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Fawn E. McCracken

Crown College

Joann S. Olson

University of Houston-Victoria

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Is It Worth It?

Examining the Educational Benefits of Synchronous Activities in an Online Theology Course

Fawn E. McCracken, Crown College, USA

Joann S. Olson, University of Houston-Victoria, USA

Abstract: To explore the effect of adding synchronous activities to an online course, one section of a theology course was conducted in an asynchronous environment while the second section incorporated weekly Adobe Connect sessions. No significant differences were found on measures of academic achievement, student satisfaction, or classroom community.

As online education continues to grow, educators are looking for ways to increase engagement and participation in online courses. As internet bandwidth becomes increasingly affordable and accessible, many institutions are looking to incorporate synchronous activities such as web conferences or “live” sessions delivered using technologies like Adobe Connect. Quite often, these synchronous formats are incorporated into learning environments that had previously been fully asynchronous.

Intuitively, this move makes sense—providing opportunities for increased “real-time” student-student and student-teacher contact should increase engagement in the course (Falloon, 2011; Pattillo, 2007) and promote community (Hrastinski, 2008). Including synchronous sessions has also been shown to increase activity in asynchronous activity (e.g., discussion posts) within the course (Spencer & Hiltz, 2003). Hrastinski (2008) also suggested that asynchronous e-learning results in more cognitive, information-processing participation whereas synchronous e-learning may foster “personal participation” (p. 54) leading to increased commitment and motivation.

Incorporating synchronous technologies into an online course can present challenges—especially as learners who may have chosen online education as a way to study “on their own time” now find they must be at their computer at a specific day and hour—but if this new venue provides real educational benefits for the student, it should be seriously considered. This case study of two sections of an online course, one fully asynchronous and the other incorporating weekly synchronous activities, explored the following research questions: (1) Is there a significant difference in student achievement and satisfaction when using synchronous video conferencing sessions in a generally asynchronous distance education course? and (2) Is there a significant difference in students’ sense of learning community and social community when add synchronous video conferencing sessions to a primarily asynchronous distance education course? In other words: Is it worth it?

Research Design and Theoretical Framework

The study was conducted using two sections of an accelerated (5-week), 3-credit undergraduate course in theology offered by the Adult and Graduate Studies Division of a small, faith-based college in the Upper Midwest. Both sections were offered during the same calendar period; were taught by the same instructor; and used the same syllabus, assignments, and grading scale. Researchers worked with the instructor to identify materials related to one assignment each week that would be highlighted and

discussed during the weekly synchronous session. Students in the section of the course that included synchronous sessions were required to participate in one Adobe Connect session each week; the instructor facilitated one session on Thursday evening, led another on Saturday morning, and also made the recordings available to students. Students chose the session that fit their schedule.

After registering for the course, students were randomly assigned to either the fully asynchronous (ASYNC) or the asynchronous+synchronous section (ASYNC+SYNC). However, because all other courses in this program are fully asynchronous, we recognized that students might not be able or willing to participate in required activities that were scheduled at a particular time. Therefore, we e-mailed students selected for the ASYNC+SYNC section before the class began, explained the format of the class and the additional requirement of participating in a synchronous session, and asked them if they were willing to participate. When a student declined, we moved that student to the other section of the class and asked a student assigned to the fully asynchronous section if they would be willing to switch to the ASYNC+SYNC section. While this procedure was time-consuming and may have resulted in selection bias, we felt it was important to honor our students' time and expectations in this way. There were 16 students in the ASYNC+SYNC section; 22 were enrolled in the fully asynchronous section.

The two sections of the course were taught using the same syllabus and assignments, but we worked with the instructor to identify one writing assignment each week that he would highlight within his synchronous presentation by presenting relevant content and taking time to talk through the assignment. Initially, we had hoped to mask the submitted assignments, before they were graded, so that the instructor would evaluate the "targeted" assignment without knowing if the student was in the ASYNC+SYNC section. Logistically, however, this seemed to create an excessive administrative burden for both academic staff and the instructor, and he returned to his regular routine of grading. Anecdotally, we noticed that students in the ASYNC+SYNC section were more likely to turn in assignments after posted deadlines, possibly because there was insufficient time between the synchronous session (for those choosing the Saturday session) and the assignment deadline (generally Sunday evening).

During the synchronous sessions, the instructor used Adobe Connect and talked through PowerPoint presentations. Based on challenges we had previously encountered in other classes using this technology, we decided in advance to mute students' microphones. As the instructor gave his presentation, he would pause to ask and answer questions; students responded using the chat feature of Adobe Connect. Although this did limit some of the spontaneity of a "live" discussion, we chose this strategy in an attempt to minimize potential technical difficulties or frustrations that students might experience.

Following the course, we administered an end-of-course evaluation to both sections requesting demographic information and overall course and instructor ratings. We also asked participants to complete the Classroom Community Inventory (Rovai, Wighting, & Lucking, 2004) to evaluate social community and learning community, and we asked for their perceptions of various course elements. Social community items include "I trust others in this course" and "I feel that students in this course care about each other." Measures of learning community include items such as "I feel that I am given ample opportunities to learn in this course" and "I feel that my educational needs are not being met in this course."

Findings and Conclusions

We compared the two sections on various measures, including course grades, satisfaction with course and instructor, and measures of social and learning community (as measured by the Classroom Community Inventory). Given the tendency of the literature to highlight the benefits of increasing synchronous participation, we anticipated that scores on all of these measures would be higher in the ASYNC+SYNC section of the course. Student demographics are found in Table 1.

