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Teaching Applied Education Courses Online

There is growing demand for online courses in higher education, and applied education courses are no exception. This alternate mode of delivery leverages advances in information and communication technology to increase the geographical reach of education and training. Not only does online learning offer a wider geographic range, it also accommodates the needs of students with different learning styles. However, this educational opportunity also comes with challenges to teachers—namely transitioning courses from traditional in-class delivery to online delivery cannot be achieved by simply copying files from one folder to another. It is a shift in paradigm from *teaching* to *facilitating* learning.

The strategies proven successful in the classroom are not always effective in online learning. Although blending online learning with classroom teaching has become fairly routine, questions remain about how to fully deliver online courses, as well as about their effectiveness. In this article, I discuss my experience as a student and as a teacher and summarize the outcome of my research in online learning. Online learning, for the purpose of this article, is the use of internet and e-resources for the delivery of online courses. Although my research and my teaching experience is primarily in applied education, this discussion should be equally applicable to all branches of higher education.

Old-School Mindset and Enlightenment

In the mid-90s, the internet was still at a nascent stage and its use for education was mostly limited to reading a guidebook about how to use the internet. Although distance education was practiced, the marriage of applied education to distance learning never seemed practical. Moreover, distance learning in formal education didn't have a significant presence before the ubiquity of the internet. Educated during the old-school era of learning from a "sage on the stage," it was hard for me to convince myself of any other ways of teaching or learning. This idea was further reinforced after I taught classroom-based applied and technical courses for many years at colleges and universities. Despite the fact that I was using the internet to learn about various software, updating my know-how about state-of-the-art technologies by reading online reviews, and fixing my home furnace by watching online videos and following step-by-step instructions online, I held a firmly entrenched belief that online learning was not suitable for applied education.

However, I changed my stance when I had to develop content for a construction risk-management course, of which a significant component needed to be delivered online. I began reflecting on my teaching, and it immediately struck me that I was already heavily relying on online learning. I was asking my students to review online lessons to clarify their understanding of diagrams representing the influence of force on building elements, to watch videos about the operation of excavators at construction sites, and to research online different connection types of steel structures.

Not only has online learning been successfully used in applied education, but it has also become an essential component for effective learning. Instant availability to information and access to resources have changed the way we teach and the way our students learn; therefore, online learning has become a formidable part of teaching and learning.

Investigation in Online Learning

The goal of applied education is to prepare job-ready graduates to contribute to the economy in a socially responsible way. The market focus and society readiness of applied education graduates is a driving factor for students. Adamuti-Trache, Hawkey, and Schuetze (2006) conclude that "graduates from applied education programs experience a more rapid integration into the labor market as compared to graduates from liberal arts education programs." Although it is now routine to blend online learning with in-class delivery, online learning as the sole mode of delivery in applied education courses is generally still considered impractical.

However, online learning is gradually gaining currency as an alternative, and often the preference, to traditional classroom-based teaching and learning. Additionally, many applied education degrees now offer online modes of delivery. Some research also suggests that student performance in online learning is either similar or better when compared to traditional modes of learning. On the other hand, however, there are concerns about online learning, which range from the efficacy of the technology to student performance.

I was motivated by the question regarding the effectiveness of online learning. I began to research the effectiveness of online learning for applied education from the perspectives of students and teachers. During my research, I took and completed online courses, reviewed online courses that were available publicly by different institutions, and conducted a questionnaire survey with students and teachers. This article summarizes some of the outcomes of my research.

Interaction is Less in Online Learning

For the questionnaire survey, I approached students enrolled in a variety of construction courses and instructors

who taught students enrolled in various applied education courses. Out of 3,646 students and 906 instructors, 191 (5.2 percent) students and 107 (11.8 percent) instructors responded to the survey. One of the outcomes of the survey was that students and instructors felt there is less interaction among students, as well as less interaction between instructors and students, in online courses compared to courses held in the classroom. Additionally, of the respondents, 69.2 percent of students and 72.6 percent of instructors felt that interaction among students is significantly less or slightly less in online courses. Similarly, 65 percent of students and 72.6 percent of instructors feel that interaction between instructor and a student is significantly less or "slightly less" in online courses compared to classroom-based courses. While this information is similar to my personal experience as a teacher and a student, it is insightful that a comparable number of students and instructors felt that there is less interaction in online courses.

