

INFORMATION SYSTEMS EDUCATION JOURNAL

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Is there a Student 'Disconnect?' First-year Hybrid Class Teachers' Observations and Recommendations for Improving Student Engagement in Information Systems Classes

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Abstract

Research shows that during times of economic downturn in the United States, education funding suffers. One method that higher education administrators are choosing to ease the economic crunch is to offer hybrid classes that blend one regular face-to-face class meeting with online and outside class components. The challenge of managing large numbers of students in hybrid classes while fostering student engagement can be monumental for higher education teachers. This article presents a discussion of observations and recommendations from the writers' experiences as first-year hybrid class teachers within an information systems environment.

Keywords: hybrid classes, blended classes, student engagement, information systems education, team projects, Web facilitated courses, distance learning

1. INTRODUCTION

Many higher education institutions are experiencing tough economic times during the current downswing in the economy (Johnson & DeVise, 2010; Laster, 2010). Not surprisingly, existing research suggests that state appropriations to higher education in the United States are negatively impacted by downturns in the economy (Humphreys, 2000; Betts & McFarland, 1995; Russell, 2008). Some institutions are trying a variety of creative ways to extend student coverage by existing faculty in order to stay within tight budgets, especially in states that have had to issue proration to education budgets. One of the methods being used is the hybrid class format, which is also referred to as blended learning or a blended learning environment (Osguthorpe & Graham, 2003). These authors believe that there is probably no magic "fix" for these budget constraints and that hybrid classes are likely to continue to grow as a percentage of all higher education course formats.

In this article, the authors discuss the existing literature on hybrid classes, provide observations from their collective experience as first year teachers of hybrid classes, present the major problems with student engagement that have been encountered in these classes, offer teaching tips for dealing proactively with those problems, and detail a planned action research project to promote higher levels of student engagement in hybrid classes.

2. LITERATURE REVIEW

Higher education continues to expand use of online learning and blended learning courses. In the Sloan Consortium's annual reports concerning online education, their 2007 iteration (Allen, Seaman, & Garrett, 2007), the first to have sufficient data to report on hybrid, or blended learning, was based on three years of survey results from over 1000 colleges. This study categorized the types of learning based on the amount of content placed online in the following way: 0-29% face-to-face, 30-79% blended/hybrid, and 80+% online. Generally, 1-29% might be web-facilitated, which utilizes a learning management system or the use of a website to upload a syllabus and assignments to assist in the face-to-face course, while the 0% is considered truly traditional with only oral or written content from the instructor. In the blended or hybrid category, instructors 'blend' by delivering content in a classroom setting and also provide a substantial amount of content in

an online format, normally reducing the face-to-face class meetings from a traditionally met course. For the online description, most or all content is delivered online. In the 2007 Sloan report, 55% of all colleges offered at least one blended course, and 64% provided at least one online course, with business programs offering a higher percentage of blended (47.9%) and online (42.7%) offerings than other academic areas. The answer to one of the key questions in this research, "Do blended courses hold more promise than fully online?," was that academic leaders rated them fairly equally (Allen, Seaman, & Garrett, 2007). In relation to student preferences for different class formats, the Allen, Seaman, & Garrett (2007) report showed that of over 2,000 adults surveyed about their first preference for course deliver mode, the preferences expressed were mixed:

- 24% preferred a web-facilitated course/program that was primarily on-campus,
- 22% wanted a course/program that was fully on campus,
- 20% preferred totally online courses/programs,
- 19% preferred primarily online blended courses/programs,
- 14% wanted equally distributed offerings of blended, online, and face-to-face courses/programs, and
- 2% preferred other distance learning programs, such as video and audio.

Interestingly, the percentages reported by the respondents as to the likelihood of taking these types of courses, however, were higher than those of their respective preferences. The authors concluded that the results suggested that even though there is a growing acceptance of online delivery methods, there is still some comfort in campus-based instruction.

A natural question that arises from a consideration of these different course formats is how student interaction with class activities may be differentially impacted among those formats. A literature review indicates that, at least on a preliminary basis, that there may indeed be differential impacts in different formats on student interaction with course activities.

