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Taking a Case Method Capstone Course Online: A Comparative Case Study

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Abstract

A capstone course is normally offered at the end of a program of study with the goal of helping students synthesize what they have learned in the courses preceding it. The paper describes such a course—an undergraduate capstone course for MIS majors—that was built around case discussions and projects and originally offered in a face-to-face format. Over the course of the study, an asynchronous online version of the course was developed that was intended to be as faithful as possible to the classroom version. The paper examines the design, delivery, and learning outcomes of the online offering, contrasting it with the classroom version.

The transition to an online course required many adaptations. Among the issues that we needed address are the following: 1) moving the highly synchronous face-to-face discussions of each case study to an asynchronous format without losing fidelity and energy, 2) changing how "student participation" was defined and evaluated, 3) adapting the project component of the course—which ended with a very popular "science fair" activity at the end of the semester in the classroom version—to a delivery mechanism where students never interacted with each other face-to-face, and 4) evaluating the relative learning outcomes of the two approaches.

The results of the conversion proved to be consistent with some of our expectations and surprising in other ways. Consistent with expectations, the online tools that we employed allowed us to create an online design that was relatively faithful to the original version in terms of meeting learning objectives. Also consistent with our expectations, student perceptions of the course—while quite positive overall—were more mixed for the online course than for its face-to-face predecessor. The course offering produced two surprises, however. First, the online approach to the project component of the course actually seemed to result in higher quality project presentations than the face-to-face version. Second, when results were compared from the instrument we used to evaluate student learning gains, the classroom and online versions of the class proved to be nearly indistinguishable. Given the very different delivery mechanisms employed, we had anticipated far more differences in student perceptions of what they had learned over the course of the semester. Given the challenges of taking a highly interactive class online, we viewed this surprise to be a very pleasant one.

Keywords: Information systems, capstone, case pedagogy, distance learning, online learning, evaluation, IS curriculum, critical thinking, education.

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Introduction

In architecture, the capstone of an arch is normally the final piece to be added to the structure and serves to lock the previous stones in place. In an educational curriculum, a capstone course is intended to perform a similar function. Included at or near the end of the program, it acts as a means of synthesizing material that has been learned in prior courses, with the goal of helping the student "cement" in place what as previously been learned.

Because the objectives of a capstone course differ from that of a more traditional content-focused course, it is not surprising that such courses often differ significantly in structure from more traditional content-focused courses. While the latter often depend heavily on lectures and subsequent testing, the complex informing processes associated with synthesis are often best served by much more interactive channels and processes (Gill, 2009). This can present significant obstacles for informing processes where place and time are not necessarily fixed—the typical scenario for online learning.

The present paper uses a mixed method inquiry to examine the conversion of an undergraduate MIS capstone course from a face-to-face to an asynchronous, online format at a large metropolitan research university located in the southeast region of the U.S. The original (face-to-face) version was built around case discussions and individual student projects that culminated in a week-long science fair. That design was highly interactive and demonstrated learning gains in several important ways (Gill & Ritzhaupt, 2013). An annual review of curriculum and course scheduling was conducted that indicated a student need for the mandatory IS capstone course to be offered in an online format. The belief among faculty, administrators, and students was that greater flexibility in scheduling was important to the timely graduation of MIS undergraduates. The goal of the conversion was to maintain the gains of the face-to-face capstone course while employing a format that allowed students greater flexibility in taking the course. The long term goal of the conversion was not to replace the classroom format. Rather, it was to provide students with a choice between the classroom and online formats. Ideally, such a choice would be drive by each student's individual learning preferences (as well as by perceived convenience).

The paper begins with a brief review of literature relating to capstone courses and to the use of the case method in an online setting. The design of the classroom and online versions of the case method portion of the class are then contrasted, followed by a similar analysis for the project portion. The learning outcomes—particularly as assessed by students—are then compared for the two delivery methods. Finally, we draw conclusions about the results. While we note pros and cons that we observed for each approach, the greatest surprise of the study was the remarkable degree of similarity between the classroom and online delivery outcome results.

Literature Review: MIS Capstone Courses and Online Case Discussions

The literatures on Management Information Systems (MIS) pedagogy and online learning are vast and there would be little point in summarizing them here. Instead, we opt for brevity and focus our review on two areas that are critical to the study's context: the nature of MIS capstone courses and results of taking the case method online.

MIS Capstone Courses

Selected findings relating to the design of MIS capstone courses are summarized in Table 1, originally prepared for a study (Gill & Ritzhaupt, 2013) of the classroom version of the course being considered here. That research summarized the field as follows:

> …we can see that the field is still struggling with how best to synthesize and integrate knowledge in the various areas that constitute the information systems undergraduate major. What we can garner from these discussions is that there are several distinct ways to achieve the learning objectives of these courses ranging from traditional pedagogy to more authentic forms of engagement. (p. 73)

Table 1: Research on MIS and IT Capstone Course Design (Gill & Ritzhaupt, 2013, p. 72)

Author(s)	Key Features and Description
Astani (2006)	Students were required to interview local Chief Information Officers face-to-face to better understand the key issues in information technology management. Students shared the findings in class.
Brandon, Pruett, and Wade (2002)	A combination of case pedagogy, guest speakers, and lectures to deliver content. Students would engage in discussions and would produce a research report on a specific company and industry to the rest of the class. An advanced graduate textbook was used.
Gupta, and Wachter (1998)	Lectures, targeted assignments, case studies, situation analysis report, and a major team project. The course integrates several business functions and assignments to provide a comprehensive experience.
Harper, Lamb, and Buffington (2008)	A focus on using case pedagogy to delivery content. A comprehensive evaluation of the case method using a valid and reliable survey instrument. The course embraces discussions and case analysis.
Hashemi, and Kellersberger (2009)	A focus on information systems development of a complex information systems spanning multiple semesters with multiple students. A focus on learning several business functions. The course is an ongoing information systems development project.
Janicki, Fischetti, and Burns (2006)	An emphasis on project management and emerging technology. The course focuses on working with real-world clients to identify stakeholder needs. The real-world projects come from the institution and local not-for-profits.
Kumar (2006)	The paper focuses on the recommendations of using a systems approach, focusing on student-centered activities, using multiple modes of assessment, providing research opportunities, and inviting guest graduates to speak about the course.
McGann and Cahill (2005)	A description of a comprehensive course that covers real-world client projects, traditional readings and case studies, project management, individual development assignments, research readings, electronic portfolios and a career readiness emphasis.
Morgan and Aitken (2006)	A description of a capstone course for information systems majors and other business majors involving the cross-functional teams and consulting experiences. The course is organized around six modules.
Schwieger and Surendran (2010)	A description of a capstone course focusing on teamwork and developing real-world technology solutions for real clients. The course emphasizes soft skills, knowledge integration, and cooperative learning.
Shih, LeClair, and Varden (2010)	A focus on students developing an electronic portfolio (ePortfolio) to demonstrate technical competence in their academic studies. The course integrates across the curriculum following a pedagogical model. Students in the program must complete the ePortfolio to graduate.
Surendran and Schwieger (2011)	Implications of the IS2010 curriculum standards for an integrated undergraduate capstone course for information systems majors. The proposed course design emphasizes client-sponsored projects, enterprise system based projects, instructor-directed apprenticeships in industry, and cross-discipline focused independent study.
Tuttle (2000 and 2001)	An emphasis on a large-scale programming project involving a complex database design and class discussions are surrounding Frederick Brooks Jr.'s "The Mythical Man Month". Implications for the field are emphasized and students engage in team-based challenges in class.

Online Case Discussion

Our investigations of existing literature into the practice of case discussion based pedagogy were focused on identifying any qualitative or empirical evidence that discussed results comparable to or in conflict with our results. In particular, we wanted to survey research that identified an effect on student learning gains or on students' perception of other student's project work when an online, asynchronous case based environment was used for instruction.

Our findings are summarized in Table 2. The survey suggested a number of factors that can influence the perceived success of an online discussion case format. In research, the suggestion is that the approach taken controls for (eliminates) the effect of (1) ineffective technology for the online environment, and, (2) student familiarity with the technology used. Once confirmed, prior research tends to indicate that course description, expectations, goals, and inter-mediate objectives be clearly communicated and instructor responsiveness be primordial in the online course design and delivery.

