Dexter Buys a Surfboard:
An Exploratory Study of the Impact of a Classroom Activity and Reflection Paper on Student Perceptions of the First AIS Course

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ABSTRACT

In most accounting curricula, students enroll in the first accounting information systems (AIS) course after they have completed at least two accounting principle courses and are familiar with accounting fundamentals. However, these courses tend to teach topics as discrete subjects so many students have a poor understanding of how the data they are journalizing actually flow through an AIS. Because they have not previously thought about the concept of a system, most students also have trouble linking material in AIS textbooks to prior learning. To help students relate prior learning to AIS concepts, an in-class activity titled "Dexter Buys a Surfboard" was developed. This in-class activity was combined with a textbook reading and a required reflection paper. Statistical analyses found that the combination of a textbook reading, the in-class project, and a structured reflection paper did positively affect students' perceptions of the importance of learning about AIS. Further analyses found that GPA, accounting-related work experience, and gender were not related to the change in student perceptions, making this pedagogical technique valuable for a variety of student groups.

Keywords
Keywords - AIS First Course, Simulation, Reflection Paper, Active Learning

Teaching notes and electronic files are available for use with this case. If you are member of the AIS Educator Association, please go to http://www.aiseducators.com and follow the links for the AIS Educator Journal materials. If you are not a member of the Association, please contact the author directly at the address provided above to obtain these materials. Please provide a means for verifying your credentials as a faculty member so that we may protect the integrity of the solutions materials.

INTRODUCTION

In most accounting curricula, students enroll in the first accounting information systems (AIS) course after they have completed at least two accounting principle courses and are familiar with accounting fundamentals. The courses the students have taken at that point, however, tend to explore accounting topics as discrete subjects: individual chapters in textbooks are devoted to assets, liabilities, equity and so forth. Because accounting topics tend to be taught in this fashion, many students enrolled in the first AIS course have a poor understanding of how the data they are journalizing flows through an accounting system. Further, many students do not understand how accounting topics are integrated into a system, nor do they perceive the importance of this understanding.

One of the challenges of the first AIS course, thus, is to provide opportunities for students to understand how all of the diverse bits of information they have learned about accounting are organized into a unified whole. Although the first few chapters of many AIS textbooks introduce material relevant to this objective, many students have trouble linking this material to prior learning because they have not previously thought of accounting fundamentals as part of a system.

In order to help students relate their prior learning to the concept of a system, an in-class activity titled "Dexter Buys a Surfboard" was developed and combined with a textbook reading and a required reflection paper. Over the years, many students have expressed their support for this pedagogical approach when they responded to the last question in the required reflection paper, which asks if the project was helpful to them personally. Some of these comments are presented in the Appendix A as Exhibit 1.

As encouraging as these qualitative statements are, it was decided to conduct a pre-and post-treatment exploratory study to quantitatively determine the impact of the "Dexter Buys a Surfboard" in-class project and the related assignments on student perceptions of the importance of learning about AIS. The research questions examined in this project were as follows:

1. Does the combination of a textbook reading, an in-class project, and a reflection paper affect students' perceptions of the importance of learning AIS?
2. Are GPA, accounting-related work experience, and gender related to any changes in students' perceptions of the AIS course after a textbook reading, an in-class project, and a reflection paper?
3. Does requiring students to write reflection papers after the in-class project have an incremental effect on the students' perceptions of the importance of learning AIS?

It is important to note that the focus of this study is on how the pedagogical technique described in this paper changed student perceptions and not on what the students actually learned or comprehended.[1]

A great deal of research has been conducted concerning the ways in which pedagogical techniques impact various types of student perceptions. For example, studies have been con-

[1] Numerous accounting educators have investigated the effect of active learning pedagogies on student learning and have obtained positive findings. For examples of studies that have explored the value of using case studies, in-class projects, and reflection papers, see Luckett and Mladenovic (1999); Weil, Oyelere and Yeoh (2001); Murdoch and Guy (2002); Ballantine and Larres (2004); Potter and Johnston (2006); Wells, De Lange, and Fieger (2008).

ducted which explored how pedagogical techniques can change student perceptions of the accounting principle course (Caldwell, Weisbar and Glezen 1996; Miladenovic 2000; Geiger 2000). In 2008, Ferreira and Santosa found that in a managerial accounting course, student performance was negatively affected by the negative perceptions of accounting that students brought to the subject. Their findings also suggested that positive student perceptions of accounting by the end of the semester had a positive impact on student performance.