Kozak (2009) collected data from four sections of the same course: a 15-week face-to-face section, a 15-week blended section, an 8-week

blended section, and an 8-week online section. In a self-assessment in which students were asked how many hours per week outside of class they spent on the course, the students reported spending averages of 9.21 hours per week in the face-to-face format, 10 hours per week in the online format, and 8.31 hours per week in the blended format. These averages reflected an addition of three hours per week for the traditional and hybrid in-class sessions. While this study's main focus was online students' learning, for our purposes it is interesting to note that the students in the hybrid section spent the least amount of time on the course. In relation to their categorical satisfaction with the instructor's conveyance of the material in an interesting way, the challenge offered by the course, and the amount of learning that resulted from the course, the students reporting the highest satisfaction levels were in the online course, and the face-to-face students' means were slightly lower in each category than the hybrid students' numbers. In Yudko, Hirokawa, and Chi's (2008) study of students in a small, rural university, students reported a belief that the hybrid format negatively affects class attendance, although they did not self report decreased attendance in hybrid classes.

3. OBSERVATIONS FROM FIRST-YEAR HYBRID TEACHERS

This article is based on the experiences of first-year hybrid teachers in information systems courses at a regional university. Collectively, these experiences have suggested that (1) there is a student engagement problem in hybrid classes, and (2) the engagement problem leads to decreased chances of success in the course both in grades and learning outcomes.

Discussion of the most consistent problems observed in hybrid classes will follow, but to provide context, a description of the hybrid format within this regional university setting follows. The information systems courses studied for this article were both sophomore-level courses: "Introduction to Programming" and "Information Systems in Organizations." The programming course is a required course in the information systems major in a college of business. The information systems course is a required course for all business majors at the university. These two courses were not pre-advertised in scheduling materials as hybrid (meeting only one day a week). When students registered for the course, they were committing to a two-day-a-week class meeting schedule.

With surging enrollments in both of these courses, the enrollment maximum cap was extended by the administration to allow both courses to grow and convert to hybrid classes. It is also relevant for our discussion to add that both of these courses were taught in lecture rooms with only 25 computers. Therefore, at the first class meeting of the semester, the classes were divided in half and for the rest of the semester one half met on the first class meeting of the week (Mondays for Monday-Wednesday classes or Tuesdays for Tuesday-Thursday classes) and the other half met on the second class meeting day (either Wednesday or Thursday).

Inconsistent Student Engagement

These authors have noticed a difference between the levels of student engagement within the hybrid classes as compared with the student engagement in traditional face-to-face classes or totally online classes. The hybrid students do not seem to have an understanding of what a hybrid class is other than telling their friends, "I only have to attend class one day a week!" The hybrid section's students in general do not seem to understand that they need to be engaged in course activities at other times of the week in addition to just that one class meeting.

Peer evaluation results from teamwork projects in the hybrid classes also indicate this inconsistency in student engagement. Too often, comments similar to the following have appeared on these evaluations from students in the hybrid classes: "She did not make any effort to contribute to the project until the night before the presentation, and the rest of us had it all finished by then" or "He did not show up at any of our group meetings and never told us why he was not there—and we met MANY times."

Another clear indication that students in hybrid classes often are not consistently engaged in course activities at days other than the one class meeting day can be seen in the charts in Figures 1 through 4. These charts have been extracted from the online Angel Learning course management software for one of the hybrid classes studied. It is important to note that all of the "out of class" activities for the course shown in these figures had required information posted in the course site within Angel Learning. There were also PowerPoint slides posted for student reinforcement of the class lectures. Also, three team projects utilizing decision support software required students to access data files and post comments on the teams'

private discussion boards. Teams were required to have evidence of teamwork and team files posted in their discussion boards. All assignments were to be turned in by submitting through the online assignment drop boxes within the Angel Learning course site. So, there was a consistent need throughout the semester (and not just on the one class meeting day) for the students in the class to access the Angel Learning course site and respond to team members' discussions, access reinforcement materials, access data files needed for the projects, read and respond to e-mails from their teammates and teacher, and take care of other course business.