In several respects, an instructor might argue that these items have always been essential even in the classroom environment but the online case discussion research suggests that there appears to be significantly less room for error in the "lower touch, lower feel" synchronous and asynchronous online environment. Perhaps this level of required course design ad delivery discipline will change over time as familiarity with and student confidence in the online case discussion environment grows.

Once these "qualifying" factors are in evidence in the online course, several additional findings from prior online case discussion course research provide comparative results that might be tested in our research. Specifically, several authors found that asynchronous communication – especially with the instructor – lowered students' perceptions of the quality of learning (Levin, He, & Robbins, 2006; Vonderwell, 2002). Several authors found that students reported a significant difference between the quality of learning between the two - classroom versus online - environments (Mullen & Tallent-Runnels, 2006; Rovai, Ponton, Derrick, & Davis, 2006; Song, Singleton, Hill, & Koh, 2004). At the same time, authors found evidence for improved student outcomes in these online environments such as: increased levels of participation (Poole, 2000); increased self-expression (Vonderwell, 2002); increased sense of ownership and satisfaction (Poole, 2000); and increased student critical reflection (Levin et al., 2006).

Several limitations in all of these studies provided opportunities for our research. For example, only one study – Rovai et al., 2006 – evaluated the same course taught in each environment by the same instructors using the same anonymous student evaluation of learning tool throughout. Our research compares treatments of the same course taught in both environments. Several studies based their evaluation on surveys, questionnaires, and interviews (Mullen & Tallent-Runnels, 2006; Song et al., 2004) that were disconnected from any specific case discussion course thereby limiting the study's ability to concurrently evaluate the course curriculum on its qualifying factors (as they are discussed in a prior paragraph above). At the same time, four of the studies discussed in the table provide evaluations performed with students in situ during or immediately after their online discussion based course experience. Our study uses the same student assessment of learning evaluation tool in situ in both environments.

Our goal with this literature survey is to be representative, not comprehensive, in our presentation of existing literature in this very limited area of academic research study into online versus classroom based evaluation of students learning results and perceptions. As we review our method and results, we find several interesting and potentially significant points of agreement and difference to the existing research.

Table 2: Online Case Discussion Literature Survey

Author(s)	Effect Observed	Description
Vonderwell (2002)	"Students who initiated collaboration messages were frustrated since messages were often left unanswered by their peers."(p.83) Lack of inter-personal interaction with instructor and peers led to dissatisfaction with the online, asynchronous environment. Asynchronous "dialogue" with instructor lowered students' perception of the quality of instructor facilitation of the course. Online can provide a forum where students report that they can "express themselves a lot more, unlike in a classroom setting" but the online environment required "clarity and careful construction of the message" to be effective in communicating ideas. (p.86)	Explored the asynchronous communication perspectives and experiences of undergraduate students in an online course. Limitations: Asynchronous discussion forum in Blackboard; BA "Technology Applications in Education" class at Large Midwestern University.
Poole (2000)	The convenience of participating when desired online lead to an observation that students "contributed far more messages [73 on average]… than were required [27]." (p.164) With the most posts occurring in the conversation streams on Saturdays and evenings. Student discussion "moderators" lead to students reporting higher levels of ownership of and engagement in discussions they initiated. (p.167)	Examined the nature of student participation in an online discussion oriented course. Limitations: Bulletin board environment; EDIT5110 2-unit MA class at CSU, Stanislaus.
Song, Singleton, Hill, Koh (2004)	Results indicated that "design of the course (83%), comfortable with the technology (76%), [student's] motivation (74%), and time management (71%) were ranked in importance in what makes a learner successful in an online course." (p.65) Online courses suffered from "[lower] lack of community, difficulty understanding instructional goals, and technical problems" that "challenged" [lowered] their online learning experience. Hypothesized that course design should focus on creating community, student time management strategies, and organization on the part of the instructor (explicit directions, expectations, and goals for the course from the outset of the course). As long as students were comfortable with the technology and the technology was robust and reliable.	Survey of graduate students to "identify helpful components and perceived challenges base on their online learning experiences." (p.59) Limitations: Questionnaire and interview requiring reflection on previous online course experience; Graduate students at a Large research institution in the South – all different courses.

Webb, Gill & Poe (2005)	Found that blended case discussion format slightly outperformed both pure online and pure face-to-face courses in terms of learning outcomes. Asynchronous discussants found the greatest benefit from the input of peers.	Survey of four MBA classes, two blended, one purely online and one purely face-to-face. Limitations: Learning evaluated with untested instrument; only one online protocol was tested.
Mullen, Tallent-Runnels (2006)	Support for hypothesis that "students in online classes and students in traditional classrooms would perceive…differences [between the two environments that] would include perceptions of instructors' support and demands that relate to students' motivation, satisfaction, and learning." (p.263) Differences were considered significant on all of these variables (the variable "self-efficacy" was not found to show a significant difference between the two environments).	Survey of graduate students to assess perceived differences in instructors' demands & support and students' motivation, self-regulation, satisfaction, and perceptions of online versus classroom environments. Limitations: interviews with 7 online graduate students and survey of 91 online and 96 classroom students prior experience – all different courses; Colleges of Education & Human Sciences at a Large southwestern university.
Rovai, Ponton, Derrick, Davis (2006)	Found a "net result" that students reported a "more negative rating for online courses." Found that the results "aligned with more anecdotal evidence and empirical studies that show course completion and program retention rates are also generally lower for distance education courses than for their on-campus equivalents (e.g., Carr, 2000; Chyung, Winiecki, & Fenner, 1998; Sikora & Carroll, 2002)". (p.30) Additional findings included: Online courses received significantly more praise (+4.1 percentage points) and more negative comments (+7.7 percentage points) than classroom environments. "Substantial within-class variance in evaluations was noted…" (p.30). "Students raised communication-related issues proportionately greater in their evaluation of online courses...[particularly] regarding clarity, communication skills, and teacher-student interaction and rapport…" (p. 31).	Analysis of anonymous student responses to open-ended (SET) evaluations of the same graduate course taught online (18 course iterations) and in classroom (5 course iterations) by the same professor over four academic years. Limitations: Doctoral students in required Research Design & Statistics course; Private university (4500 students) in urban eastern Virginia. Note: one week summer residency course was required of students to learn the online technology in advance of online course attendance.

Levin, He, Robbins (2006)	Participants (7 of 8 students) in synchronous online case discussions had "higher levels of critical refection than when they engaged in asynchronous online case discussions" (p.439). Preference shifted toward synchronous and away from the asynchronous preference initially stated by the majority of participants. Nonetheless, at the end of the study participants were split roughly in half (17 for synchronous; 15 for asynchronous case discussion formats) in favor of the two different online formats. No significant difference was found in student preferences for peer-facilitated versus instructor-facilitated case discussions over the period of the six case discussions.	Comparison of (36) students' reflective thinking during online case discussions when one is synchronous and the other is asynchronous. Limitations: Discussion board in Blackboard; Four groups of nine participated in two synchronous and two asynchronous case discussions. Six online case discussions taught during a Graduate Pre-service Teaching course at a University in the southeastern US.

Course Redesign

The basic design of the undergraduate capstone course consisted of two components that were relatively independent of each other:

1. Weekly case discussions
2. Final projects, due at the end of the semester

The classroom and online versions of these components are discussed separately. As a further note, the classroom and online versions of the course is discussed in considerable detail elsewhere (i.e., Gill, 2012; Gill & Mullarkey, 2014; Gill & Ritzhaupt, 2013). The reader is directed to these sources for a much richer description of processes and curriculum employed in the two offerings.

Case Discussions

A key element of the capstone course was weekly case discussions. From a course design perspective, we can divide our presentation into three parts: elements common to both versions of the course, elements unique to the classroom version and elements unique to the online version.

Common elements

In the course conversion, one of the key objectives was retaining as much of the original design as possible.

Portfolio of cases: The most important commonality between the two courses was the actual cases that were used. A unique feature of the original design was the fact that all the cases employed in the course were developed locally. These cases were modeled after the cases used by *Harvard Business School*, being *open* (i.e., not presumed to have a "right" answer), *authentic* (i.e., based on actual observations of the decision-maker in the field) and were designed specifically for *classroom discussion* (i.e., they were framed around a protagonist who needed to make a decision). Each case ranged in length from 15-30 pages (including exhibits) and most contained technical and/or economic background information needed to understand the decision context. The cases were also very up-to-date, with researchers (both course instructors and others) developing 3-6 replacement cases per year to keep the portfolio of cases fresh. A large collection of the cases can be found in the *Journal of IT Education: Discussion Cases* (http://jitedc.org).