Building on these studies, accounting educators have begun to explore the relationship between student perceptions and performance in AIS courses. For example, Stanley and Edwards (2005) explored the effect of on-line multimedia on student perceptions of accounting information systems cycles.

Because previous research has reasonably established that there is a positive relationship between students' perceptions and improved academic performance, this study does not further explore that relationship. Rather, this study assumes that a positive change in student perceptions of the AIS course will improve student performance in the course. As a result of this assumption, the exploratory project described in this paper explored the relationship between one pedagogical technique and student perceptions of the importance of learning AIS as well as the impact of GPA, accounting work experience, and gender on any change in student perceptions.

In the first section of this paper, the "Dexter Buys a Surfboard" in-class activity is described while the second section describes the methodology used in the exploratory study. The third and fourth sections present the findings of the study and conclusions respectively. The teaching notes for the in-class activity are in a separate file.

IN-CLASS PROJECT DESCRIPTION

Although the "Dexter Buys a Surfboard" in-class project is designed to be used very early in a semester, students should be introduced to the concepts of audit trails and transaction cycles before the in-class project is implemented. Students need this information to gain a better understanding of the points made during the in-class exercise. Instructors who have a student population familiar with this material will not have to include this discussion before the in-class project.

Because my students are not familiar with the concepts of data flows, audit trails, and transaction cycles, I use the "Dexter Buys a Surfboard" in-class project at the end of the second class period of the course. The first day of class, I discuss material in Chapter 1 of the Romney and Steinbart (2009) textbook, including the objectives and components of an AIS and the characteristics of useful information. Following this discussion, I distribute to the students a list of activities that occurred when Dexter bought a surfboard from Surfing USA. This list of activities is presented in Appendix A as Exhibit 2.

Students are told that they need to write the appropriate journal entries for these activities for the next class period. Students are also told that some of the activities do not require journal entries and that they need to identify those activities. Individual instructors will need to decide if they want to attach points to this assignment. Whether or not the assignment is graded, the students must be prepared to discuss the journal entries in the next class session.

During the first part of the second class period of the semester, I discuss a reading assignment and complete a homework problem dealing with audit packages. In this discussion, I focus on introducing the concepts of audit trails and transaction cycles. After we discuss the

textbook material, I ask the students for the appropriate journal entry for each of the activities related to Dexter buying a surfboard. These journal entries are presented in Teaching Notes Appendix B as Exhibit 1.

As the students identify the activities that do not require a journal entry, I ask the students if any data would be collected for that activity. For example, most of the students realize that when Dexter calls on the 2nd, the sales department would log in the call and collect some basic facts about Dexter. Through these questions, they realize that the company would be collecting operational data that is not journalized.

After discussing the journal entries, I ask the students if they have ever thought about what happens in a business when activities such as those on the list occur or how the necessary entries are journalized. Most traditional-aged accounting students have not considered such issues because they have not had appropriate work experiences. At this point, I distribute the handout that describes the organizational structure of Surfing USA, including its approach to segregation of duties. This handout is presented in Appendix A as Exhibit 3.[2]

After discussing the handout, the students are divided into at least two "companies." Each "company" is then divided into the six Surfing USA departments described in Exhibit 3. Each "department" is given a sign tent with the name of the department as well as the following source documents.

- Treasury: blank bank deposit slips
- Sales: a three-part sales order and a three-part invoice
- Purchasing: a three-part purchase order
- Receiving: a two-part receiving report

Once the class is organized into companies, each activity is analyzed as described in the Teaching Notes.

As the students work through each of the activities as indicated in the Teaching Notes, I ask the students what departments are involved in the activity, what source documents would be filled out, who needs to get copies of the source documents in order to properly perform their duties, and who should make any necessary journal entries. I remind the students that all of these questions must be answered without violating the internal control concept of segregation of duties as outlined in the Exhibit 3 handout.

The students struggle with these questions because, although they are familiar with the accounting fundamentals related to the activities, they have not thought about how those fundamentals are related to processes. By the end of the project, multiple copies of the source documents are distributed throughout each "company" and audit packages are more or less created. In my experience, the revenue cycle and expenditure cycle audit packages are usually combined into one. The general atmosphere in the classroom ranges from confusion to frustration to mentally engaged.