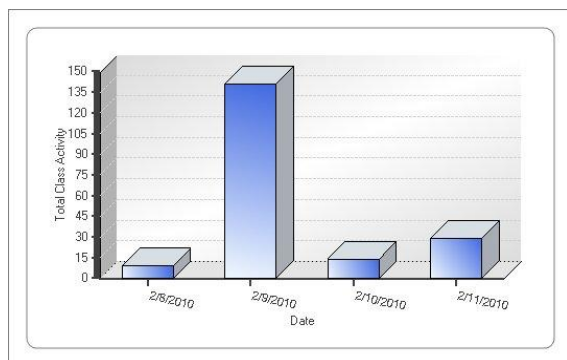


Figure 1. Total Tuesday Class Students' Activity During a School Week in the First Month of the Semester

The above chart shows the total activity for all students in the Tuesday hybrid class for the Monday through Friday activity log. This activity log still indicates that students in the class as a whole had little or no activity on days other than the Tuesday class meeting day during the first month of the semester. There was no activity on the Friday of this week.

Figures 1 through 4 reflect the following context: Monday through Friday activity logs from weeks in the first and last months of the semester within the course homepage in Angel Learning course management system, a hybrid class meeting one day a week, course requirements involving work on cases, teamwork projects, chapter journals, discussion activities, and other assignments to work on outside of class, and most activities requiring access to the course homepages.

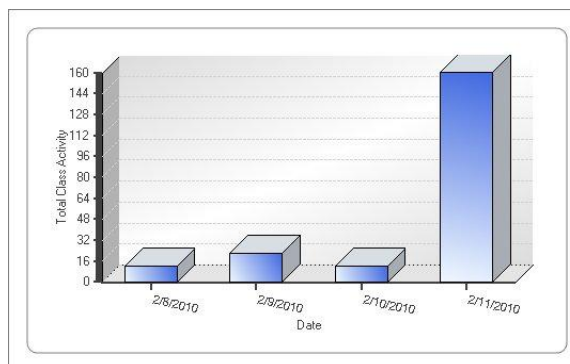


Figure 2. Total Thursday Class Students' Activity During a School Week in the First Month of the Semester

The above chart shows the total activity for all students in the Thursday hybrid class for the Monday through Friday activity log. This activity log still indicates that students in the class had little or no activity on days other than the Thursday class meeting day during the first month of the semester. There was no activity on the Friday of this week.

There is some evidence in the class activity data shown in Figures 3 and 4 (data from a week in the last month of the semester) that as the semester progressed, the student engagement in the course improved. The total class activity reports from both a Tuesday and a Thursday class meeting in a hybrid class indicate this improvement. This increase in activity is also often observed in traditional classes and online classes as students become more concerned about their final course grade during the last month of the semester. However, since there appears to be a sizeable increase in activity on all days of the week (except Friday), it is possible that students have finally at this point in the semester become aware that they need to be engaged in the course more during the entire school week and not just on the one class meeting day. This observation of increased student activity during the last month of the semester caused the authors to formulate a plan for a future study proposing a formal hybrid class training session in the first days of the semester to show students how to stay actively engaged in the course in order to improve their chances for higher achievement of learning outcomes and higher grades. This plan is discussed later in this paper.

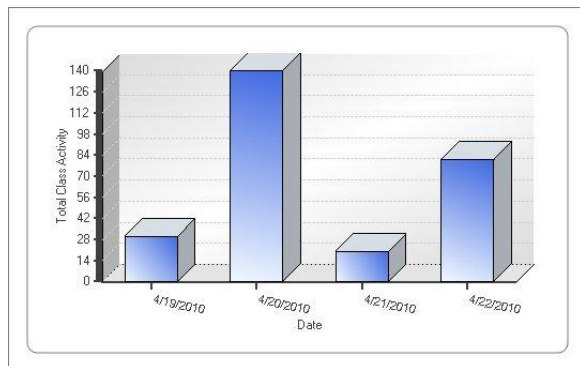


Figure 3. Total Tuesday Students' Activity During a School Week in the Last Month of the Semester

The above chart shows the total activity for all students in the Tuesday hybrid class for the Monday through Friday activity log. This activity log indicates that students in the class had an increase in activity on days other than the Tuesday class meeting day during the last month of the semester. There was no activity on the Friday of this week.

