Student-Created Assignments in an Undergraduate Accounting Information Systems Course: Student and Faculty Perceptions

Grace F. Johnson
Marietta College

Bethany McFarland
Marietta College

Rachel Worthington
Marietta College

This paper examines how student-created case studies can enhance students' understanding of internal control in an undergraduate accounting information systems (AIS) course Students say cases require critical thinking, enhance research skills, and demand greater understanding of AIS course content. Faculty appreciate their use as cases can develop student engagement in the topics, incorporate real world examples, improve critical thinking and analysis, and stimulate class discussions. Drawbacks include students' lack of breadth or depth of knowledge and work experience to create meaningful cases. Faculty perceive a lack of fairness or standardization in the case content and grading and evaluating challenges.

INTRODUCTION

Calls for more interactive, learner focused college classrooms have been around for a number of years. Vreman-de Olde and De Jong (2004) state an expectation that students should make a substantial contribution to "the way they manage information and educational tasks". Albrecht and Sack (2000) emphasize this point for the undergraduate accounting curriculum in particular.

One way of introducing more student involvement in the classroom and fostering increased student responsibility for learning is to use student-created assignments. For the purpose of this project, we define these assignments as authored by students using material of their choosing. Students create the idea, design and write the assignment, and prepare a solution. Such assignments might include homework exercises or problems, in-class activities, quiz or examination questions, minicases or complete case studies, and discussion seminars. Student-created assignments, particularly case studies, provide an active method for students to observe the relevance between conceptual academic material and the world of work (Ashmalla and Crocitto, 2001). With student-generated assignments, students can move to more active levels of participation: specifically to the synthesis and evaluation levels of Bloom's taxonomy (Greenstein and Hall, 1996).

This paper examines how student-created minicase studies were used to enhance students' understanding of internal control in an undergraduate accounting information systems course. After a brief review of the literature on student-generated assignments, the paper describes how such cases were integrated into an AIS course in the Spring 2011 semester. Student feedback – gathered through pre- and post-assignment focus groups and an online survey – is reviewed. In an effort to include faculty perspectives on the topic, AIS faculty were surveyed and their comments are also presented.

LITERATURE REVIEW

Dori and Herscovitz (1999) remind us that when using student-created assignments the focus is not on students to demonstrate knowledge of a subject on an examination but to "construct, gain, or use knowledge about the matter in question". Students who create assignments are involved in a series of tasks: developing questions; arriving at answers and alternatives; and explaining the options (Vreman-de Olde and De Jong, 2006). Since most students likely will not have experience with such unstructured work, the assignments might address superficial topics or involve simplistic tasks (Vreman-de Olde and De Jong, 2004; Vreman-de Olde and De Jong, 2006). Students might be overwhelmed by the demands of creating their own assignment and feel it is more complex than it actually is (Ashmalla and Crocitto, 2001; Student Feedback, 2011a). Therefore it can be beneficial to provide guidelines, support, and examples so students can experiment and construct their ideas. Ashamalla and Crocitto (2001) use a written handout to outline main points about student-created case studies. Quintana et al. (2004) propose a collection of scaffolding guidelines to structure the scientific problem-solving process. Some of these could be extended to the process of having students generate their own assignments, including using language that bridges students' comprehension of older and newer subjects, providing structure for complex tasks, and embedding expert guidance about practice. Vreman-de Olde and De Jong (2006) use a "design sheet" to scaffold students through the question definition phase of student-created assignments.

Yu and Liu (2009) mention various benefits of using student-created questions, including increasing the depth of understanding, moving from acquiring knowledge to using it, taking responsibility for learning and "owning" the subject matter, building up more sophisticated thinking skills, and creating different and adaptable ways of thinking. Vreman-de Olde and De Jong (2004) explain that the process of designing questions makes students think about main ideas and "checking whether content is understood", as well as distinguishing between familiar and unfamiliar material and making choices about how to present it. Connor-Greene (2005) uses student-generated questions and student-prepared assignment quotes and talking points to foster careful reading and equip students for meaningful class discussion. Ashamalla and Crocitto (2001) contend that for bridging theory and business practice, student-created case studies have the potential to be more meaningful than pre-written cases. This was echoed by a student in the accounting information systems course where student-created assignments were employed (Anonymous Student Feedback, 2011a).

