

## Chapter 12

# Examining the Relationship Between Course Management Systems, Presentation Software, and Student Learning: An Exploratory Factor Analysis

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### ABSTRACT

*This research examines the relative impact of students' in-class behaviors (i.e., attendance and participation) by assessing student perceptions of the value of instructional technologies, such as eCollege course management systems and instructors' PowerPoint presentations. The results of the study through exploratory factor analyses revealed that 13 items were divided into three factors (electronic presentations, online-course management, and effective classroom behavior) with 53 percent explained variance in instructional technologies' impact on student learning. ANOVA results indicated significant differences in online-course management and perceived impact of electronic presentations on students' classroom behavior among respondents who used the online-course management system. Respondents who used multiple online-course management features viewed it more favorably and did not believe that it had a negative impact on classroom behaviors, such as attendance or class participation compared to those who used fewer features. Implications for construct refinement and future research are discussed.*

## INTRODUCTION

Over the last decade we have witnessed an increase in faculty using a variety of instructional technologies to share and deliver information, including video conferencing, electronic mail, faculty Web sites, and course management systems (CMS). In their 2005 report, *Growing by Degrees*, Educause reported that of the 890 responding colleges and universities in the United States and abroad more than 90 percent used a CMS. Over 65 percent of higher education institutions offering face-to-face courses also offered courses online (Allen & Seaman, 2005). As the interest in distance education and instructional technologies has grown, formats used to reach out to learners unable to attend traditional classes has also grown. Bates (1995) characterizes this growth as a four-generation process, moving from the basic correspondence course to high bandwidth, multi-media courses. Students have gone from interacting with their instructors and classmates via United States Postal Service paper-based mail and the telephone to interacting via Web-based chat, discussion boards, and audio or video connections which allow for both synchronous and asynchronous dialogues. These technologies provide the opportunity to enhance the learning environment in face-to-face courses as well as distance courses.

This study explores the relationship between student learning, classroom behaviors, and the use of eCollege and PowerPoint in an upper-level course required for all business majors. The course, *International Business*, introduces students to the fundamentals of global business operations. During the fifteen-week semester, the instructor and students meet for three 50-minute sessions each week. An interactive approach comprising a combination of classroom lectures, case discussions, and individual and group activities is used to introduce students to the course material.

CMS technology is used to support student learning and deliver course content. According

to the report, *Growing by Degrees*, this type of course is considered “Web-facilitated” and delivers up to 29 percent of the course content online, but the course is essentially a face-to-face course (Allen & Seaman, 2005). Given the nature of the global marketplace, it is critical that the latest economic data (i.e., currency exchange, inflation, and stock market rates), cultural and business practices, ethics and social responsibility issues, trade agreements, and business decisions be provided for students in a timely manner. To fulfill this goal, updated material is regularly placed on the eCollege Web site used in this course. The CMS also includes PowerPoint files, readings, homework assignments, links to Web sites, and announcements.

In addition to CMS instructional technology, lectures include PowerPoint presentations created by the textbook publisher, which the instructor regularly updates with current information. Presentations are delivered with the classroom lights on and the instructor moving around the classroom to engage learners. The PowerPoint slides are constantly evolving based on student and peer faculty feedback, best teaching practices, and current business developments.

## Course Management System Literature Review

Many of the same instructional technologies enhance both distance education and traditional classrooms. For faculty, using a CMS frees the faculty member from having to remember to bring additional handouts to class for students absent from the previous session or students from having to seek out a classmate to determine changes in course assignments. Using a CMS expedites many of the mundane administrative tasks of both instructors and students (e.g., posting grades, providing feedback, delivering assignments, and making announcements). Such effective, practical applications were identified as early as 1995 (Campus Computing Survey, 1995). Student

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