"In online learning, the onus is on students; therefore, students need to be proactive. The role of instructors, then, is to be facilitators—to guide students so they can achieve learning outcomes efficiently and effectively."

Addressing Lack of Interaction

As noted above, one of the challenges in online learning is the lack of interaction, which we can address in two ways. The first way, and perhaps the most obvious, is to create an environment conducive for interaction among students. Teachers should also foster an environment where students can interact with them as they would in a traditional class setting—a place where students can raise their hands, ask questions, and the teacher responds immediately. Today, there are innovative learning platforms and delivery strategies to address this issue.

Yet, the second and more meaningful way to address a lack of interaction is to recognize it as a limitation and then design courses in such as a way that students can achieve optimal outcomes. This can be done by making course objectives more descriptive and content more interactive. For example, a learning objective in a physics course, such as "Solve problems involving motion in one dimension," is clearly written and follows a standard practice of good, objective writing. However, for students working independently, the statement doesn't define the depth and breadth of anticipated knowledge. A search using Google for "one dimension motion" results in documents with contents ranging from a few pages to a few chapters. In a classroom setting, the objective is only a framework that is explained and worked out during the teacher's interaction with the class. For an online learner, ambiguity in depth and breadth of coverage can be frustrating. Learning outcomes and objectives for online learners need to be further expanded to include the expected depth and output.

It is essential that online courses not only expand objectives, but also organize content to suit students' needs. The availability of information does not necessarily equate to access of such information. One of the key findings of my research and my experience in classroom is that students need strong motivation and encouragement to go to and use available resources. In online learning, the onus is on students; therefore, students need to be proactive. The role of instructors, then, is to be facilitators—to guide students so they can achieve learning outcomes efficiently and effectively. In my in-class courses, I notice students often skip reading assignments or the videos posted on their learning platform. Students are more eager to complete reading assignments and watch video resources when I create guided questions and quizzes that connect learning outcomes to the resources. When I took online courses, one strategy that I found that worked for me as a student was having the content divided into components, with each component followed by quizzes or exercises.

Additionally, as a teacher, I realized that my students may need input for translating the information given to them into knowledge. In the pyramid of data, information, knowledge, and wisdom, data is at the bottom and wisdom is at the top (Ackoff, 1999; Bernsetin, 2009). Students, especially online learners, often spend a lot of time navigating through data and information, without gaining the ability to process the information and climb to the higher levels of knowledge and wisdom. Input from the instructor is critical during the processing stage where scattered information is connected to build knowledge.

Furthermore, students should be able to relate that knowledge to real-life problems. This is more important for applied education courses, as most of the students in applied education courses know the career they will be entering. In the same questionnaire survey mentioned above, 84 percent of the students responded that they enrolled in courses "knowing exactly" or "with some knowledge" about the career goal of those courses. Because students in applied education know the career they're entering, it is frustrating for them to acquire additional information without knowing its practical significance. In the absence of valuable interaction with teachers, and in order to keep students engaged, online learners need dynamic content that shows a link between individual course components and how it contributes to their career goal.

Conclusion

Online learning is already a large part of in-class teaching, and there is also a growing demand and need for offering courses completely online. In offering online courses, the challenge for teachers is that simply duplicating the content of in-class teaching is not sufficient. For an optimum learning experience in online courses, students need a clearer description of depth and breadth of the expected learning objectives. Furthermore, learners may get lost in the flood

of information; therefore, it is the teacher's role to facilitate students to connect information and build knowledge.

What techniques have you used to make online learning more effective for your students? Let us know in the comment section below or on Facebook!

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Join Dr. Subedi in today's NISOD webinar, "Online Courses: Increasing Learning Effectiveness," as he continues the conversation about how to increase the effectiveness of online learning. Register now!

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