Dori and Herscovitz (1999) find the type of questions created by students generally shift from low-level (factual and recall questions) to high-level (involving judgment and opinion) after they gain experience creating their own questions. Brink, Capps, and Sutko (2004) describe an assignment where freshman students created the final examination. Multiple choice and fill-in-the-blank questions were not permitted. Consistent with the results of Dori and Herscovitz (1999), Brink et al. (2004) conclude that student-created assignments were more effective for above average students than below average students. Brink et al. (2004) also confirm that final examination grades were higher for students who designed good model examinations and appropriate answer keys.

Yu (2011) reports on the value of having fellow students offer feedback about student-generated questions. In his work, more than 95 percent of the students agreed or strongly agreed that peer review supported their learning. Peer comments help students identify weaknesses with their questions and refine them. Students found the process beneficial in both roles – as question author and question evaluator. Similarly, Gehringer and Miller (2009) find that students benefit from peer review of their self-created assignments, particularly in the editing and revision stages.

STUDENT-CREATED ASSIGNMENTS IN AN ACCOUNTING INFORMATION SYSTEMS COURSE

At the 2010 meeting of the North American Accounting Society, one of this paper's authors attended a presentation where student-created assignments were discussed. Upon returning to her institution, she thought of the various ways she was already making use of student-created assignments, particularly in the accounting capstone course, Accounting Research. The approach seemed to work well with graduating seniors. She considered other courses in the accounting curriculum to which the benefits of student-created activities might be extended. Because of its flexibility and lack of a rigid body of content that had to be covered during the semester, the junior-level Accounting Information Systems (AIS) course emerged as the candidate for this experiment.

Two student-created assignments were incorporated into the syllabus for the Spring 2011 offering of AIS. Both involved the creation of internal control minicases (1-2 pages in length and containing several open-ended questions). Students used domestic and foreign newspaper accounts of internal control and fraud situations as their starting points, then developed minicases using situation facts. These minicases and the related questions focused on recognizing specific internal control weaknesses and suggesting appropriate controls that could be employed to reduce risks of asset loss or financial reporting improprieties.

At the start of the semester, students worked a sample minicase written by the course instructor and reviewed several pages of guidelines contained in *Writing Case Studies: A Manual*, prepared by the Saskatoon Public Schools Online Learning Center (Saskatoon, 2009). During one class period they practiced writing – in teams – their first minicases and tested them with classmates. After these opportunities for practice, the two graded student-created minicases were prepared individually. The two minicase grades comprised 40 of the course's 125 points.

Instructor-created minicases were periodically used during the semester to exemplify how minicases might be constructed.

STUDENT FEEDBACK

Student Survey and Focus Group Methodology

Student feedback regarding student-created assignments was gathered by means of an online survey and two focus group sessions. The group of student responders was comprised of individuals enrolled in the Spring 2011 AIS course. Approximately two weeks before the end of the semester, invitations were emailed to all students enrolled in the class, inviting them to complete the online survey. Of the 26 students, only three students completed the survey. Due to the low response level, comments shared below come solely from the focus groups.

Student focus groups, conducted at the beginning and end of the semester, served as an alternative method of collecting student feedback on the topic of student-created assignments. A pre-assignment focus group session was scheduled during the first month of the semester. The purpose of this meeting was to gather students' thoughts about student-created assignments prior to being asked to develop and complete the minicases. Six students (23 percent of those enrolled in the course) chose to participate. In addition to the initial feedback, a post-assignment focus group was conducted during the final week of the semester. After having completed several student-created assignments throughout the course, the same six individuals were again welcomed to share their thoughts regarding student-created assignments. All six students participated.

Results of the Student Focus Group

Six students participated in the focus groups. During both the pre- and post-assignment focus groups, students were asked questions about the benefits and limitations of student-created assignments. Tables 1 and 2 display a selection of the views shared by the students.