Many students express frustration with the complexities of the paperwork flows and trying to figure out who needs to know what without violating the concept of segregation of duties. A few students have asked for the right answer concerning the disposition of the documents. I tell those students that we will be exploring these issues the rest of the semester and remind the

[2] At my university, basic internal control concepts such as authorization and segregation of duties are introduced in the principle courses. If students have not been taught these concepts, they should be briefly introduced before the project continues. Alternatively, instructors could choose to delete this concept from the project.

students that their reflection papers are due the next class period. The assignment is presented in the Appendix as Exhibit 4.

RESEARCH METHODOLOGY

To measure the effect of the textbook reading, the "Dexter Buys a Surfboard" in-class activity, and the required reflection paper on student perceptions of the importance of AIS, I conducted a pre- and post-treatment exploratory study for three semesters. In this study, all students participated in the textbook reading and in-class activity, but only the treatment group completed the reflection paper. The research questions presented earlier in this paper were converted to the following hypotheses:

> **H_0** The combination of a textbook reading, an in-class project, and a reflection paper did not affect student perceptions of the importance of learning AIS.
>
> **H_1** GPA, accounting-related work experience, and gender are not related to any changes in students' perceptions of the AIS course after a textbook reading, an in-class project, and a reflection paper.
>
> **H_2** Requiring students to write reflection papers after the textbook reading and in-class project had no incremental effect on the students' perceptions of the importance of learning AIS.

This study was conducted at a Midwestern medium-sized regional state university; the college of business is AACSB accredited. Because I am the only faculty member that teaches AIS at this institution, the surveys were administered to one hundred percent of the accounting students enrolled in the AIS course each semester.

During the time frame of this study, I taught two sections of the first AIS course in the two fall semesters and three sections in the one spring semester. In the two fall semesters, students in one section were part of the control group and students in the other section were part of the treatment group. In the one spring semester, students in the largest section were part of the treatment group while students in the other two sections were part of the control group. A total of 205 students participated in the study; 111 students were assigned to the control group and 94 students were assigned to the treatment group.

Pre-Treatment Student Survey

In the period in which the in-class activity was conducted but before it started, all of the students were asked to complete the survey presented in Appendix A as Exhibit 5. The students were asked to pick a four-digit ID number, making the survey anonymous. Because the students in the treatment and control groups were not randomly selected, demographic data (gender, accounting-related work experience, and GPA) was collected in order to determine if the two groups were equivalent. Additionally, these demographic variables were needed to analyze research question two.

In both the pre-treatment and post-treatment surveys, students responded to three questions by using a Lickert scale with "1" being "strongly disagree" and "7" being "strongly

agree." Questions "a" and "b" were written so that the students should disagree with them while question "c" was written so that the students should agree with it. Questions "a" and "b" represent two of the three business functions that an AIS should fulfill according to the Romney and Steinbart text (2009, p. 7). These functions were used as the basis for the survey questions because they are global statements concerning what an accounting information system is and does. Based on the findings of previous research, positive student perceptions of these global statements should encourage positive performance in an AIS course.

In order to isolate the impact of the reflection papers on any change in student perceptions, students assigned to the treatment group were required to complete the assignment. Five points were awarded to students if they turned in a paper. The assignment was referred to as a "summary paper" because students reacted more favorably to the word "summary" than they did to the word "reflection." Many of the students appeared to equate the term "reflection" with busywork. Students in the control group were required to complete a five-point reflection on another topic later in the course.

One of the weaknesses of this exploratory study is that the effects on student perception related to the in-class activity and the textbook reading assignments/classroom discussions are unknown. In order to parse out the effects of these two pedagogical techniques, only some of the students each semester would have been required to complete the in-class activity. Because of the nature of my teaching load, this research design was not feasible. Additionally, I was not willing to take this action due to ethical considerations; the methodology of this study was approved by the university committee supervising studies with human subjects.

Another limitation of this study is the variety of variables that were not captured but might impact student reaction to the in-class activity and the reflection paper. Examples of variables that could affect student perceptions include the following: level of interest in the subject, learning style, personality type, level of fatigue while completing the activity, the format of the research instruments, and the format of the reflection paper.

GPA was chosen as a possible covariate in this study because that metric is a measure, in part, of an individual's ability to learn in a classroom environment and the methods students use to learn (Elias 2005). Students with varying degrees of classroom learning ability or preferences for various pedagogical techniques could react differently to this in-class activity.