Introductory case study: Both versions of the class began with a case study provided students with an introduction to the case method (Gill, 2012; Gill & Mullarkey, 2014). These case studies were customized for each version of the course and, in addition to supplying background context for the course, provided students with the opportunity to make a number of course design and process decisions, such as the percentage allocation of grade weights to case discussion participation versus project performance and the course policy on late submissions.

Post-case Reflections: With respect to the discussion protocol, one practice from the classroom format was retained for the online format was the post case reflection. Even in the classroom offering, this form was submitted online, allowing it to be retained without modification. As described in the classroom version of the syllabus:

> *…students will fill out a form at the end of each discussion and upload it to Canvas. This form will consist of two questions:*
>
> *1. What are the three most important things you learned from the case?*
>
> *2. How did the case discussion change your view of the case?*
>
> *…Post-case reflection forms should be filled out after class on Thursdays and can be submitted up to 11:59 PM. If a student missed the discussion, no form should be submitted.*

The use of these forms provided a useful qualitative basis for comparing the learning associated with each case between the classroom and online formats.

Instructors: A final similarity between the two offers was the instructors. Both faculty members selected to teach the first online offering had been highly successful in teaching the classroom version of the course. Both had also developed case studies that were used in the course.

Specific to the classroom offering

The nature of the classroom environment allowed the instructors to facilitate synchronous (i.e., highly interactive) discussions that could not be faithfully replicated online. The classroom discussion was conducted in the following manner, modified only to accommodate two alternative schedules (one 150 minute night class vs. two 75 minute afternoon sessions):

- *Pre-case question*: Students would be given roughly 20 minutes to answer a high level question that the instructor wrote on the board. By fall 2013, these were submitted to the Canvas learning management system (prior to that, Blackboard had been used). In the night class schedule, this would take place over the first 20 minutes of the class. In the two class session version, the pre-case questions would be administered on a Tuesday during class time, and the actual discussion would take place the following Thursday.
- *Discussion*: The actual discussion of the case would take place over the course of roughly 75 minutes, facilitated by the instructor.
- *Post-case reflections*: After the completion of the discussion, students would be given a specified period of time in which to submit their two question post case reflection form to Canvas, described previously.

Another unique aspect of the classroom version of the course was the ability to invite actual case protagonists to attend, and comment upon, the discussion. Because most case sites were local, the percentage of classes with these guests ranged from 50%-90%. In the SALG surveys conducted at the end of the semester, students rated these guests as the most helpful aspect of the course (Gill & Ritzhaupt, 2013, p. 82).

Specific to the online offering

As a matter of university policy, online courses were expected to avoid—or, at least, minimize—any synchronous learning requirements. This required a substantial redesign of the discussion, moving them to asynchronous forums. Concerned about the potential impact on student engagement of this format, the instructors also planned to offer optional online synchronous sessions, using the *Elluminate/Blackboard Collaborate* tool supported by the university. The instructors also specified that these sessions would continue as long as at least 20% of the class (roughly 8 students) attended every session. By the third week of the 10 week summer semester, however, attendance had dropped well below the specified threshold, so these sessions were discontinued. Given their low attendance and limited duration, there was no reason to believe that they made a material contribution to course outcomes.

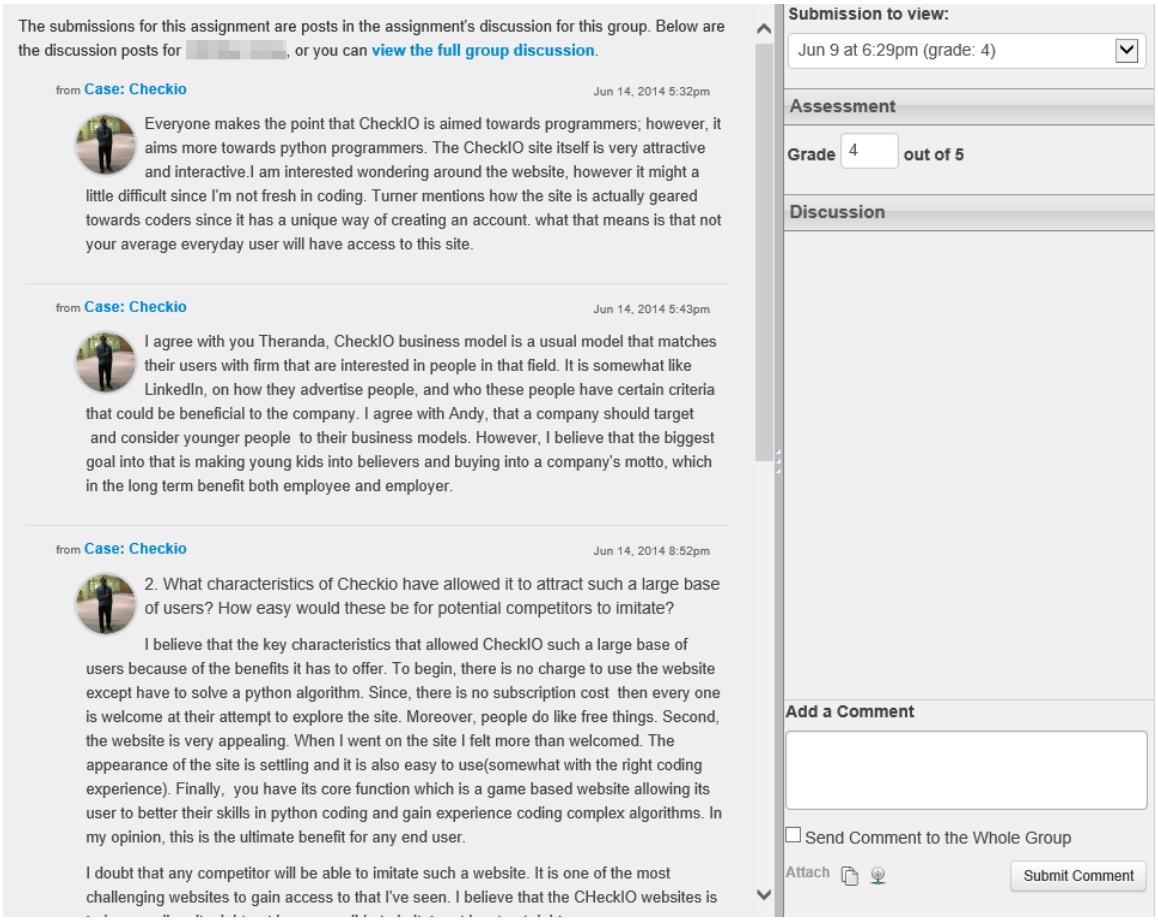

Figure 1: SpeedGrader for a student's discussion posts

The syllabus instructions for the asynchronous case discussions are included as Appendix A. Each discussion took place over the course of a week and proceeded according to the sequence that follows:

1. *Opening threads*: 6 to 7 students were individually assigned a question to answer at the top level of a discussion thread. These needed to be posted by the end of the second day of the discussion.
2. *Discussion*: Students participated over the course of the week. As indicated in Appendix A, students were given guidance as to what constitutes reasonable participation.

3. *Case wrapup*: Once synchronous discussions were discontinued, the instructors began posting 10-15 minute video summaries of key takeaways from the case. These were posted after the actual discussion closed, but before post-case reflections were due.
4. *Post-case reflections*: Precisely mirroring the classroom format, after the completion of the discussion students submitted their two question post case reflection form to Canvas.

After the discussions closed and post-case reflections were submitted, the instructors graded the online discussions and reflected using the 1-5 scale specified in Appendix A. The Canvas tool provided a SpeedGrader (Figure 1) that grouped each student's participation together, greatly reducing—but not eliminating—the tedium of grading discussions that averaged over 100 posts per discussion.

For the first two discussions, the instructor left a short video comment (30-120 seconds) to each student, commenting on his or her performance in the discussion and offering suggestions for improvement. By the third week of the class, the comments to strong performers became repetitive, so video comments were only made for students scoring 3 or less on the 5 point scale.

Course Projects

The second component of the course was a final project requirement. Again, from a course design perspective, we divide our presentation into three parts: elements common to both versions of the course, elements unique to the classroom version and elements unique to the online version.

Common elements

In the course conversion our objective was to retain several key elements of the course project portion of the original course design. These included flexibility in choice of project topic, the project proposal and draft review process, the development of a project poster and a final project report, and the use of peer review of project presentations as a part of the grade for the project.