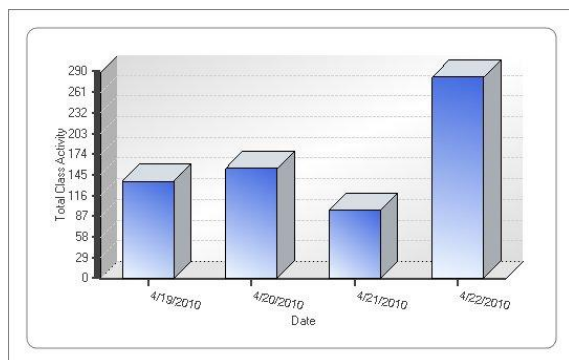


Figure 4. Total Thursday Students' Activity During a Week in the Last Month of the Semester

The above chart shows the total activity for all students in the Thursday hybrid class for the Monday through Friday activity log. This activity log indicates that students in the class had an increase in activity on days other than the Thursday class meeting day during the last month of the semester. There was no activity on the Friday of this week.

One unique fact that emerged when studying the class activity reports is that the hybrid students may not access the course's online materials or discussion boards at all on Fridays: the students seem to take Friday off from hybrid classes.

This fact is consistently demonstrated in each chart shown in Figures 1 through 4. There is no course activity data on Fridays for any of the 45 students in the two weeks shown.

4. STUDENT PERFORMANCE PROBLEMS IN HYBRID-FORMAT COURSES

These authors believe that the student engagement deficiencies detailed in the previous section lead to a number of student performance deficiencies in hybrid-format classes. Those deficiencies are detailed in the following observations.

Problem: Student Reading and Comprehension Issues

One of the problems observed in the hybrid classes is also a problem that teachers of regular face-to-face and totally online classes have observed: students do not read assignment instructions, or they do not comprehend the instructions that they do read. Too often, students will ask questions before, during, or after class about an assignment details, an assignment due date, a test date, etc. when the answer to their questions are clearly posted in the online materials at the Angel Learning course site. Also, when students ask questions for which answers have clearly been posted in the online materials since the beginning of the semester, it is obvious that they have not even seen or they have not comprehended the material that has been posted for them. This problem may be magnified in a hybrid class because more information and details are posted in the online course materials and less time is available in the one weekly class meeting to discuss details in depth. These observations suggest that hybrid class students must learn to rely more on reading online material rather than being "spoon fed" every detail by the teacher during class.

Problem: Student Attendance Issues

The collective observation of these teachers is that the student absenteeism rate is higher in the hybrid classes studied than in regular face-to-face classes. This is a critical point because missing one hybrid class day is the equivalent of missing a week of regular face-to-face classes. It is possible that students feel more anonymous in hybrid classes because of just meeting class one day a week. A unique hybrid class observation that was not often seen in traditional face-to-face classes in this particular college at this regional university is the fact that

there were a small number of students who were non-participants in the team projects. For example, in one hybrid class where each of the three team projects counted 10% of the final course grade, a student came in on the last team project presentation day and told the teacher, "I had no idea we were doing another team project." The team discussion board was clearly visible in each team member's assignment folder in the online materials. The student had been assigned to the team within the Angel Learning course site, and the procedure was no different than the two team projects that had been completed earlier in the semester. The last team project was clearly announced in the course calendar that was attached to the course syllabus that this student had received at the beginning of the semester. The total disconnect exhibited by this student ties back to the lack of consistent student engagement issue discussed earlier. All of the first-year hybrid teachers involved in the study have experienced similar student absenteeism and student disconnect issues and believe that they have had more of these issues in the hybrid class format than in the traditional face-to-face or totally online classes.

Problem: Students' Failure to Submit Assignments

There have been more observed instances of students failing to submit assignments by established due dates among the hybrid students than these writers have observed in traditional face-to-face and totally online classes. There have also been students who just did not turn in case studies or other assignments and received zeros for the missed assignments. This issue has not occurred very often for the writers of this paper in the traditional or totally online classes. This issue can probably be tied back to all of the previously mentioned observations: the inconsistent student engagement issue, the student non-reading issue, and the student absentee issue.

5. RECOMMENDATIONS FOR IMPROVING STUDENT ENGAGEMENT IN HYBRID-CLASSES

These authors have collaborated on potential proactive strategies to address student performance deficiencies in hybrid format classes. These strategies are presented and explained in the following tips.