TABLE 1
BENEFITS OF STUDENT-CREATED ASSIGNMENTS AND CASE STUDIES

Pre-Assignment Focus Group	Post-Assignment Focus Group
Student-created case studies serve as a good tool for the student conducting the research and producing the assignment.	Student-created assignments require more creative thinking than simply answering questions in response to a pre-written case.
A student participant who had past experience with student-created case studies in another course felt that the assignments serve as a useful learning tool.	Additional research and a more thorough understanding of the subject are necessary to develop an effective case study.
	Students must be able to both develop a hypothetical situation based on facts, as well as to understand which solutions would be most effective.

TABLE 2
LIMITATIONS OF STUDENT-CREATED ASSIGNMENTS

Pre-Course Focus Group	Post-Course Focus Group
Students may not have the necessary experience or knowledge to create realistic case studies and assignments.	Reading, thoroughly understanding, and providing solutions to a pre-written case require a similar amount of creative thinking without the busy work.
Case studies will not vary in content from student to student due to a limited exposure to real-world situations.	Students do not have the appropriate breadth or depth of knowledge to create case studies that vary in content. Individuals experienced difficulty writing multiple cases because of the similarities to the first case study.
Assignments will be oversimplified.	
Students do not have the necessary experience to develop assignments that are detailed and specific. Case studies will be too general to serve as an effective learning tool.	

Students were also asked if they felt that there are other assignments or projects with benefits that are similar or greater than those produced by student created assignments. This question was presented during both focus groups; Table 3 reports students' comments.

TABLE 3
ALTERNATIVE ASSIGNMENTS WITH SIMILAR BENEFITS

Pre-Course Focus Group	Post-Course Focus Group
Class discussions are oftentimes equally beneficial, depending on the subject.	Providing solutions to pre-written cases exposes students to a greater variety of situations.
Reading and evaluating a pre-written case study serves a similar purpose as creating the assignment. A student who can identify the problems in a case would be able to develop a similar situation.	Assignments that allow students to consult directly with local businesses would be more beneficial. This approach would allow students to develop different perspectives on business conduct and the potential problems that could arise.

Finally, during the post-assignment focus group students were asked to discuss their experience with student-created assignments. Their perspectives are shown in Table 4.

TABLE 4
OVERALL EXPERIENCE WITH STUDENT-CREATED ASSIGNMENTS

Students found that student-written cases were a beneficial part of the class, which reinforced the course content.
Students also felt that one or two student-created assignments is a useful learning tool but that other types of assignments and projects should be incorporated into the course as well.
Students in the post-assignment focus group discovered student-written case studies to be more helpful than they had originally anticipated.

AIS FACULTY PERSPECTIVES

Faculty Survey Methodology

In addition to gathering and evaluating student feedback, we felt it important to survey faculty who teach undergraduate AIS courses. Two tactics were used to develop a list of AIS faculty to survey. For more than a dozen years the AIS Educator Association has sponsored the annual AIS Educator Conference. The 2010 conference program was available on the association's website; participant, reviewer, and board member names were noted and their e-mail addresses researched. A second source was a general Google search for faculty who teach undergraduate AIS courses. These two approaches yielded a pool of 118 faculty to invite to take the survey.

Approximately one week prior to launching the survey, the 118 invitees were sent an e-mail message informing them about the upcoming survey. Those who did not wish to complete the survey were encouraged to respond and request to be removed from the invitation list. Two faculty responded. An additional eight e-mail addresses were invalid or messages to the recipients were undeliverable. Thus, a total of 108 invitees received the e-mail message containing the Zoomerang online survey link. Invitees were given nine days to complete the survey. One day before the survey closed, a reminder message was sent to the invitees.

Thirty faculty (27.8 percent) completed the survey. This rate is higher than averages reported in research about online survey response rates where e-mail invitations are used (Sheehan, 2001; Kaplowitz, Hadlock, and Levine, 2004; Muñoz-Leiva et al., 2010).