Flexibility in Project Topic Choice: As described in the course syllabus in Appendix B, students in both versions of the course were given exactly the same set of options for the choice of their capstone project. These options were designed to provide significant flexibility to the students so that they could focus on an area of their individual MIS learning experience and showcase their expertise with a workman-like product. Many students used these projects as a part of their portfolio in the hiring process and as such they tended to serve a dual purpose: fulfilling class requirements and demonstrating MIS expertise to future employers. Our experience in the online environment was entirely typical of the offline environment in the choices made by students in the types of project pursued. Programming and database projects were the most common, followed closely by web-site development, systems analysis and design report, and research white paper. No students in the online course chose to write a case study but there were normally only one or two students a term that chose this project option.

Proposal and Draft Project Review Process: Again, as described in the course syllabus, the students in both environments submitted a proposal and a draft of their project during the course using the online submission process available in Canvas. For each submission the instructor provided a grade through Canvas with comments. In the classroom environment, students had the opportunity to ask the instructor before or after class about those comments and their grade on each. Normally, however, the tight time constraints on students' left little opportunity for meaningful conversation about projects in class. Consequently, in both environments the vast majority of conversations with students about their projects tended to occur through email conversations, by phone/skype, or with a set appointment during office hours with the instructor.

The number and type of email conversations to discuss projects was similar in both environments – about half the students had a question they asked by email relevant to their project proposals and drafts. The instructors found that they met with about 10%-15% of the students one-on-one to discuss specifics of the student's proposal or draft in both environments. In the online course all but two of these meetings occurred by phone call (no skype was requested by students) whereas the experience with in-class environments (with students regularly on campus) about 50% of the one-on-one sessions occurred in person during office hours. Our perspective is that the most important aspect of the proposal and draft review process was the availability of the instructor to whatever means the student prefers (e.g., email, phone, office). That being said, most students requested (and needed) very little help in the choice and development of their project.

The actual grades on the proposals and draft projects were completely consistent in both environments. These grades were provided exclusively by the instructor after review of the online submissions by students in both environments.

Project Posters and Final Report: In both environments, students were required to create a poster presentation of their project and a final report (again, as describe in the syllabus extract in Appendix B). In the classroom environment, where the presentation of the project had to be printed out and attached to a physical poster board, most students printed out 8-12 PowerPoint slides that described the project and used laptops to give live demonstrations of software, database, and web-based projects. In the online environment, the students were required to put the presentation "poster" into one document for ease of review by the instructors and their peers. Students easily complied with this format requirement and required no more assistance than needed with standard PowerPoint approach.

The final project report was identical in format, upload to Canvas, and grading as with the classroom version of the course.

Specific to the classroom offering

The only part of the project that required significant student-student and instructor-student interaction was the presentation of the project. The synchronous classroom based environment allowed for a creative use of the "Science Fair" approach to students' presentation of their projects. In this format the students were generally split into four equal groups (12-13 students per group). Groups A and B were evaluated by the instructor and their peers from Groups C and D respectively in 7-10 minute presentations with evaluating students rotating from project to project over a 90-120 minute class.

As shown in Figure 2, 1-2 students observed each presenter and then rotated to the next presentation station until time expired or all student presentation stations had been visited. At each station, the evaluating students recorded their assessment using the online peer evaluation illustrated in Appendix B.

Figure 2: Photograph of Science Fair Presentations

Advantages: In this approach, students' project, presentation skills (verbal and non-verbal), professionalism, and ability to handle questions were all on display and evaluated. According to informal student feedback and instructor observation, the biggest advantages of the Science Fair approach tended to be (1) the practice presenters get with their presentation skills (in advance of job interviews and a real work environment) and (2) the ability (for evaluators) to ask and (for presenters) to respond to questions. Typically the face-to-face interaction was extremely well received by students and members of faculty not associated with the course itself—including the department chair and the dean of the college—often participated informally.

Challenges: The time constraint on the project presentation duration – 7-10 minutes – was due to the need to have a substantial number of students evaluate any other student's presentation. We wanted each student to know that their peer evaluation grade was a composite score across 8-12 of their peers. The short presentation period also kept the energy level high and the "Science Fair" fast-paced. At the same time, the "artificially" short presentation time was the single biggest concern students raised over the process. Students could alternatively feel that they did not have enough time to review and understand another student's project in-depth or that they did not have an appropriate length of time to display and describe all the work they performed for their own projects.

Specific to the online offering

Attempting a synchronous in-person presentation of projects would have violated the policy and practical constraints of the online class environment. A significant redesign of the assignment was therefore required. Our goal was to retain the peer evaluation and the static poster-style presentation, as discussed, while replicating the self-presentation requirement in the online environment. Consequently, the Poster Presentation (Appendix B) instructions were significantly different for this course.

Our approach was to modify the project poster to a single-page PDF that was uploaded to Canvas (instead of printed out and attached to a physical poster board). The instructor used features in Canvas to assign students by group to evaluate 12-13 other students using the original online peer review form, supplemented by additional comments made through the built-in peer review tool supported by Canvas, and provided access to a student's poster for those students performing the evaluation.

In place of Science Fair-style presentations, each student was required to prepare a video presentation (mp4, YouTube, or Prezzi) with audio track describing the project lasting no more than 10

minutes. A wide range of alternative media were allowed, including voice-over of slides, links to streaming sites, and screen recordings of programming or web designs. These videos were made available to the evaluating students through an online discussion forum. Each evaluator was required to review the both video and the poster for each project assigned and then perform the peer review with comments.

In Appendix C, we provide an example of an online project poster and one segment in a series of comments from evaluating students on the poster and the presentation video. Students could review the assigned posters and videos asynchronously in accordance with their schedule (in the project review week) as long as they completed confidential peer evaluations and contributed to the review stream in Canvas in the allotted timeframe.

The actual conduct of the project assignment led to a series of observations. First, the most observable result of the online format was that the student comments on the project – poster and presentation – were more extensive than the peer evaluation commentaries in the Science Fair environment. Second, it was evident that the series of comments were, in fact, made asynchronously over several days over the course of the evaluation period. Third, comments to presenters provided positive and negative critiques, the latter being much less common in the face-to-face offering. Finally, we observed that a complete review of another student's presentation took more time than the Science Fair environment and may have afforded more information to the evaluating student (video, poster, comments).

Research Design

The course conversion provided a convenient opportunity for testing outcomes between classroom and online delivery of complex content. Specifically, the characteristics of two offerings effectively controlled for a number of variables that can be difficult to control. These include:

- *Student population*: Whenever students are given the choice between two alternative offerings, there is likely to be a self-selection effect by which slightly different populations (at least in terms of learning preferences) end up in different sections. Such a phenomenon had been previously been observed in other undergraduate courses at the same institution (Gill & Jones, 2010). In our study, however, only one version of the class offering was available to students. Furthermore, because the course was a capstone, normally taken at the end of the undergraduate's program, there is no evidence that students changed their schedule in order to choose or avoid a particular format. While the online version was offered during summer semester, state regulations required undergraduates to take a certain number of summer credits, so summer and fall/spring demographics tended to be comparable.
- *Instructors*: As previously noted, the two online instructors had both successfully taught the classroom format of the course.
- *Content*: Also as previously noted, the same body of case studies and project requirements were used in both versions of the course.
- *Evaluation approach*: Three of the key evaluation measures could be carried across the two versions of the course with no modification: 1) the post-case reflections prepared by students after each case, 2) the university-wide student course evaluations, and 3) the *Student Assessment of Learning Gains* (SALG) instruments (see FLAG, 2012). While all these measures suffered from subjectivity, they nevertheless provided a consistent basis for comparison.

As a consequence of these similarities, and the extensive baseline already established for the classroom version of the course, the conversion presented the researchers with the opportunity for an unusually pure quasi-experiment.

Results

It was possible to compare the results of the online and classroom offerings in a variety of ways. These could include grades awarded, student assessments of learning and course evaluations.

Comparison of Grade Patterns

A number of activities were similar across the various sections of the course. While such grading naturally carries some instructor-generated subjectivity, when the same instructor grades the same activity from semester to semester, the subjectivity is reduced to the greatest extent possible. We now consider the patterns of grades awarded across the various sections.

Case reflection form grading

The case reflections form was submitted by students after each case. The same instructor graded reflection forms for the 2012 & 2013 (classroom) sections and summer 2014 (online). The results are presented in Table X.

