Online Teaching and Learning Literature Review

A recent study by Talent-Runnels, et al reviewed the literature for teaching and learning online. The authors organize their reviews into four topics: course environment; learners’ outcomes; learners’ characteristics; and instructional and administrative factors. The authors found, among other things, the following:

1. “...Research results showed a negative correlation between the impact scores and instructor evaluations. The more students experienced technical problems, the lower they rated their instructors, demonstrating a need for technical support for the courses...” [p.114]

2. “...with the rapid advancement of technology, online instruction has emerged as an alternative mode of teaching and learning and a substantial supplement to traditional teaching. In the academic year 2000-01, 90% of public 2-year and 89% of public 4-year institutions offered distance education courses...” [p.93]

3. “...They [Davidson-Shivers, Tanner, and Muilenberg (2000)] found that chats provided a direct, immediate environment for responses, whereas listserv responses were delayed but more focused and purposeful. These researchers reasoned that in asynchronous discussions, students had more time to think about their responses and that the increased thinking time improved the depth and quality of responses...” [p.94]

4. “...Their results suggested that it is important to establish a community of learners. Research-based suggestions included establishing study groups early, modeling and reinforcing effective communication, identifying potential problems, and designing a plan for dealing with those potential problems...” [p.97]

5. “...The researchers found that students’ positive experiences during the interaction online could be promoted by the instructors’ providing prompt feedback, participating in the interaction, encouraging social interaction, and employing collaborative learning strategies...” [p.101]

6. “...Berge (1999) pointed out that the instructional design, rather than the delivery system (e-mail, chat sessions, listserv, and the like), affects the quality of online discussions and the learning that takes place...Critical to understanding online interactions is to realize that they involve a continuum from teacher-centered to student-centered participation...” [p.103]

7. “...They [Im and Lee 2003/2004] found that synchronous discussions were more useful for promoting social interaction and asynchronous discussions were more useful for task-oriented communication. Based on these results, Im and Lee suggested that synchronous and asynchronous discussions should be used for different educational purposes in online courses...” [p.103]

8. “...Clearly, researchers have just begun to understand and delineate the variables of online pedagogy as they ponder whether online classroom culture should be similar to or different from face-to-face classrooms, consider how the online environment can mimic traditional classroom discussions, analyze scaffolds to maximize opportunity for individualizing learning, and propose ways that online interactions can improve or enhance learning. These decisions need to be made before effective evaluation systems for online instruction can be implemented...” [p.104]
9. “...Given the methodological challenges of research in this area, we did find that most studies comparing online and traditional classes concluded that both methods of delivery were adequate. In some studies, students in the online classes outperformed students in the traditional classes and vice versa…” [p.109]

10. “...Researchers are starting to investigate the complex relationships between learner characteristics, delivery technologies, and instructional design. Research is needed not only to better inform the design of instruction but also to better effect changes in the technology itself, so that both the teachers and the students are able to learn in supportive environments…” [p.112]

11. “…The majority of students using online services were older than the typical undergraduate student. These students were adults who had significant roles in the community and were highly motivated and focused on achieving specific learning outcomes. Even though convenience is an important factor, studies have found that the quality of the instructional design was crucial in providing a successful learning experience, even with a highly focused and motivated student…” [p.112]

The study analyzed 91 articles and used 76 of them. The authors did not use the 15 articles because they were about general distance education and not online courses in particular. Their article provides an excellent appendix of each article’s methodology (qualitative or quantitative), purpose of the study, sample, and research methods. Over half of the selected studies used quantitative methods, while the other half were a mix of qualitative and mixed-methods. The study itself is not a meta-analysis, but a literature review.

The authors note that because online learning/teaching is still a relatively new field, there is more to be studied. Additionally, more well-designed research is needed. The study includes a good section on future research.

The applicability to the community colleges is that as online offerings increase, colleges will need to keep up with the growth—not only in ensuring that there is enough bandwidth to handle all of the server/internet usage, but also in providing enough support to both instructors and students. According to a Chancellor’s Office “Distance Education Report”, since 1995-96, distance education course sections grew 808%. Instructors need training on how to use the software and training in instructional design techniques. If students are not familiar with the online format, they will need to learn how to use the software and be able to navigate it effectively and efficiently.


Additional abstracts of research can be viewed at our website at: http://www.cccco.edu/SystemOffice/Divisions/TechResearchInfo/ResearchandPlanning/AbstractsofResearch/tabid/298/Default.aspx

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1 You can view the “Chancellor’s Office Distance Education Report” at: http://www.cccco.edu/SystemOffice/Divisions/AcademicAffairs/DistanceEducation/Reports/tabid/768/Default.aspx