jens Rosenberg, Centre for Educational Research, Western Sydney University, Sydney, NSW 2751, Australia, E-mail: jensr43@gmail.com*

Date of Submission: 07 September, 2022, Manuscript No. jbhe-22-76011; **Editor Assigned:** 11 September, 2022, PreQC No. P-76011; **Reviewed:** 20 August, 2022, QC No. Q-76011; **Revised:** 24 September, 2022, Manuscript No. R-76011; **Published:** 29 September, 2022, DOI:10.37421/2380-5439.2022.10.100042

experiences that will increase their perception of the relevance, interest, and motivation for the course material. The results of this study demonstrate that the evidence gathered revealed that this technique had a favourable impact on these variables, despite the fact that it was unable to demonstrate its better effectiveness and efficacy. However, this impact entails a greater financial outlay for the purchase of wearable technology, a greater effort and time commitment on the part of the professor during the design, and greater levels of planning and execution of the learning experience. Therefore, additional research is necessary to demonstrate the beneficial effects and support the financial commitment needed to scale the educational intervention.

Conflict of Interest

None.

References

1. Barsaglini, Alessio, Giuseppe Sartori, Stefania Benetti and William Pettersson-Ye, et al. "The effects of psychotherapy on brain function: A systematic and critical review." *Prog Neurobiol* 114 (2014):1-14.
2. Dickman, Morris S. "Von Economo encephalitis." *Arch Neurol* 58 (2001):1696-1698.
3. Eisenberger, Naomi I and Mona Moieni. "Inflammation affects social experience: implications for mental health." *World Psychiatr* 19 (2020):109.
4. Fava, Giovanni A., Chiara Rafanelli and Elena Tomba. "The clinical process in psychiatry: a clinimetric approach." *J Clin Psychiatry* 72 (2011):2931.
5. Patton, George C., Susan M. Sawyer, John S. Santelli and David A. Ross, et al. "Our future: A Lancet commission on adolescent health and wellbeing." *Lancet* 387 (2016):2423-2478.

How to cite this article: Rosenberg,Jens. "Utilizing Wearable Technology for Project-based learning in Engineering Technology Education." *J Health Edu Res Dev* 10 (2022): 100042