Table X: Comparison of Post-Case Reflections

	Spring 2012 Classroom	Fall 2012 Classroom	Spring 2013 Classroom	Fall 2013 Classroom	Summer 2014 Online	Comments
Excellent	30%	35%	30%	36%	39%	Value of 5 in summer 2014
Satisfactory	68%	63%	70%	62%	59%	Value of 3 or 4 in summer 2014
Weak	1%	3%	1%	2%	2%	Value of 1 or 2 in summer 2014
Item Count (Enrolled)	419 (43)	338 (36)	475 (47)	407 (44)	242 (37)	Differences due to number of cases and class enroll-ment

Direct comparison of the classroom and online numbers is difficult because in summer 2013, a five point scale was used to grade reflections as opposed to the 3 point scale used previously. We took the most conservative position by treating a 5 as equivalent to the old 3, then assigning both 4 & 3 to the old 2 and 1 & 2 to the old 1. Based upon this interpretation, we saw a slight overall improvement in reflection quality from 2012 & 2013 (classroom) to summer 2014 (online). This may understate the quality difference, owing to the scale change, which should have resulted in a reduction of top scores. Balanced against this, the 10-week summer semester had 7 cases, as opposed to 11 cases in the normal semester—a reduction occasioned by the greater demands of the online discussions. Thus, we conclude that the overall performance between the online and classroom versions of the course were probably close to equivalent.

Project grading

We were able to directly compare the approach to project grading for the online course with the classroom course taught in the term immediately prior. Exactly the same technique was used in each. The instructor alone graded the project proposal, draft and report. Each of these were presented by the student in exactly the same format and uploaded online through Canvas. In each case the instructor graded the submission using the same rubric independent of the course instruction environment (classroom or online).

As discussed above, the presentations themselves were delivered in a different format to the instructor and the peer evaluating students in the classroom and the online environments. In the online version of the course, a grade was assigned to the poster and a second grade assigned to the online video presentation. The combination of these two grades could then be compared to the single grade for presentation from the classroom version of the course the prior term.

In both cases, the instructor completed an analysis of all student evaluations of each presentation. As indicated, each evaluation gave the project a composite score out of fifteen possible points. The average score for the student evaluations of each project was calculated and then compared to the instructor's independent score. In both environments, student and instructor scoring were highly correlated. A comparison of the composite scores is presented in Table 3.

Table 3: Comparison of Composite Project Ratings and Instructor Report Scores

	Project Presentation	Project Report	Number Enrolled
Spring 2014 Classroom	86.7%	90.0%	46
Summer 2014Online	91.5%	90.4%	37

The standard deviations were comparable in each case with the scores nicely centered around the means. Several observations are interesting. The project presentations scored 5 points higher on average in the online environment. There appeared to be no significant difference in the scores for the project reports. Again, there are a number of possible reasons for these results:

1. The online environment afforded the evaluators (student and instructor alike) more time to consider the work resulting in higher scores for comparable work.
2. The need to produce a poster and a video that could "stand alone" and represent the project for the student lead to more work and a higher quality presentation product than the classroom environment where students only prepared a poster and may, or may not, spend quality time practicing their in-person presentation.
3. Some combination of both of these may apply.
4. The online environment did not affect the quality of the project reports because:
    a. The project proposal, draft and final report process mirrored the classroom environment.
    b. Student questions on each could be handled easily with asynchronous email or a synchronous phone call.
    c. Some combination of both of these may apply.

One interesting possibility presented by these results is that the classroom version of the course could use the online version of project posters and video presentation in lieu of the Science Fair approach in a hybrid fashion. Results of the SALG and the project presentation scoring could

then be compared for significance. Perhaps a hybrid online presentation would result in more favorable SALG results while retaining improved project presentation scores.

SALG Results

The Student Assessment of Learning Gains (SALG) is a widely used instrument that allows students to report how different aspects of a course impact their perception of learning. It is graded on a scale of 1 (not at all helpful) to 5 (extremely helpful). While there is no clear standard for benchmarking results, in the sciences scores of 3 or more are generally considered favorable, and scores approaching 4 are considered highly favorable (FLAG, 2012; Gill & Ritzhaupt, 2013; Seymour, Weise, Hunter, & Daffinrud, 2000).

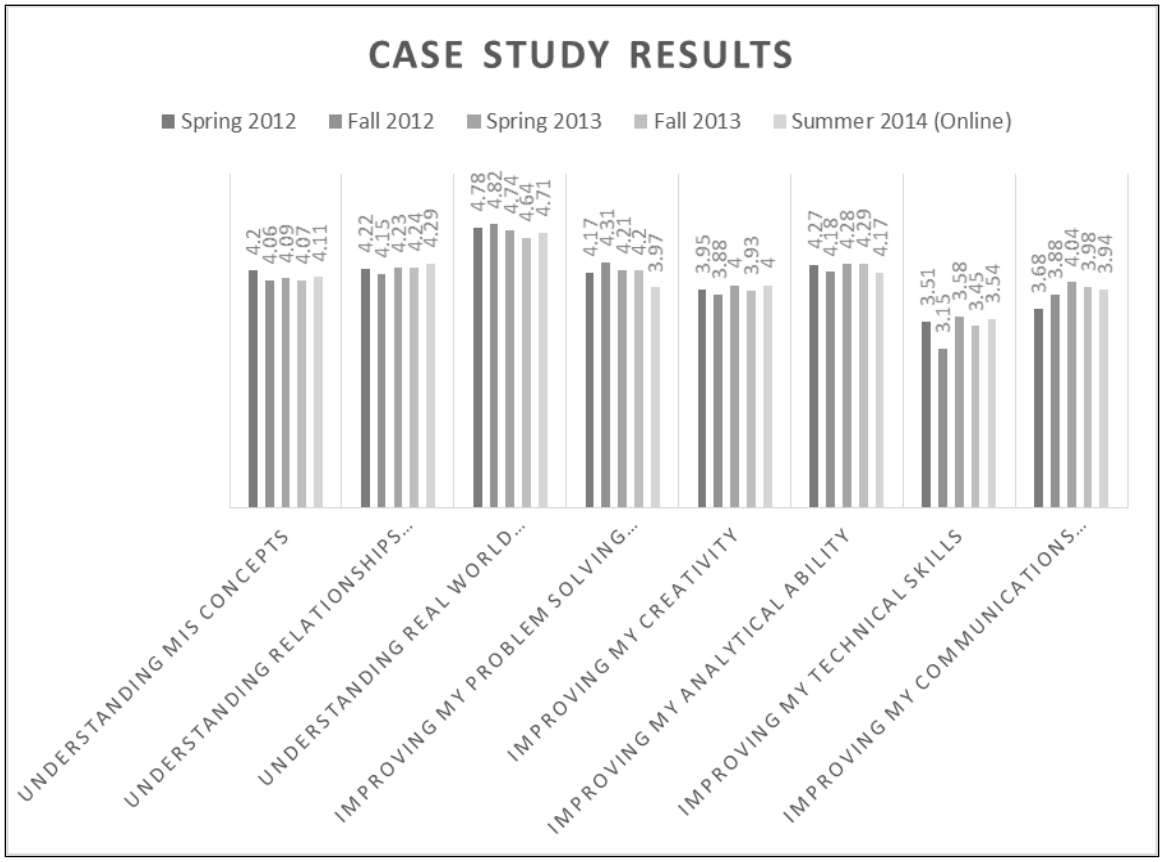

Figure 2: SALG results for case study questions for classroom (2012, 2013) and online (summer 2014) classes

Students were given extra credit for filling out SALG scores for the case studies and project activities in spring and fall of 2012, 2013 (both classroom) and summer 2014 (35 students; online). The categories available for both projects and case studies were as follows:

- Understanding MIS Concepts
- Understanding Relationships Between Concepts
- Understanding Real World Issues
- Improving My Problem Solving Skills
- Improving My Creativity
- Improving My Analytical Ability
- Improving My Technical Skills

- Improving My Communications Skills

The case study scores are illustrated in Figure 2, the project scores in Figure 3.

The SALG patterns across the three offerings are statistically indistinguishable. These findings are surprising given the substantial differences in the degree to which the online offering differed from its classroom counterpart.