Gender was included in this study because accounting behavioral researchers have found that there may be a gender bias in accounting classrooms (Buckless, Lipe, and Ravenscroft 1991; Brazelton 1998) while others have not (Ballantine et.al. 2008). By including gender as a variable in this study, the impact of using an in-class activity and/or reflection paper on the educational experience of female and male students can be explored.

Finally, accounting-related work experience was included because accounting researchers have found that students who participate in internships perform significantly better than students without internships in certain accounting courses subsequent to the internship semester (Knechel and Snowball 1987; English and Koeppen 1993; Archambault and Archambault 2005). By including accounting-related work experience as a variable in this study, the impact of these experiences on students' perceptions of the importance of AIS could be explored. The students were placed into one of the three following categories based on the data they self-reported on the survey form:

0 = no accounting-related experience
1 = accounting internship or accounting-related work experience
2 = accounting internship and accounting-related work experience

Post-Treatment Survey

At the beginning of the class period immediately following the in-class project and after the reflection papers had been collected, all students were asked to complete a second survey which is presented in Appendix A as Exhibit 6. This survey repeated the three questions presented in the pre-treatment survey. Students were asked to use the same four-digit ID number they had used in the first survey, thereby allowing their responses to be matched and any change in students' perceptions between the pre- and post- treatment surveys to be analyzed. Pre-treatment and post-treatment surveys that could not be matched were discarded. Only one or two surveys were discarded each semester because a student had not completed both the pre-treatment and post-treatment surveys.

FINDINGS

Demographic Similarity of Groups

The demographic profiles of the treatment and control groups are presented in Table 1. Because this study used three demographic variables, the collinearity of the variables was tested. A Spearman correlation coefficient was calculated for gender/accounting-related work experience while Pearson correlation coefficients were calculated for GPA/work experience and GPA/gender. None of the p values calculated were less than .05 (0.906, 0.467, and 0.900 respectively); therefore, the three demographic variables are not related to one another. Collinearity is not a concern in this study.

TABLE 1
Demographic Profile of Groups

	Control Group (n = 111)	Treatment Group (n = 94)
Gender		
Male	59	49
Female	52	45
Accounting-Related Work Experience		
No experience	71	63
Internship or work experience	31	22
Internship and work experience	9	9
GPA Mean (St. Dev)	3.40 (0.337)	3.47 (0.345)

Analysis indicated that the control and treatment groups' variances for the three demographic variables were the same for each variable. A Student *t*-Test indicated that the GPA variable was the same for both groups ($p = 0.186$). Further analysis using the Mann-Whitney test indicated that accounting-related work experience ($p = 0.737$) and gender ($p = 0.884$) were the

same for both groups. These analyses indicate that although students were not randomly assigned to the two groups, the control and treatment groups are demographically the same.

Findings Related to Hypothesis H_0

To determine if the combination of a textbook reading, an in-class project, and a reflection paper affected students' perceptions of the value of studying AIS, paired *t*-tests were performed. As seen in Table 2, this analysis found that student responses to survey questions "a" and "b" did change significantly in the desired direction while student responses to question "c" did not change significantly. This finding indicates that the pedagogical techniques being studied favorably changed students' perceptions concerning the specifics of the AIS course but did not change student perception of the need for an AIS course. Because student perception of the need for the AIS course was high on the pre-test (5.94), apparently the students gained a greater appreciation of specifics related to AIS through their experiences without affecting their perception of the need for the course itself. Based on these findings, H_0 was rejected.

TABLE 2
Change in Student Responses to Survey Questions
(Control and Treatment Groups Combined: n=205)

	Question a	Question b	Question c
Pre-test mean (Standard deviation)	4.17 (1.223)	3.85 (1.183)	5.94 (1.107)
Post-test mean (Standard deviation)	3.79 (1.326)	3.52 (1.349)	5.98 (1.052)
Amount of change	0.385 (9.2%)	0.337 (8.7%)	0.044 (.7%)
Paired samples *t*-Test *p* value	0.000	0.000	0.535

Findings Related to Hypothesis H_1

To determine if GPA, accounting-related work experience, and gender were related to the change in students' perceptions, several analyses were performed. Pearson correlation coefficients were calculated for GPA and pre-treatment student responses for each of the three survey questions. A Spearman's rho[3] was calculated for accounting-related work experience/pre-treatment student responses and gender/student pre-treatment student responses for each of the three survey questions. As shown in Table 3 Column A, only accounting-related work experience was correlated with the student pre-treatment responses to question "c."

