

Accounting Information Systems course: perceptions of accounting and non-accounting students

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Abstract

Purpose – The purpose of this paper is to explore how the delivery of an accounting information system (AIS) course affects the perceptions of accounting and non-accounting students, and whether these differences are important enough to suggest the separate the delivery of this course.

Design/methodology/approach – A questionnaire was distributed during the last teaching weeks of the AIS course in a Cypriot University. A comparative analysis between the two study groups, i.e. accounting and non-accounting students, followed.

Findings – The findings suggest that the successful delivery of the course reinforces the positive perceptions of the accounting group, and increases the interests and the positive perceptions of the non-accountants.

Originality/value – Following the development of the enterprise resource planning and the hybridization of the accountants' role, non-accountants are increasingly engaged in practices traditionally performed by financial or management accountants. That market development may motivate business schools to offer AIS courses to non-accounting students. This study addresses this unexplored topic.

Keywords Accounting education, Accounting Information Systems, Accounting students, Non-accounting students

Paper type Research paper

Introduction

The first course in accounting in business and non-business schools has attracted a lot of research. It is widely acknowledged that the way a student experiences such a course is vital for the choice of an accounting or non-accounting major, as well as for future career orientation (Geiger and Ogilby, 2000; Pincus, 1997; Vangermeersch, 1997). An accounting information system (AIS) course can provide virtual “real life” experiences so as to assist student learning, as well as to provide skills appreciated by the job market (Committee on the Future Structure, Content and Scope of Accounting Education (The Bedford Committee), 1986; Accounting Education Change Commission, 1996; Albrecht *et al.*, 1994; Kearns, 2014). Student learning is facilitated by providing opportunities to experience concepts in the context of real world situations. AIS is considered critical to accounting work and education but there is relatively little research into AIS educational issues, and even less focusing on the students' perspective of the AIS course (Apostolou *et al.*, 2014).

AIS learning is also becoming increasingly important for non-accounting students. While, students may choose a non-accounting major based on their perceptions of their first accounting course, practice developments on organizational roles suggest that accounting knowledge may be vital for their future career. The hybridization of accounting practice phenomenon entails both that accountants are increasingly performing non-accounting



tasks and functions, and that non-accountants are required to do tasks traditionally associated with the positions of the financial or management accountant (Berry *et al.*, 2009; Seal and Herbert, 2011). Accounting and non-accounting roles become increasingly subject to hybridization in enterprise resource planning (ERP) environments integrating all organizational information flows. In this respect, the expansion and intermixing of roles gain in importance (Caglio, 2003; Jack and Kholeif, 2008).

The above practice developments may motivate non-accounting business studies to implement AIS courses as part of their curriculum. However, to the best of the authors' knowledge, there is not published research on this topic, as also suggested by existing wide-ranging reviews in the broad field of accounting education (Apostolou *et al.*, 2013, 2015), or in AIS education (Apostolou *et al.*, 2014). This paper contributes to that direction.

The study was conducted in a private university in Cyprus. The university acknowledges the benefits of implementing real world experiences, such as practicum and internships, in its majors curricula. For this reason, the accounting department of the university decided to offer such experiences by providing access to real accounting software to the students registered to the AIS course. The course is compulsory for accounting students, but elective for non-accounting ones. However, because the elective courses choices of non-accounting students are limited, many such students enlist the course.

It was expected that students studying for an accounting major would hold more positive perceptions toward the course, in comparison to non-accounting students. Perceptions influence the way individuals act. Through formal education an individual may develop certain attitudes toward accounting. These attitudes will predispose, often unconsciously their choices as a student in regards to the courses and the major to choose. Moreover, these attitudes host the individuals well beyond their university years, by providing a dispositional frame of reference when they engage with accounting information and practice (Feeney and Pierce, 2016; Malsch *et al.*, 2011; Makrygiannakis and Jack, 2016; Moore and McPhail, 2016). The purpose of this study is to explore how the delivery of the course affects the perceptions of accounting and, especially, non-accounting students, and whether these differences are important enough to suggest delivery of this course separately to those groups of students.

The next section provides an overview of the background literature, and a description of the AIS course. Next, the methodology is presented, followed by the results. The fourth and fifth sections provide the discussion of findings and conclusions, respectively.