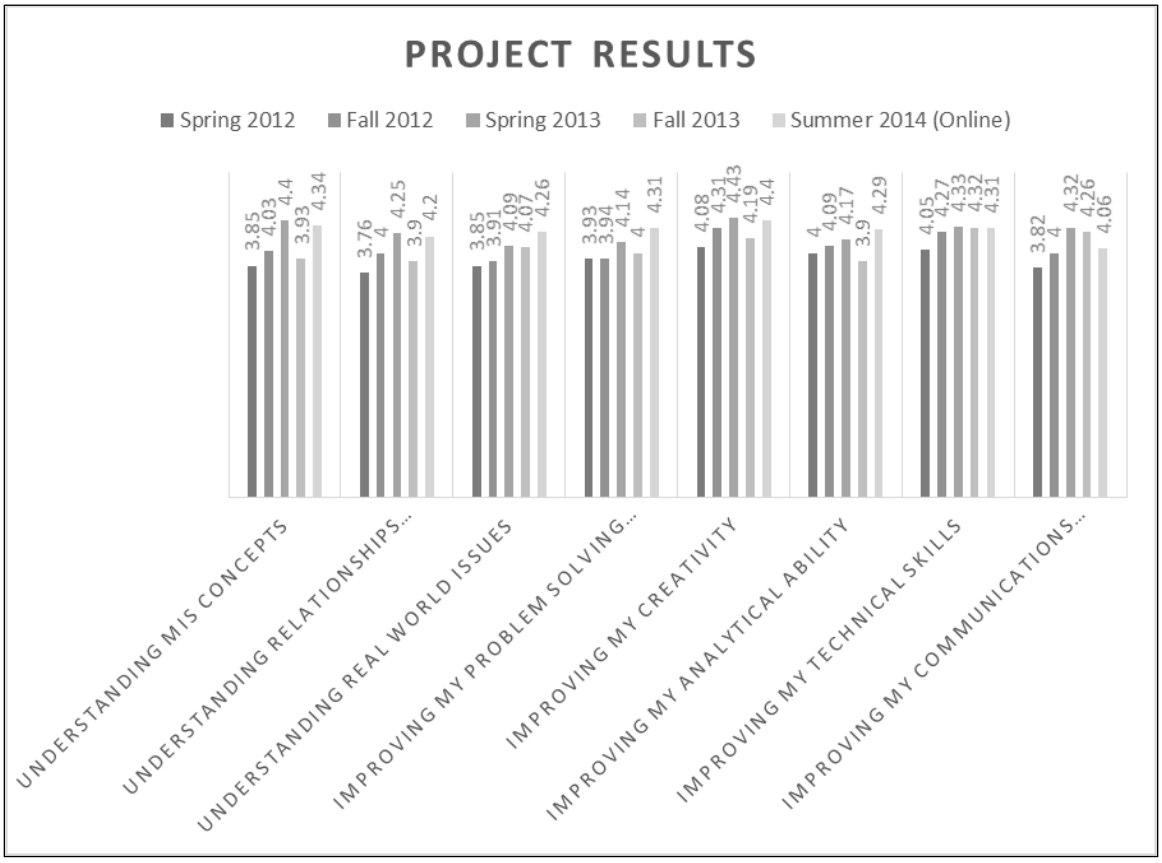

Figure 3: SALG results for project questions for classroom (2012, 2013) and online (summer 2014) classes

Course Evaluations

One area where a difference—possibly significant—difference existed between the classroom and the online versions of the course existed involved the university's standard student evaluation of instruction. Whereas the classroom version had produced reported values of around 4.5 on the university's 5 point scale (Gill & Ritzhaupt, 2013, p. 80), the summer online course yielded 4.2 overall—a respectable score that was roughly equivalent to the college average.

There are a number of possible reasons for the decline in score:

1. Overall, the students liked the online format less.
2. The volatility of the scores was such that the difference was not actually significant. That could not be determined without many additional course offering.
3. Some students really did not like the online format, while many others were indifferent.

While there is simply not enough evidence to support any of the three of these explanations, we believe the last would be the easiest to justify. One unavoidable problem with introducing pedagogies unfamiliar students has a biological analog. If we think of one's undergraduate years in terms of a survival process, individuals that cannot thrive in a classroom lecture environment quickly succumb to the "infection" caused by the delivery method. By the time the bulk of undergraduates research their capstone course, we would therefore expect that they would essentially be "immunized" to lectures, a "resistance" having been developed through multiple exposures. When a new pedagogy is introduced, however, one could assume no such immunity. As a result, some individuals might thrive under the new approach—and we certainly saw evidence of that in the course. It is also quite likely, however, that a certain percentage (perhaps a large one) will find the new technique a poor fit with their own learning preferences. Not having had the opportunity to acquire a resistance to it, they would tend to view it less favorably than they would the status quo—and might be fully justified in doing so.

The current study provides no opportunity to test this hypothesis—although even the face-to-face course, itself a novel pedagogy, had examples of some students strongly disliking the approach (e.g., Gill & Ritzhaupt, 2013, p. 81). It might be intriguing to see how the new format was evaluated in a degree program that was conducted entirely online, since students in such a program would likely have developed a similar immunization to online delivery. We view that as a possible direction for future research.

Qualitative Observations

The differences between the case discussion and project online outcomes differed significantly from a qualitative standpoint.

Case discussions

The synchronous and asynchronous versions of a case discussion are nearly impossible to compare objectively since they tend to be so different in structure. From a qualitative standpoint, the asynchronous discussions differed from the instructor's vantage point in a number of ways:

1. *They were substantially deeper in content.* The instructors' casual observation of this characteristic was further confirmed by online learning experts from the university's innovative education area, who reported being pleasantly shocked at the quantity and quality of each weekly discussion.
2. *They required much less instructor intervention.* This confirms a finding of earlier research (Webb et al., 2005) relating to online case discussions. Indeed, for most discussions the main case instructor found it entirely unnecessary to intervene in the discussion. From a constructivist learning standpoint, this is a great outcome. From an instructor's standpoint, on the other hand, it can lead to a sense of disengagement that is nearly the opposite of what is experienced in the dynamic give-and-take of the classroom discussion environment.
3. *They allowed for much more precise assessment of individual participation.* The fact that this assessment was done weekly—a time consuming process—and that students were provided with ample feedback in early discussions (including video feedback) likely accounts for much of item 1.
4. *They took much more time.* Grading, in particular, was extremely time consuming, as was recording wrap-ups after each discussion. While much of this activity bordered on the tedious, it was perceived as necessary to deliver an online case discussion experience that was equivalent to that of the classroom.

Overall, then, the conversion to online cases seemed to exhibit greater differences from the instructor and student's experience point of view than it did in terms of objective learning outcomes.

Project activity

The synchronous and asynchronous versions of the project were relatively easy to compare objectively from the perspective of the project proposal, draft and final report as previously discussed. Qualitatively the asynchronous project presentations consisting of a poster and a video component presented online differed from the instructor's vantage point in the following ways:

1. The posters were presented as a single file that was easier for the evaluator to digest and reflect upon than when standing as an observer in a Science Fair format and forced to make an evaluation in ten minutes or less.
2. The information on the posters offline and online did not appear to vary significantly from one environment to the other.
3. The video presentations (including voice overs etc.) were generally very well done and evidenced considerable preparatory work in many cases.
4. When projects involved active database, software and web-site solutions, the combination of recorded animations of the tools created and the presenter voice-overs seemed to convey an increased level of understanding of the work involved.
5. Evaluators may have taken more time with the projects because:
    a. They needed to review a poster and a video.
    b. They could do so on their own schedule.

Ultimately, additional research should be considered to evaluate the effect of better presentation skills on scoring including considerations surrounding the nature and type of presentation skills desired by future employers. Perhaps the current generation of MIS undergraduates will be expected to perform more often and more effectively in online presentations (skype, conference calls, etc.) than in face-to-face environments. Perhaps a capstone course should encourage more preparation of a project presentation on the part of students independent of whether the presentation is given synchronously in-person or asynchronously online.

Conclusions

The evidence suggests that instructors should not fear replicating case discussion courses in the asynchronous environment of online instruction. Our findings suggest that the key to a successful course is in the "how" the various components of a capstone case discussion based course are structured to begin with and then the "how" they are translated to effectively obtain the same or similar results.

Future capstone course teaching/learning environments will inevitably include opportunities for synchronous and asynchronous student-instructor and student-student interaction. The best course curriculum will afford variations on the core elements that use each environment to its greatest effect. And, well designed elements can overcome the potential challenges inherent in each environment.