Faculty Survey Results

Of the 30 respondents, 53 percent were female and 47 percent male. Twenty-four percent were between the ages of 30 and 43; 45 percent were aged 44 to 57 years; and 31 percent were 58 years of age or older. The majority (53 percent) had been teaching AIS courses for somewhere between eight and 15 years. Fourteen percent had AIS teaching responsibilities in excess of 15 years, and 33 percent had been teaching AIS for between one and seven years. Additionally, 37 percent (11 respondents) identified themselves as teaching at four-year colleges, while the remainder (63 percent) indicated they were employed at institutions offering masters and doctoral degrees. Seventy-three percent taught at public institutions, while 27 percent taught at private institutions.

Respondents were asked to indicate all teaching and learning techniques, from a list of 12, used in their AIS classrooms. These are shown in Figure 1 (Appendix). It is interesting to note that none of the 30 faculty incorporate service learning activities. All respondents employ lectures to some extent and nearly all (29 of 30) involve students in classroom discussion.

A second cluster of survey questions focused on the use of student-created assignments in AIS courses. Only three of the 30 faculty (10 percent) have used such techniques. The final closed-ended question in the survey asked respondents to identify the importance their department or institution places on developing and using innovative teaching/learning tools in their AIS courses. Figure 2 (Appendix) communicates this result.

Faculty members who used student-created assignments in their AIS courses were asked to explain why they chose to implement them and to discuss some of the disadvantages associated with their use. Tables 5 and 6 share their comments.

TABLE 5
REASONS WHY STUDENT-CREATED ASSIGNMENTS ARE USED

So students cannot Google the answer for text assignments.
To learn about the software (Access, Excel, and Web design applications).
Student engagement, real world examples, critical thinking and analysis, and class discussion, both on the process of research and deliverable creation as well as learning from the PowerPoint presentations and constructive criticism.

TABLE 6
DISADVANTAGES OF USING STUDENT-CREATED ASSIGNMENTS

Perhaps not as comprehensive.
Lack of fairness, unequal responsibility, copying, no standardization, difficult to grade and evaluate, team arguments, students unable to complete assignments due to illness, job interviews, etc.
Student-creators having an advantage over others.
Students want an example deliverable and we do not provide this.

The feedback provided in Table 6 was offered by more than the three faculty who used student-created assignments. As it was not possible to identify the three adopters' comments, all responses are reported in Table 6.

The three faculty using student-created assignments provided descriptions of the assignments in varying levels of detail. Table 7 presents these accounts.

TABLE 7
DESCRIPTIONS OF STUDENT-CREATED ASSIGNMENTS

Students create a business process narrative and flowchart.
Access, Web design, Excel.
Select an instructor approved company of your choice and using their SEC 10-K for information supplemented by other research, relate textbook topics to your company. Deliverable is a report on AIS issues, internal control, and risk management. The business report (Word document) is supplemented with a six slide PowerPoint presentation shared with students in the class. Each student must provide constructive criticism and comments to the work of at least one other student. The creator then has an opportunity to decide what to do with the constructive criticism and comments as they prepare to submit the Power Point for grading by the professor.

The final question in the survey asked faculty not using student-created assignments to identify some of the reasons they do not use them. Twenty-five respondents replied. Nine respondents indicated they had never thought of using such assignments in their courses. Several mentioned they did not feel students in the undergraduate AIS course had sufficient knowledge to create their own assignments; they would be more inclined to experiment with student-created assignments in a graduate AIS course. A lack of control over such assignments was mentioned by three respondents. Two faculty stated that such unfocused assignments would be challenging to work with. A sample of representative comments follow.

- The course was packed with a lot of pre-defined projects due to Access, general ledger software, and Excel texts (in a textbook rental school) so did not seem as though I could change it that easily. When I had more discretion over choice (at my former institution), this idea never occurred to me.
- The class is full with the assignments I provide. Too, students are novices and not well enough informed to direct their own assignments. That is my job.
- I had not thought of it. Offhand it sounds a little unfocused, but it might be a memorable experience for the students.
- Too much disparity in what they choose. Difficult to grade fairly and consistently.