Before the relationships between the three demographic variables and change in student post-treatment responses was analyzed, a Pearson correlation coefficient was calculated for the pre- and post-treatment student answers for each survey question. This analysis found that student answers were highly correlated between the two surveys. In order to remove the impact of

[3] Spearman's rho is a nonparametric technique used with data in the form of ranks. Spearman's rho (sometimes called the Spearman rank-order correlation coefficient or rank correlation coefficient) expresses the nature and strength of correlation between groupings of data while the Pearson correlation coefficient expresses the same correlation using continuous data (Huck, Cormier, and Bounds 1974).

TABLE 3
Correlation of GPA, Accounting-Related Work Experience, and Gender to Changes in Student Responses to Survey Questions (n=205)

	Column A: Correlation of Variable with Pre-Treatment Survey Responses	Column B: Correlation of Variable with Difference between Pre- and Post-Treatment Survey Responses
GPA (Pearson coefficients)		
Correlation with question a	-0.052 (p = 0.463)	0.005 (p = 0.946)
Correlation with question b	0.011 (p = 0.873)	0.000 (p = 0.998)
Correlation with question c	0.031 (p = 0.662)	0.041 (p = 0.563)
Accounting-Related Work Experience (Spearman's rho)		
Correlation with question a	0.011 (p = 0.873)	-0.096 (p = 0.173)
Correlation with question b	-0.033 (p = 0.643)	0.053 (p = 0.451)
Correlation with question c	-0.137 (p = 0.049*)	0.206 (p = 0.003*)
Gender (Spearman's rho)		
Correlation with question a	0.066 (p = 0.348)	0.060 (p = 0.394)
Correlation with question b	0.036 (p = 0.606)	-0.062 (p = 0.376)
Correlation with question c	-0.095 (p = 0.174)	0.041 (p = 0.559)

* Significant at 0.05 level.

this correlation, the difference between each student's pre- and post-treatment responses for each survey question was calculated and used in further analysis.

To analyze the relationship between the three demographic variables and the change in student responses, Pearson correlation coefficients were calculated for GPA/difference in student responses for each of the three survey questions. A Spearman's rho was calculated for (1) accounting-related work experience/difference in student responses and (2) for gender/ difference in student responses for each of the three survey questions. As shown in Table 3 Column B, accounting-related work experience is also correlated with the difference in student responses for question "c."

Table 4 presents the differences in student responses for the three categories of accounting-related work experience. According to this data, the pedagogical combination had no effect on the responses of students with "no work experience." This group of students valued the AIS course in both the pre- and post- tests as indicated by the mean responses of 6.07 and 6.04 respectively. However, the pedagogical technique did affect the responses of students with work experience. The responses of those with internship or work experience increased 2.6 percent from a mean response of 5.72 on the pre-test to 5.86 on the post-test. The responses of those

with both internship and work experience increased 4.0 percent from a mean response of 5.61 to 5.83. Based on these findings, H_1 was rejected.

Findings Related to H_2

To determine if writing a reflection paper has an incremental effect on student perceptions, one-way ANOVAs were calculated for survey questions "a" and "b," using the difference between the student responses as the dependent variable. Because accounting-related work experience is correlated with student responses for question "c," a MANOVA was calculated for

TABLE 4
Accounting-Related Work Experience Descriptive Statistics For Question C

	Pre-Test Mean (St. Dev)	Change	Post-Test Mean (St. Dev)
No experience (n=134)	6.07 (0.975)	-0.022 (-0.4%)	6.04 (0.933)
Internship or work experience (n=53)	5.72 (1.321)	0.151 (2.6%)	5.86 (1.316)
Internship and work experience (n=18)	5.61 (1.243)	0.222 (4.0%)	5.83 (1.043)

this question using the difference between student responses as the dependent variable. By using the difference in the student scores, the correlation between student answers on the pre- and post-treatment surveys was neutralized.

As seen in Table 5, these analyses found that change in student responses for question "a" did differ between the treatment and control groups. Changes in responses, however, did not differ between the two groups for questions "b" and "c." Therefore, according to these analyses, assigning reflection papers does incrementally change student perceptions about the difficulty of collecting and storing data, but it does not affect perceptions about the difficulty of establishing adequate internal controls or the importance of the AIS course itself.