Tip: Plan, Plan, Plan!

Perhaps the best tip for improving student engagement in hybrid classes is for the teacher to plan like he or she has never planned for a class before. Every detail of both the in-class activities and the online and out-of-class activities needs careful thought and attention as to how it will be handled in the hybrid class format. Practically everything that the instructor discusses, explains, or mentions in class needs to also have an online presence in the course management system. Detailed assignment directions, detailed grading rubrics, or assignment expectations need to be carefully organized and posted online for the students.

Tip: Set Expectations Early, Clearly, and Consistently

A carefully planned syllabus, a semester-long calendar, and assignment drop boxes should be posted in the online course management system by the first day of classes so that the students know at the beginning what is expected of them and when the assignments are due. The specific details on the topics involved in case studies or the specific project topics that will be assigned do not have to be made available on that first day of the semester, but the students need to know that they will have these assignments and they need to have an idea of what is due when. Giving the students some of the details of these cases and projects will help students in budgeting their time for the semester. Setting consistent due dates on a weekly basis is another way to help students stay focused and engaged. In one of the hybrid class clusters (a Tuesday hybrid of 22 students and a Thursday hybrid of 23 students), all assignments were due on Sunday nights at midnight. That seemed to eliminate questions about specific due dates. If the fact that a certain assignment was due "this week" was mentioned in class, in an e-mail, or in an online announcement, the students knew it was due Sunday night at midnight. By having both of the hybrid sections assignments due at the same time, this also helped the teacher to easily keep the due dates straight.

Tip: Convey the "Big Picture"

The careful planning and organization before the semester begins should help students to see the "big picture" for the class for the semester and help them to realize that it cannot all be accomplished during the one class meeting per week. For those students who work, those who have families with children, and those who are

taking heavy course loads during the semester, the carefully planned course calendar and details will be crucial for their success.

Tip: Use Team Projects to Promote Continuing Engagement

Utilizing team projects and changing the team members for each new project during the semester adds to the level of student engagement in hybrid classes. If students are in the same team for the entire semester, they may become bored or complacent. The writers of this article used three team projects in the "Information Systems in Organizations" class, and the team members were totally changed each time. An advantage of changing the team memberships for each project is that it gives the student the potential be in various roles in different teams. On one team, the student may end up being the unofficial team leader. In another team, the student may be the technology leader for that team. Or, the student could move to the role of follower in another team and still contribute heavily to the team's work.

Tip: Keep Communications Simple and Clear

There was discussion earlier in this article about how today's students do not always read carefully and do not always comprehend what they read. One way to assist the students with this issue is to avoid whenever possible very long assignment details or e-mails. It has been observed that students who read long e-mails with three main points or topics often ignore or do not notice one or more of those topics. These writers have seen more success when sending three short e-mails on three different topics (assignment detail, testing information, etc.) rather than sending one long e-mail that covers all three topics. This communication disconnect may not be that much worse with hybrid students, but teachers of hybrid classes do not have as much class time to spend in making sure the students comprehended the communication as they have in a traditional face-to-face class.

Tip: Use Technology to Promote Out-of-Class Engagement

Invariably, some students will have personal emergencies that result in absences on the one day that the hybrid class meets. To assist the absent students in making up the missed class, utilizing a video capturing software tool, such as

Tegrity, to record class lectures is beneficial. This video capture tool has been used quite successfully in many hybrid classes at the authors' university, but it may have been most effective in the programming course in the information systems major. When students who are not as adept in developing initial programming skills as others have to miss a lecture, there is much to overcome. If that student can enter the online course site within the course management program and watch the video, or at least watch crucial video segments of the missed lecture, then this student has the same opportunity for class success as those students who were able to attend the class.

While the authors' university campus has adopted the use of Tegrity software to record video/audio/screen capture, there are other options for recording instructor lectures, workshops, and tutorials for use within learning management systems. One of the authors uses Camtasia Studio (<http://www.techsmith.com/camtasia.asp>). Another solution for very short clips, less than 5 minutes, is a free program (not a trial) called Jing. For those professors who need longer videos, the expanded Jing Pro version can be purchased for a very reasonable price per year.