The classroom affords an interactive environment for case discussion that can generate exceptional participation and compound the quality of learning as students learn from each other, the instructor and protagonists (when present). Nonetheless, at times the classroom interaction can

be overwhelming for some students and/or dominated by a few very vocal participants. Finding the right balance in participation is always a challenge in case discussion based environments.

Taking that same discussion online as we show in this research can take advantage of several novel features of online tools (such as Canvas) and clearly lead to very involved, participative case discussions that may, in some cases, actually afford a voice to students that are otherwise silent. The online environment also leaves a record of participation that can be referred to for grading purposes. These advantages may come at the price of instructor time required to read and grade case discussion streams, however.

The synchronous, in-person environment offers students the opportunity to present to their peers and instructors much as they would in a work environment. The must field questions effectively and may be able to share additional project details not visible in a poster or a stand-alone video. On the other hand, an online presentation approach that combines posters and videos may be just as important to success in a work environment and affords evaluators the time needed to effectively understand and rate a project. Utilizing video may also entail a level of presentation preparation and/or quality not completed in advance of a Science Fair presentation that is repeated 6-10 times in the space of a couple of hours.

Perhaps the most significant conclusion that may be drawn from this research is that it entirely possible to move a highly "improbable" course online with acceptable, and sometimes even laudable, results. More than once, we have heard faculty members voicing a familiar refrain:

> "*I have nothing against online courses, but my own courses are not suitable for online delivery for reasons X, Y, Z, etc.*"

We would speculate that the capstone course described here is precisely the sort of course that "can't" be offered online according to this conventional wisdom. In its classroom form, it is highly interactive and relies almost entirely on peer-to-peer communications. It would seem that moving that design to a pure asynchronous mode of delivery would require a complete rethinking of the desired learning outcomes…and not in a good way. Instead—and we admit to considerable surprise here—we found the outcomes of the face-to-face and asynchronous offerings to be effectively indistinguishable (recall Figures 2 and 3). Our best-guess explanation for this result involves the basic design principles that we employed:

1) We remained rigidly faithful to the original philosophy and learning objectives of the face-to-face version of the course while, at the same time, allowing ourselves complete flexibility with respect to how we implemented them,
2) Any time that we were able to replicate faithfully the activities of the face-to-face course without anticipating loss of fidelity, we did so (e.g., project proposal process, post-case reflections), and
3) When replicating existing activities seemed impractical, we looked at the set of features provided by our online learning platform (e.g., peer review activities) and skills increasingly common among our students (e.g., video creation) to design an alternative that seemed likely to achieve a similar outcome.

Although we doubt that these principles would come as any great surprise to instructors who have been successful in their own online course conversions, we nevertheless believe that there is considerable value to be gained by accumulating published examples of how they can be applied in different course settings.

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Appendix A: Online Case Discussion Instructions

Case Discussion Protocol

Before each case: *Preparation*

Students should expect to spend 2-3 hours preparing each case study. Preparing a case typically involves:

- Reading the case
- Making notes and analyzing the case during a careful second reading

The discussion will open precisely one week before the "Due Date" in the syllabus, which will be on a Monday, at 9am.

Tuesday of the week when a case is discussed: *Opening questions*

For each case, 6-7 questions will be posted, along with the name of each student assigned to respond to the question (each student will open 2-3 times during the semester). By *Tuesday at 9 pm* of the week that a case is being discussed, each student assigned to open should post his or her response.

Case discussion week: *Participating in the discussion*

Once an opening response has been posted, the rest of the section should enter the discussion. Each student should feel free to respond with as many posts desired. *Each student's participation in every discussion will be graded* (although the first discussion will be viewed as a source of "extra credit" only, as everyone will be learning the ropes).

What we typically look for in discussions is the following:

- Is the poster responding to another student's comments? If so, it helps if you give the name of the student, since the number of posts can become quite large.
    - Agreeing with a previous post without adding something new gets you nothing. If, on the other hand, you agree and then point out something that was missed or requires clarification, that is fine.
    - Disagreeing with a previous post—provided a good explanation of *why* you disagree in included—is considered in a very positive light.
- Repeating what someone else said simply bloats the discussion; you should always strive to add something new. The earlier an idea is posted, the more likely it will be credited.
- High quality posts will frequently include specific references to facts in the case that you believe are important. You may also reference outside sources if you found them to be valuable.

- If all your posts appear to have been made in one setting (their dates and times cluster together), we will normally deduct points. We like to see back and forth in a discussion and that cannot happen when students enter the discussion for just one session.

Each week, discussions will be graded on a scale of:

- 5=Excellent
- 4=Better than average
- 3=Satisfactory
- 2=Below average
- 1=Weak
- 0=Unsatisfactory or missing

After the discussion: *Post-case reflection*

After participating in each discussion, students will fill out a form upload it to Canvas. This form will consist of two questions:

1. What are the three most important things you learned from the case?
2. How did the case discussion change your view of the case?

I will grade these forms each week using the same 0-5 scale that I use for the discussions.

Synchronous Online Discussions: TBD

In the event the class decides to allow it, as an extra credit supplement to the Canvas discussion groups we could hold synchronous discussions of the cases on Blackboard Collaborate (accessible through Canvas). Because the class is asynchronous, we would move these discussions around so that all students have an opportunity to participate in some discussions if they so choose.

> *No matter what the class votes, we would stop holding these discussions as soon as less than 20% of the class attends two discussions in a row.*

More details, including scheduled times, will be provided on Canvas.

Source: Summer 2014 Ism4300 Course Syllabus

Appendix B: Online Project Instructions

Project Elements

Project types

The purpose of the project is to demonstrate some technological or research skill that you have acquired over the course of the MIS major. The project is individual (no group) should involve substantial complexity and will generally center around one of the following areas:

- *A programming project:* A stand-alone or web-based project that involves substantial coding in a programming language such as C#, VB or Java. Mobile apps or web-based projects involving PHP or some other environment (ASP, Ruby-on-Rails) will also be allowed.
- *A database project:* A project built around designing an SQL-based database (as well as related forms, queries and reports) for a particular business situation. Real-world or test data may be used.
- *An analysis and design project:* A project built around designing a system or application. Appropriate diagrams (ER, UML) should be prepared, along with form layouts, business process diagrams and project plans.
- *A real-world web site*: For pure web site projects, a real-world client is required. Such a client may be identified by the student or, from time to time, may be supplied by the instructor. A thorough needs analysis and approach to determining the effectiveness of such a site will be required for this category of project. If the website includes installing a local server and web-based application (such as WAMP server with WordPress installed on it), a "hypothetical" client will be sufficient.
- *A real-world case study*: Students working in business or facing complex career decisions may choose to develop a case study that is intended for use in subsequent offerings of Ism4300. These projects will need to be developed in close collaboration with the instructor and will necessarily demand a very high standard of quality.
- *A research white paper*: An in-depth research paper—20 pages in length or more—that explores a particular technology, such as WiMax, or MIS issue, such as outsourcing. *Safe Assignment* will be used to ensure that the work is original. You should have a substantial number of sources and should cite them.

Project meetings

Throughout the semester, we will be available to schedule online synchronous sessions with students to discuss their projects.

Project proposals

Early in the semester, students will submit project proposals. Forms for different projects types will be provided on Canvas. We will provide comments on these proposals, and approve them when they are in a form that makes sense. *Students should not begin serious work on their projects until they have approval.*

Posters

Each student will prepare a poster describing his or her project. These posters will be uploaded as a PDF file (Note: recent versions of PowerPoint can save to PDF) to an assignment labeled "Project Posters". Students will be assigned to peer review specified posters and presentations created by their classmates. Posters should either be roughly 36x48" (portrait) or 48x36" (landscape). Some sample PowerPoint templates are provided in the "Permanent Resources" module on Canvas. *[TBD: Students may use other templates or even other programs (such as Prezzi or a publishing program) provided they match the size dimensions.]* At or near the top of each poster should be included:

- Student Name
- Project Title
- Project ID

Poster presentations

Each student will prepare a video presentation describing his or her project, lasting no longer than 10 minutes. *[TBD: The format can be PowerPoint (with voice-over), mp4, YouTube or Prezzi with an audio track. The presentations, or link to the streaming site, will be attached to a discussion posting named "Project Presentations". If your project involves programming or technology that needs to be demonstrated on a PC, you can use programs such as Camtasia ($20 for 3 year license at bookstore; 30 day trial is free), Jing (free, but limited to 5 minutes) or the open source CamStudio (free) to make screen recordings if you need to. These can be attached—in mp4 format—or uploaded to Youtube.]* The text portion of each posting will include:

- Student Name
- Project Title
- Project ID

As part of their peer review of classmate projects, students must watch the presentation associated with an assigned poster. A web form that evaluates posters, presentations and the overall project must be filled out as part of the peer review.