Table 6 presents the differences in student responses to question "a" for the treatment and control groups. According to this data, the reflection paper did change the perceptions of students in the desired direction. Students in the treatment group changed their opinion concerning the ease of collecting and storing data by 14.2 percent while students in the control group changed their opinion by only 5.3 percent. Based on these findings, H_2 was rejected.

CONCLUSIONS AND RECOMMENDATIONS

After using a textbook reading, an in-class activity, and a reflection paper for several semesters, the impact of this pedagogical combination on student perceptions of the importance of learning about AIS was explored through a research project using a pre- and post-treatment design. Analyses found that the pedagogical combination increased student perceptions of the

TABLE 5
Differences for Pre- and Post Test Responses
Between Control and Treatment Groups

PANEL A: ANCOVA Summary

Source of Variation	Sum of Squares	*df*	Mean Square	F	*P*
Survey Question a					
Between groups	6.208	1	6.208	4.463	0.036*
Within groups	282.348	203	1.391		
Survey Question b					
Between groups	0.110	1	0.110	0.067	0.796
Within groups	331.666	203	1.634		

PANEL B: MANCOVA Summary

Survey Question c	*df*	Mean Square	F	*P*
Control/Treatment groups	1	0.817	0.814	0.368
Accounting-Related work experience	1	5.363	5.346	0.022*
Groups and work experience	1	0.080	0.080	0.778
Within groups	201	1.003		

* Significant at 0.05 level.

TABLE 6
Descriptive Statistics for Question A

	Pre-Test Mean (St. Dev)	Change	Post-Test Mean (St. Dev)
Treatment Group (n=94)	4.04 (1.286)	-.574 (-14.2%)	3.47 (1.334)
Control Group (n=111)	4.28 (1.161)	-.225 (- 5.3%)	4.05 (1.264)

difficulty of collecting/storing data and the establishment of internal controls without affecting student perception of the importance of the AIS course itself. Because the students' perception of the need for the AIS course was high on the pre-test (a mean of 5.94 on a 7.00 scale) and remained high on the post-test (5.98), many students apparently gained a greater appreciation of the specifics related to systems through their experiences.

Further analyses of student responses found that GPA and gender are not related to any of the changes in student perceptions. This finding indicates that the combination of a textbook reading, in-class project, and a reflection paper is not biased towards or against one or more of these student groups. The pedagogical technique described in this paper, thus, can successfully

be used with classes that include students with a wide range of GPA levels and gender combinations.

Additional analyses found that accounting-related work experience is related to a positive change in student perceptions about the importance of the AIS course. According to these analyses, the pedagogical combination had no effect on the perceptions of students with "no work experience"; however, it did positively affect the perceptions of students with internship or work experience and students with internship and work experience. Although the percentage increases are small (2.6 percent and 4.0 percent), they are in the desired direction and are a hopeful indicator for accounting educators with non-traditional students in their AIS courses.

Any pedagogical technique that can help students increase their positive perception of the AIS course has value. However, more research needs to be conducted to determine if the findings of this study are applicable to other student populations with larger percentages of non-traditional students than the population used in this study. Further research should also be conducted to determine if changes in the pedagogical technique could increase the acceptance of the first AIS course by non-traditional students.

Finally, analyses found that assigning a reflection paper does incrementally change student perceptions about the difficulty of collecting and storing data in the desired direction, but it does not affect perceptions about the difficulty of establishing adequate internal controls or the importance of the AIS course. As encouraging as this finding is, it might be related to the structure of the reflection paper in this assignment. As seen in Exhibit 4, the assignment asked students to relate the classroom experience to their own experiences or expectations. Students might be more familiar with data collection issues than they are internal controls.

Because of the finding supporting the use of reflection papers in the AIS course, further research needs to be conducted to determine if writing reflection papers is related to changes in student perceptions or student learning that were not explored in this paper. Additionally, researchers should determine if reflection papers are more effective if they are not as structured as the format used in this project. Finally, studies should be designed to determine if writing reflection papers is a pedagogical technique that must be repeated in order to incrementally affect student perceptions and/or learning. It is possible that although writing only one reflection paper has an increased incremental effect, writing several papers could be more effective.