Table 1: Student demographics

	<u>ASYNC</u>	<u>ASYNC+SYNC</u>
Age 20-29	2	3
30-39	4	2
40-49	3	3
50-59	1	2
60-69	0	0
Female	6	5
Male	4	5

Course Grades and Assessments

After final grades were submitted, we compared two sections, finding that while overall course grades and assignment-specific grades were slightly higher in the asynchronous section, none of these differences rose to the $p < .05$ level as detailed in Table 2.

Table 2: Comparison of Course Grades Between ASYNC and ASYNC+SYNC Sections

	<u>ASYNC</u>		<u>ASYNC+SYNC</u>		<i>t</i> -test	<i>p</i>
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>		
Discussion Forums	92.3	29.4	85.0	50.6	1.304	.205
“Targeted” Assignments	92.8	18.5	88.0	46.4	0.885	.388
Final Course Grade (all assignments)	88.8	9.2	84.1	22.1	0.804	.431

Course Evaluation

At the end of each class, students completed an online evaluation regarding various aspects of the course—timely grading, instructor feedback, and so on. Students were also asked to give an “overall” rating of both course and instructor. We conducted a one-way ANOVA to test for differences on these measures of student satisfaction between the two sections, with results displayed in Table 3. Once again, there were no statistically significant differences between the ASYNC and ASYNC+SYNC, due, at least in part, to low response rate and resulting small sample sizes.

Table 3: Comparison of Selected Course Evaluation Items between ASYNC and ASYNC+SYNC Sections

	<u>ASYNC</u>		<u>ASYNC+SYNC</u>		<i>F</i>	<i>p</i>
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>		
The instructor was actively engaged in course discussions.	4.1	.994	3.9	1.197	0.165(1, 18)	.689
I was challenged to look at my life, my goals, and my worldview through this course.	4.3	.675	4.3	.675	0.000(1, 18)	1.000
The instructor integrated a biblical perspective throughout the course.	4.6	.516	4.5	.972	0.083(1, 18)	.777
The instructor provided adequate feedback on assignments.	4.3	.483	4.1	.153	0.327(1, 18)	.574
On a scale of 1 to 5, with 5 being excellent, how would you rate this course?	4.2	.667	4.1	.738	0.142(1, 17)	.711
On a scale of 1 to 5, with 5 being excellent, how would you rate the course instructor?	4.33	.707	4.4	.699	0.043(1, 17)	.839

We asked students in the ASYNC+SYNC section several additional questions. When asked, 7 of the 10 students who responded from the ASYNC+SYNC section indicated that they had taken at least five online classes, and only two indicated that this was their first online class. Students in this section were also asked to describe their comfort level with new technology on a 5-point scale (with five being “excellent”); all students selected 4 or 5. (There is a possibility that students who consider themselves less comfortable with technology would have opted out of participating in the ASYNC+SYNC section.) When asked whether using Adobe Connect for chat sessions was an added benefit to the course, eight of the ten respondents selected “strongly agree” or “agree,” with two selecting “neutral”; there were no “disagree” or “strongly disagree.”

The end-of-course student evaluation also allows students an open-ended opportunity to share other comments or concerns. One student in the ASYNC section described the course as “helpful and informative,” and another commented that the professor “had very good interaction during the discussion boards and afterwards in the submitted lessons.” Comments from the ASYNC+SYNC section included “some of the lecture times were off track and not focused on class materials” and “some of the chats could have been more beneficial.” At the same time, another ASYNC+SYNC student felt that “Adobe Connect is good for personal instruction.” One ASYNC+SYNC student commented specifically on our decision to mute students’ microphones, suggesting that “Adobe Connect would be better if we each had a microphone as well. Chatting is not the best way to communicate in a group setting. It felt like a conference call.”

Social Community and Learning Community

In addition to evaluating the impact of the additional synchronous sessions on academic achievement and student satisfaction, we were interested in the connection between this modality and students' perception of community within the online classroom. We included the 10-item Classroom Community Inventory (Rovai, Wighting, & Lucking, 2004) on the end-of-course questionnaire. See Table 4. Indeed, participants' sense of learning community and social community were found to be slightly higher in the ASYNC+SYNC section; an ANOVA showed no statistical significance in this difference.

Table 4: Comparison of Perceived Social Community and Learning Community between ASYNC and ASYNC+SYNC Sections

	<u>ASYNC</u>		<u>ASYNC+SYNC</u>		<i>F</i>	<i>p</i>
	<i>Mean</i>	<i>SD</i>	<i>Mean</i>	<i>SD</i>		
Social Community	19.56	3.09	19.6	3.63	0.001(1, 17)	.978
Learning Community	19.8	3.19	19.9	4.12	0.004(1, 18)	.952

As indicated earlier, allowing students to switch out of the synchronous section may have resulted in selection bias that ultimately influenced these results. Even though the researchers provided several hours of training for the instructor and also facilitated an orientation for students before the class began, both students and the instructor experienced technical difficulty with connecting and using Adobe Connect effectively. It is, therefore, also possible that technical difficulties during the synchronous section impeded the sense of social or learning community that those students might otherwise have experienced, had the technology always worked as anticipated. It is also important to consider that a five-week class may not be long enough for social community or learning community to develop in the ways measured by the Classroom Community Inventory.

Implications for Adult Education Theory and Practice

This is a small-scale study, reporting on the perceptions of a small group of students in a very specific setting (a five-week accelerated course with primarily non-traditional learners), and therefore generalizability is quite limited. However, these results should at least challenge adult and distance educators to consider carefully the investments that may be required in effectively incorporating synchronous activities into learning environments that had previously been fully asynchronous. Our team invested significant time and resources into redesigning the course, providing orientation and training, and honoring individual student preferences for course format. In this case, at least, those efforts produced non-significant differences between the two formats. As with any technological advance, educators have a responsibility to evaluate the contribution of that technology to the real experience and learning outcomes of students, rather than relying on rhetoric and intuition.

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