Achievement in Online vs. Traditional Classes

E. Lea Witta
University of Central Florida, USA

INTRODUCTION

Universities and colleges constantly attempt to address student needs by offering courses in various time frames. Because it is difficult for teachers to enroll and attend classes during the "normal" two- or three-day format for 15 weeks, graduate classes in education are typically offered as a one evening per week class. In summer, when teachers usually are not working, classes may be offered in an alternative format meeting for longer periods of time in each class session but for fewer weeks. There are, however, questions concerning the changes in class scheduling. Although the seat time in an eight-week extended period class is equivalent to a 15-week class, are the learning outcomes equivalent? According to Rayburn and Rayburn (1999), if only responses on multiple choice Accounting exams were considered, there was no effect of class length. If, however, problem solving was also considered, there was a statistically significant effect based on length of the class.

In addition, in recent years, there has been widespread interest in using technology to solve some of education's critical problems—increasing student learning, providing flexible formats, making classes more accessible for diverse students (e.g., older, working)—to improve the current and projected shortage of teachers and school administrators. Many methods (e.g., online courses, interactive video) have been utilized to provide a more flexible format and to reduce travel time for commuting students. With the use of Web-based technology or online courses, seat time is not known. If a student accesses the particular lesson online for an hour, the instructor does not know if the distant student was really reading the lesson—or simply left the computer on. Consequently, seat time cannot be a criterion for these classes. This suggests a further question, if online methods are used, are learning outcomes equivalent?

The current study was an attempt to answer these questions when dealing with a master's-level educational research class. Specifically, the purpose of the current study was to determine if there were differences in the mid-term and final examination results of the class between a traditional 15-week class, two eight-week intensive summer classes, and an eight-week online summer class.

LITERATURE REVIEW

The amount of time spent in a classroom (commonly called seat time) has been a standard for judging the value of a class for years. Schools have established policies that if a student is absent for a specified number of classes, the student cannot pass the class—regardless of knowledge. Higher education institutions have used the number of minutes of classroom meetings to determine the hours of credit for a class. Yet, many professionals have argued that performance—that is, attaining objectives—should be the focus of evaluation. Carnevale (2001) suggested assessing outcomes rather than mode of instruction or time in study. Seemingly in response to this, the National Council for Accreditation of Teacher Education (Performance, not seat time, 2000) has shifted from assessment of seat time to performance-based evaluation. Consequently, the new NCATE standards emphasize results that show the student's competence rather than seat time (Equity and high standards, 2000). This situation has encouraged the development of Web-based classes.

Distance Education

The basic criterion for distance education is distance between the teacher and the student. Distance education is not new. This technique was begun in the 19th century with correspondence education (Klesius, Homan, & Thompson, 1997). It has, how-

ever, changed from the correspondence delivery method, through radio methods, to today's computer and interactive video techniques.

Although more classes are being offered via distance education (Tucker, 2000), the findings regarding the effectiveness of the courses are mixed. For example, Brown and Liedholm (2002) reported live students perform significantly better than virtual students; Colorito (2001, as cited by Russell, 2001) found that online students out perform on-campus students; and Gagne and Shepherd (2001) found no differences in performance between online and traditional students (see Russell, 2001, for a more comprehensive listing of studies). Other researchers have contended that differences in online and traditional students are not due to mode of instruction or distance, but rather to the differences in the populations (DiBiase, 2000) or that instructional design, not delivery mode, impacts learning (Carnevale, 2001).

Currently, distance education has been used for high school students as an alternative method to earn credentials in the General Education Development (GED) program, to obtain college credits (Green, 1996), or in attempts to revitalize curricular programs (Fucci & Hueston, 1997). Some universities have developed dual-degree partnerships with interested businesses to provide on-site, on-demand graduate programs (Haynes & Pouraghabagher, 1997). And, some universities have developed programs to deliver education to rural areas or cultural groups (Monaghan, 1996).

Prior researchers in distance education have investigated student satisfaction, communication techniques, teaching behavior, and change fostered (Moore & Thompson, 1990). In addition, interaction with the instructor has been central to the success of a distance education program. When a distance education program has active support, some researchers have found no differences in program rating between home and remote sites. Thyer, Polk, and Gaudin (1997), however, reported that live instruction was rated significantly higher at a college campus than distance learning. They add that distance learning has not yet demonstrated comparable outcomes in terms of student learning.

CONDUCTING THE STUDY

In the summer of 2000, the researcher was assigned two master's-level research classes to be taught in an eight-week time span. Although the seat time for the class was the same as the 15-week class taught the previous Spring semester, because the class only met eight times, each session was longer than the 15-week session. In addition, the classes were given 10 homework assignments and a research proposal as the final project. Because the quantity of work encompassed in an eight-week span seemed overwhelming, there was some concern about the time students had to reflect on research methodology and, as a result, the quality of learning. Consequently, a midterm examination identical to the one used during the Spring semester, a 50 item multiple choice exam, was given to the summer classes.

In the Fall 2000 semester, the researcher began to construct a Web-based version of the same class to be offered during the Summer 2001 session. When the class began, students were assigned to groups of four. Each group was given a private discussion room. Online PowerPoint presentations were used to emphasize key points. This class was conducted in an 8-week time period. The Web class was also given 10 homework assignments and a research proposal as the final project. However, nine of the homework assignments were group rather than individual assignments. Again, the same midterm was used.

In addition, each of the four classes had an "open book" 100-point final examination. Although the final exam was not identical for the four classes, the content covered was. Students were all asked to distinguish between various forms of studies, to critique written articles, and to construct in outline format hypothetical studies using instructor-selected topics. The same text was used in all classes. Because the midterm examinations were identical and the final examinations were not, scores produced by the midterm and the final were analyzed individually using analysis of variance in SPSS rather than a multivariate procedure.

Related Content

Wikis in Collaborative Educational Scenarios: Integrated in LMS or Standalone Wikis?
Marc Alier Forment, Xavier De Pedro, Maria Jose Casañ, Jordi Piguillemand Nikolas Galanis (2012). *International Journal of Distance Education Technologies (pp. 72-81).*
www.irma-international.org/article/wikis-collaborative-educational-scenarios/73935

A Distance Learning System for Delivering Appropriate Studying Materials and Stimulating Learner Volition
Leonard Barolliand Akio Koyama (2004). *International Journal of Distance Education Technologies (pp. 1-17).*
www.irma-international.org/article/distance-learning-system-delivering-appropriate/1622

Coping with Accessibility and Usability Challenges of Online Technologies by Blind Students in Higher Education
Samuel Muwanguziand Lin Lin (2012). *Intelligent Learning Systems and Advancements in Computer-Aided Instruction: Emerging Studies (pp. 269-286).*
www.irma-international.org/chapter/coping-accessibility-usability-challenges-online/61974

K-Nearest Neighbors Relevance Annotation Model for Distance Education
Xiao Ke, Shaozi Liand Donglin Cao (2013). *System and Technology Advancements in Distance Learning (pp. 85-99).*
www.irma-international.org/chapter/nearest-neighbors-relevance-annotation-model/68753

Online Mental Training Using WebExcellence
Emma J. Stodel, Laura G. Farresand Colla J. MacDonald (2005). *Encyclopedia of Distance Learning (pp. 1390-1397).*
www.irma-international.org/chapter/online-mental-training-using-webexcellence/12287