PUTTING IT ALL TOGETHER – FUTURE WORK WITH STUDENT-CREATED ASSIGNMENTS IN AIS

Observations

Student-created assignments present rewards and risks to students and faculty. While students may feel these assignments strengthen connections between their classroom and outside worlds, they can be apprehensive about how to approach such unstructured work. David Kolb (1984) understands that the abilities used in experiential learning can frequently be at "polar opposites" with each other, for example between the dimensions of concrete and abstract, and active and reflective. Students rely on all of these abilities – to a greater or lesser extent depending on the situation – in developing their own assignments. It is challenging for a student to think in both concrete and abstract levels while being creative yet pausing to reflect on what's being created (Figure 10). Yet this is what we ask of students when using student-created assignments.

Faculty recognize that one effective mode of learning about something is to experience it, but evaluating student-generated material can be filled with uncertainties and inconsistencies. It seems appropriate to include faculty guidance and support (scaffolding) as well as breaking up the assignment into smaller components so peer and faculty feedback can be incorporated into a revision process.

Limitations

One section of one accounting information systems course at a single college cannot be counted on to generalize results. But this project's objective is not to make sweeping statements about the impact of using student-created assignments in an AIS course. Rather, we hope to present the idea to undergraduate AIS and other accounting faculty for their consideration, outline the benefits and drawbacks, and let faculty choose whether they shall try the technique.

Conclusion

In reviewing the information presented in this project regarding student-created assignments, the effectiveness of these assignments is assessed. Due to a small number of participants in the student survey and focus groups, the lack of student feedback makes it impossible to draw any conclusions; however, several of the students who did participate gave positive feedback regarding the usefulness of student-created assignments. While some still had concerns about their ability to complete the assignments based on limited experience and knowledge of the course material, comments frequently suggested that after developing and using these assignments throughout the semester, students felt that student-created assignments succeeded in reinforcing course content, although other projects may serve a similar purpose.

In examining the faculty survey results, only 10 percent currently use student-created assignments, although 23 percent find it highly important to develop and incorporate innovative teaching techniques in an accounting information systems course, and another 47 percent found it moderately important. Some of the disadvantages of student-created assignments from the faculty perspective include subjectivity in grading, insufficient time in the course to use such assignments, and limited depth of student knowledge; however, other faculty admitted that student-created assignments had never before been considered as a possibility and thought that they would be useful in their courses.

The small number of respondents does not allow us to generalize about the effectiveness of student-created assignments. Although some students and faculty feel these assignments are not the best representation of a student's understanding of the course content, many agree that student-created assignments present a unique way to engage students and allow them to demonstrate the knowledge they have obtained.

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APPENDIX A

FIGURE 1
TEACHING AND LEARNING TECHNIQUES USED IN AIS COURSES

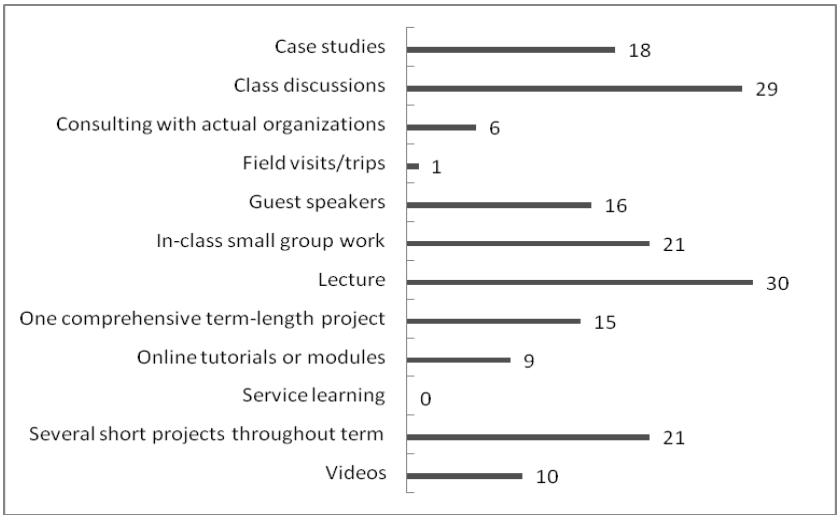

FIGURE 2
IMPORTANCE OF DEVELOPING/USING INNOVATIVE TEACHING AND LEARNING TECHNIQUES IN AIS COURSES