This exploratory study does quantitatively indicate that active learning projects such as "Dexter Buys a Surfboard" and reflection papers are valuable experiences for students. Student comments from the reflection papers indicate that many students are aware of the benefits of such pedagogical experiences. These qualitative and quantitative indications that an investment of class-room time can change student perceptions of the AIS course is a first step in the development of additional pedagogical techniques and studies that will further student understanding of accounting information systems.

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APPENDIX A

Exhibit 1: Student Statements from Reflection Papers (Unedited)

This project showed me how complex and confusing the system can be….Most importantly, the exercise gave me a good overview and understanding on how the accounting system works and how departments check each other.

This shows students how all the different departments that we are studying fit together for the whole company. I think it was very useful and I have taken a lot away already as it relates to me.

I think that the project was good way to refresh our memories from the previous accounting classes. This will help us to pull together all of the information that we have already learned and apply it to more real life situations.

This project opened my eyes to a real life accounting process and what I might be doing in my professional career as an accountant in the future. The project has made me think about each of the individual pieces forming together into one huge picture and that is something that was very helpful to me and my future career.

The project was very helpful to me. It helped me understand that even though a transaction is not made there is still source documents that need to be dispersed so all the branches of a company keep in contact and know what needs to be done. It also clarifies what an information system is.

The project was helpful in a way that I learned new aspects of accounting such as information systems are much more complex and they are not uniform from organization to organization. The project was also slightly confusing because there was a lot going on. For the most part, the project was useful and eye opening to me.

This process seems so basic when talking about it in classes, but actually seeing what needs to be done gives a whole new perspective on what happens in an AIS.

All in all, this project was definitely was a worthwhile introduction to designing an AIS.

Having in class group projects like Surfing USA really makes you thing of how important AIS are and having the insights from groups increases its worth.

As a last thought, I have realized how vulnerable any AIS is to the human factor involved. Any system is only as good as the people involved. Not only must the software be correct but the people using the system have to interpret the incoming data correctly so that it may be entered correctly and become useful information in the resulting reports.

Over the last few years, I have taken for granted that the information that I need to do my job is in the computer in the right place. The project that we participated in impressed on me the complexity and thought that goes into designing an accounting information system from scratch.

This project was terrific in terms of exposure to a new topic. It took what I knew from previous accounting classes and threw in fresh material that was challenging and intriguing at the same time. And, if I'm not mistaken, it was a general summary on what the course will entail.

Exhibit 2[4]: In-Class Activity Transactions

Dexter Buys a Surfboard

Surfing USA Co. sells products related to surfing and scuba diving to the public. During the month of September, the following activities took place.

June 2nd Dexter called Surfing USA Co. to inquire about buying a specific surfboard for $500.

June 4th Two days later, Dexter called Surfing USA Co. and asked the company to order the surfboard for him. Surfing USA told him he needed to send in a $50 deposit before the order could be accepted.

June 7th Dexter mailed the $50 deposit.

June 10th Three days later, Surfing USA Co. received the $50 deposit and a sales order form was filled out.

June 11th Surfing USA Co. ordered the surfboard from Complete Boards Inc, the manufacturer, for $300.

June 20th Surfing USA Co. received the surfboard from Complete Boards Inc.

June 21st Surfing USA Co. received an invoice from Complete Boards Inc. Credit terms were 2/10, n/45.

June 21st Dexter picked up the surfboard and Surfing USA Co. gave Dexter an invoice for the balance due, n/30.

June 30th Surfing USA Co. paid the Complete Boards Inc invoice.

June 30th Surfing USA Co. received payment from Dexter.

Write the journal entries for each of the activities listed above. Surfing USA uses a perpetual inventory system.

[4] This list of activities was adapted from homework problem BYP5-8 in Kimmel, Weygandt, and Kieso (2000, p. 241-242).

Exhibit 3: Surfing USA Organization

One of the most basic concepts related to accounting systems is "separation of duties." This concept focuses on structuring work assignments among employees so that one employee's work activities serve as a check on those of another employee. The responsibilities for the following three functions should be assigned to different employees:

- Authorizing transactions
- Recording transactions
- Maintaining custody of assets

Because of the separation of duties concept, Surfing USA Co. has organized its business processes into the following departments:

Treasury - Controls the inflows and outflows of cash.

Sales - Initiates and completes sales as well as issues invoices to customers.

Accounts Receivable - Records invoices issued by sales and clears invoices when notification is received from Treasury that the invoices were paid by the customers.

Purchasing - Buys items needed by the various functions of Surfing USA Co. including inventory. Authorizes the payment of invoices.