Final project Write-ups

Students will submit a final project report, which is a written version of their project. A typical project report will contain:

1. A short summary explaining why you chose the particular project
2. A written document that describes the project in detail. Within the report you should include:
    a. Pasted source code and screen shots for technical projects
    b. Diagrams from database and analysis & design projects
    c. A list of properly cited references for research and case study projects
3. A page or two explaining what you learned from the project

Project reports are due ***on the last regular day of classes, as specified on canvas.*** The report should be in the form of a single Word document. The size and scope of these reports will vary according to the nature of the project. For a programming project, aside from the introductory summary and "lessons learned", the report might consist mainly of code snippets and screen shots; other projects involving technology development will likely be similar. For a white paper project or case study, on the other hand, the report will represent the most import part of the project. These will be uploaded to the designated assignment area in Canvas.

Presentation peer evaluations

Those students not presenting will evaluate each student's poster during the poster session using online forms that I will provide (see illustration below). *These forms will be evaluated*, and will be used in evaluating the projects.

Rate the project and presentation (1=Low to 5=Extremely High)*

	1	2	3	4	5
Project Difficulty	○	○	○	○	○
Project Quality	○	○	○	○	○
Presentation Quality	○	○	○	○	○

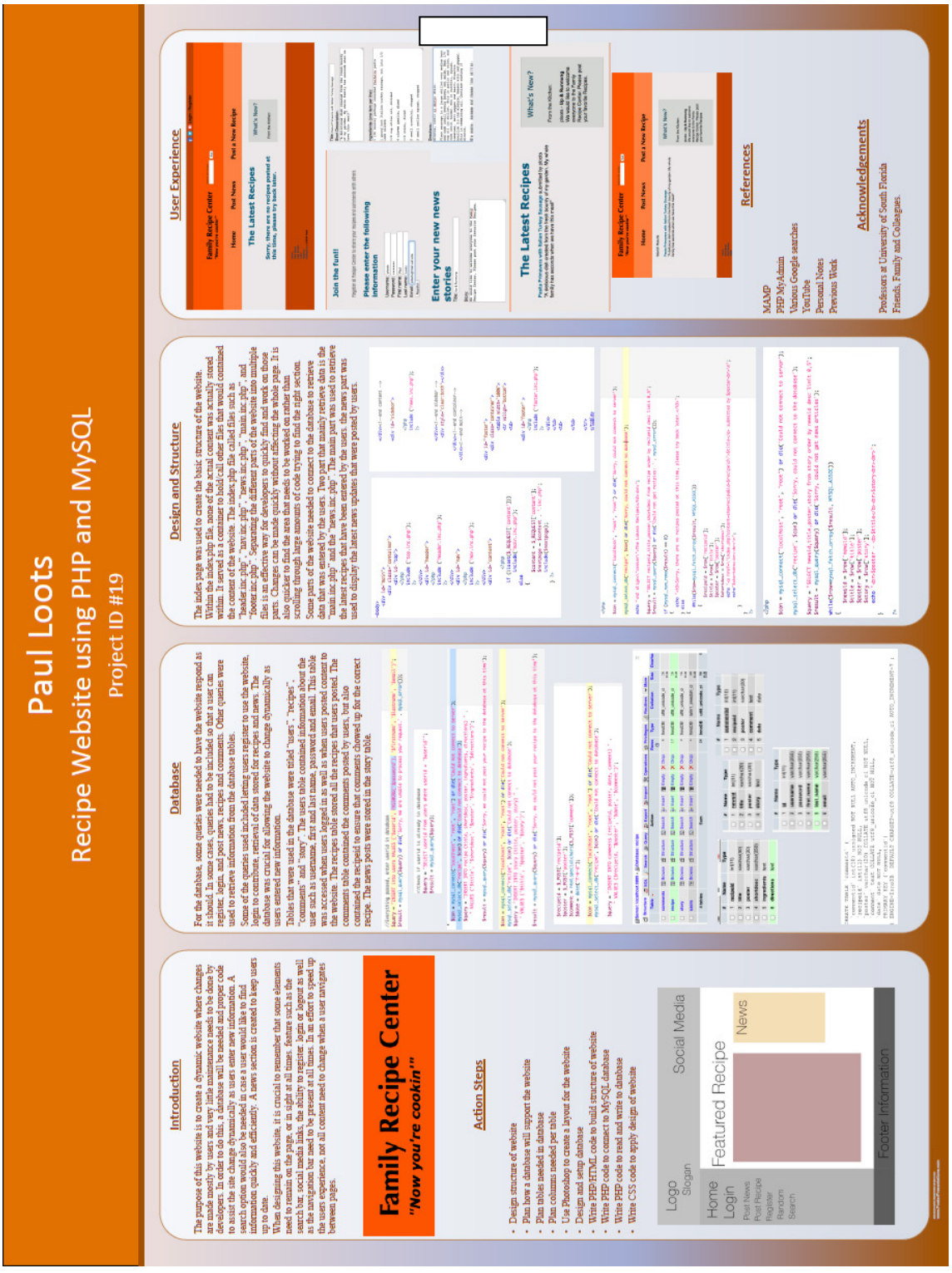
Project grading

Projects will be graded based upon the difficulty of the project and the quality of its components. Presentation peer evaluations will be included in this assessment.

Source: Summer 2014 Ism4300 Course Syllabus

Appendix C: Online Project Presentations

Example Posters



Example Peer Evaluation Comments

 Your project poster is the best one I have seen yet. You actually put together all of the different elements of the website that you created and showed how they relate to each other. Although your website (now) seems very simple, you can see that there is a lot of effort put into this and it is ready for the growth and potential with minor tweaks to make it more user friendly. Great job!

xxxxxxxxxx, Jul 14 at 10:46pm

 I like the Idea of the project, Paul. Good job. My only concern is that the poster is very technical and has a lot of information, it's Very hard to read and keep track of everything in the poster because the space was limited for all the content you put on, and the colors you used were very flashy for a professional poster.

xxxxxxxxxx, Jul 15 at 8:22am

 For the presentation:
Very professional and great explanation. You showed everything from beginning to end withing the time which was great, and now I understood why you choose the colors for the poster. Great job and well done.

xxxxxxxxxx, Jul 15 at 9:50am

 Poster board is very informative and covers all the key points in the project and presentation. The website was very well put together and the overall design was very crisp and shows great work from both design and programming. Amazing job!

xxxxxxxxxx, Jul 16 at 10:05pm

 Very good job! I must concur that your project was defiantly one of the best so far. It was so easy to watch your video and understand all of your points. Your project was very efficiently delivered and very informative. The poster was extremely detailed and had great examples. I loved the site interface. Overall great job.

Biographies

T. Grandon Gill is a Professor in the Information Systems and Decision Sciences department and the Academic Director of the Doctor of Business Administration Program at the USF MUMA College of Business. He holds a doctorate in Management Information Systems from Harvard Business School, where he also received his MBA and BA. His principal research areas are the impacts of complexity on decision-making, the diffusion of academic research findings and applying the case method to STEM education. He is currently Editor-in-Chief of *Informing Science: The International Journal of an Emerging Transdiscipline* and an Editor of the *Journal of IT Education.* He is the founding editor of two discussion case repositories: *Journal of IT Education: Discussion Cases* and *Informing Faculty*.

Matthew T.Mullarkey is the Director, Doctor of Business Administration Program at the USF MUMA College of Business and a Visiting Professor in the Information Systems and Decision Sciences department at the University of South Florida. He holds a Ph.D. in Business Administration (Information Systems) from USF, a BS, Engineering, from the United States Military Academy, an MS, Systems Management, from the University of Southern California, and an MBA from the Moore Business School, University of South Carolina. Matt has more than 25 years of experience as President, CEO, COO, and SVP in the automotive, applied materials and medical device industries with P&L responsibilities globally. His principal research interest are the impact of social networking in and between organizations, monetization of companies' data streams, and applying the case method to MIS and MBA education. He is an editor for the *Journal of IT Education: Discussion Cases.*