The addition of software to record video, audio, and screen capture can be quite expensive for higher education campuses. The authors' university campus spent approximately \$70,000 (\$60,000 in licensing and an additional \$10,000 for servers and webcams) for the Tegrity software integration with the Angel Learning management system. The cost for this software integration was about \$10 per student for this university's approximately 7,000 students. Echo360 is another video capture software that has pricing similar to Tegrity's price. Camtasia Relay is considerably less expensive and runs about \$10,000 for the license and an additional \$10,000+ for the server hardware. There are several other brand names available on the market for video capture software.

Recording the classroom lectures to upload to the course management site does more than assist the students who must be absent from class. The recordings serve as reinforcement to the lectures because students may watch again the part of the lecture that they did not totally understand during their one day of class with the teacher. The videos also serve as good review material for tests. So, in addition to helping with overcoming class absence issues,

the videos also assist with the student engagement and with the issue related to reading and comprehension. The students may gain more from watching the lecture over and over again than they would by trying to read and comprehend the material in the textbook by themselves.

Traditionally, there are usually issues surrounding the video technology that can be difficult for the teachers and students in hybrid classes to resolve. Sometimes the recordings do not work properly during class and have to be re-recorded by the teachers after class in their offices. One teacher has decided that overall, it works best to make several small videos during the lecture on different concepts as opposed to a single video over an hour in length. This teacher also recommends that to work effectively with blending the video, the PowerPoint slides, and textbook content into the lecture video clips he plans to use an electronic version of the textbook in the future.

Students who live on campus generally have access to strong technology support for their online and hybrid classes. Sometimes, students who live off campus have inferior Internet service to their fellow students on campus and can experience technology issues. Students who have broadband Internet access generally do not have a problem viewing the lectures. Those with dial-up or sub-optimal connectivity (e.g., ISDN) have great difficulty watching the videos in a streaming mode. For those students, it is possible to make a download link available which will download the entire video to the local drive and enable them to play the video "offline." Some students have problems playing videos that are "embedded" within a CMS-managed browser window. Within the Angel Learning course site, it is possible to make the link appear in a new window without a border.

6. METHODOLOGY FOR ADDITIONAL RESEARCH: A POTENTIAL STRATEGY FOR IMPROVING STUDENT SUCCESS IN A HYBRID CLASS

Based on this writing team's observations of problems with student engagement in hybrid classes and especially after reviewing the student activity reports within the hybrid classes' Angel Learning course management system (described in the charts in Figures 1 through 4), the research team plans to conduct additional study during the next fall semester. The next

stage of study will revolve around the writers' beliefs that a carefully planned, standardized, formal training with students is needed in the first day or two of the semester with a focus on correcting any misconceptions that they may have about hybrid classes and an emphasis on the need for continuing student engagement in the hybrid classes.

The writers are planning to produce a hybrid class performance skills video training segment that could be shown in all hybrid classes within one department on campus. A pretest survey covering attitudes about hybrid classes will be developed for the students to take prior to the training. The survey will have questions for students who have had prior hybrid class experience and for those who have not had prior experience. After going through the formal hybrid class training, the students will be given the same survey as a posttest to determine if the training accomplished the goal of changing misconceptions about hybrid classes (specifically, has the training helped change the student's perception of the level of student engagement or commitment needed for success in hybrid classes?). At the conclusion of the semester, the hybrid class students will be surveyed in an effort to gather their attitudes and beliefs about the hybrid class and how they felt about the design and implementation of the class. The writing team will continue to discuss their observations and monitor student activity within the online course sites throughout the semester and report their study results.

7. CONCLUSION

There is sufficient evidence from these writers' hybrid class experiences to indicate that there is potentially a natural student 'disconnect' in relation to student engagement in hybrid classes. This disconnect can be partially corrected by the teacher's careful pre-planning before the beginning of the semester in developing the online course environment and in planning meaningful out of class activities and projects. The writers also believe that there is strong potential for improving consistent student engagement in the hybrid classes with a short but formal "hybrid training session" during the first days of class to be certain that students understand the concept of hybrid classes and their need to be connected, engaged learners beyond the one day a week that they attend class. Additional research and pilot hybrid training sessions will be conducted by the writers during the next semester's hybrid classes

and the results will be reported in a future article.

8. REFERENCES

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