Receiving/Inventory - Accepts inventory and supplies ordered by purchasing and stores the items.

Accounts Payable - Records invoices from other companies that have been authorized by Purchasing. Clears invoices for payment so that discounts can be taken when Treasury prints and mails the checks.

Exhibit 4: Reflection Paper Assignment

ACCOUNT 454 - Section 1 only
Dexter Buys a Surfboard Summary Paper
(5 points)

After our in-class project, students in only Section 1 are to individually write a paper summarizing their reactions to the project. Your paper should completely and thoroughly address the following points:

a. Discuss some idea or concept that you did not know about or that you had not thought about before you participated in the project.

b. Discuss how that idea or concept relates to something you have experienced in a work situation or how it will relate to what you plan to do in your future career as a professional accountant.

c. Do you think this project was helpful to you?

Please note the following guidelines for this paper.

1. Your answers to the questions must be word-processed. Hand-written reports will not be accepted.

2. The document you turn in should be at least one half of a page but no longer than 1 full page. Papers that contain only two or three sentences will receive zero points.

3. Have your name on the first line of the page and the name of the assignment on the second line. Skip a line and then begin your answers. You should **not** include the name of the course, the name of the instructor, or the semester.

4. Your written answers must be no more than 1 page - I will not read any more than 1 page of text. If you can adequately answer the questions in less space, please do so. Additionally, your written answers must have 1" margins on all sides, an 11 or 12 -point standard business font, and be double-spaced.

Exhibit 5: Pre-Test Survey

This semester, I am conducting a research project. The purpose of this project is to find out if certain assignments can help you learn what accounting information systems is all about. Hopefully, through this research, I will be able to develop classroom activities and assignments that will help students better learn the material presented in this course.

To participate in this project, you need to provide the information asked for below and respond to the questions on the back of this paper. During the semester I will ask you to complete another survey in class that is very similar to this one. The project will probably require a total of about ten minutes of your time – the time needed to complete both surveys.

All of the information you provide will be held in strictest confidence. The results of this study will be reported only – because I am not asking for your name, I will not be able to identify the responses of specific individuals. Your participation in this study is voluntary.
Thank you for your help. I do appreciate your assistance.
****

4-Digit ID Number: _____ (Please remember whatever number you select)

1. Have you ever had an internship that required financial accounting concepts and/or principles to be used to perform the duties of the internship? _____ no _____ yes

   a. If yes, how many hours per week were you employed in this position? _____

   b. How long did your internship last? _____

2. Have you ever been employed in a position that required financial accounting concepts and/or principles to be used to perform the duties of the position? _____ no _____ yes

   a. If yes, how many hours per week were you employed in this position? _____

   b. How long did your position last? _____

3. What is your overall GPA? _____ (Transfer students use combined GPA)

4. What is your gender? _____ male _____ female

CONTINUED ON BACK OF PAGE

Please indicate your agreement or disagreement with the following statements.

a. Collecting and storing data about an organization's business activities effectively and efficiently is a relatively easy process.

Strongly Disagree						Strongly Agree
			Uncertain			
1	2	3	4	5	6	7

b. Establishing adequate controls to ensure that data about business activities are recorded and processed accurately is a relatively easy process.

Strongly Disagree						Strongly Agree
			Uncertain			
1	2	3	4	5	6	7

c. It is important that accounting students be required to successfully complete a course in accounting information systems.

Strongly Disagree						Strongly Agree
			Uncertain			
1	2	3	4	5	6	7

THANK YOU FOR YOUR HELP!

Exhibit 6: Post Test Survey

4-Digit ID Number: _____ (Please use the same number that you used on the first survey)

1. Did you prepare answers for the assigned Chapter 2 homework problems?
   _____ no _____ yes

2. Please indicate your agreement or disagreement with the following statements.

   a. Collecting and storing data about an organization's business activities effectively and efficiently is a relatively easy process.

Strongly Disagree						Strongly Agree
			Uncertain			
1	2	3	4	5	6	7

   b. Establishing adequate controls to ensure that data about business activities are recorded and processed accurately is a relatively easy process.

Strongly Disagree						Strongly Agree
			Uncertain			
1	2	3	4	5	6	7

   c. It is important that accounting students be required to successfully complete a course in accounting information systems.

Strongly Disagree						Strongly Agree
			Uncertain			
1	2	3	4	5	6	7