Literature review

This section provides a review of previous studies related to introductory accounting and AIS courses. The literature insists in making accounting education more attractive to students in order to encourage and motivate them at the introductory level. The introductory accounting course is considered crucial for the choice by the students of an accounting or non-accounting major (Geiger and Ogilby, 2000), and can affect students' perceptions of accounting, as a discipline, either positively or negatively (Manganaris and Spathis, 2012). Although tutors are encouraged to motivate students to become accounting majors (Cook and Hazelwood, 2002), the first course often does not assist in that direction: it is not considered as popular among business (non-accounting) majors, and does not motivate students to seek an accounting career (Etter *et al.*, 2000). It should be noted that there has been a declining trend of accounting degree graduates from 1994-1995 to 1999-2000 (Albrecht and Sack, 2000), while currently the academic institutions produce less accounting graduates that the markets need (Apostolou *et al.*, 2015). However, there is no research on whether the AIS course can motivate students to choose an accounting major.

Other studies (Diller-Haas, 2004; Huefner, 2002; Malgwi, 2004; Pincus, 1997; Springer and Borthick, 2004) investigated the importance of the introductory course in accounting and

also recommended new approaches, such as learning how to learn, providing a broader general business education, and integrating related courses and technology. Unlike the studies mentioned above, in Cyprus there is an optimistic view of accounting education. In the past four years, there was an increase of enrollments in accounting education.

To help students understand the basic concepts of accounting, an AIS course was introduced. The course is delivered in an active participation/active learning environment. Active participation helps in improving learning performance because students, by participating in the process, use more effort to understand the learning environment (Thompson, 1997). Active learning can be defined as involving students in doing things and thinking about the things they are doing (Bonwell and Eison, 1991). A number of studies appear in the accounting literature on the topic of active learning. For example, Cook and Hazelwood (2002) developed a game, similar to those seen on television, to create an enjoyable environment for students to learn the more technical aspects of accounting. Other studies report the use of technology in accounting courses, such as generalized audit software (Gelinis *et al.*, 2001; Nieschwietz *et al.*, 2002), but few studies have examined the potential benefits of in-class technology use, with the exception of studies of multimedia presentations (Rose, 2001). Normand (2011) reports a specific approach of active learning for an AIS course combining textbook reading, in-class activity, and a reflection paper. Normand measures change in perceptions through a pre-course/post-course design. The findings suggest that this approach adds to the students' understanding of the specificities of the course, but not to how important they perceive the course to be.

As discussed in the "Introduction", changes in the working environments increasingly demand by non-accountants to perform accounting tasks. Following this, the university offered the course to students majoring both in accounting and in other business disciplines. However, as the literature suggests, these two groups of students hold different perceptions and interests with regard to the accounting courses, with the non-accounting students being rather negative toward taking a course in accounting (Malgwi, 2006; Manganaris and Spathis, 2012; Tan and Laswad, 2006). The study investigates to what extent the delivery of the AIS affects the attitudes of the two groups, and whether these different attitudes suggest the delivery of the course separately to accounting and non-accounting students.

The research questions of the study are as follows:

- RQ1. Do accounting majors' perceptions of the accounting course significantly differ from those of non-accounting majors?
- RQ2. What was the interest level of students prior to taking the AIS1?
- RQ3. Have the students' interest levels changed significantly after taking the AIS1?
- RQ4. How important do students see AIS as part of a business degree?
- RQ5. How do students compare the workload of the AIS1 to other courses they have enrolled in?
- RQ6. What is students' confidence level in taking the AIS1 examinations compared to other courses that they are enrolled in during the same semester?
- RQ7. What do students like most in the AIS1?
- RQ8. What do students like least in the AIS1?

The course is offered in the second year of studies. Face-to-face teaching takes place for three hours weekly, throughout a 12-week teaching period. Prior to undertaking the course both groups had experience of two accounting courses. Moreover, the accountants had undertaken one computer-related course, while the non-accountants two or more. The lecture theater is equipped with personal computers and has a capacity of 24 people.

The lecturers use a projector to illustrate how to use the software in order to perform accounting tasks, and the students have the opportunity to follow the instructions in the PCs they use. Moreover, the university provides registered access to the software for each student, in order to use it for home exercises and practice. The final mark on the course is dependent on a mid-term and a final exam.

Methodology

The first stage was to construct a questionnaire with open and closed questions in order to investigate the students' perceptions. The second stage involved the delivery of the questionnaire to all business students pursuing an undergraduate degree with the university. The students filled the questionnaire during the last week of teaching, which is after the mid-term exam. The sample consisted of undergraduate business students studying at the biggest private university of Cyprus during the academic year 2012-2013. The population of the participants was 175 registered students at the time the survey was conducted. For the purpose of this study, accounting majors include those majoring in accounting, and non-accounting majors are those majoring in other business disciplines (i.e. finance, economics, marketing, human resource, oil and gas, and management). The population consisted of all six course sections. Additionally, there were two different instructors who taught the course (AIS1). Out of the 175 students who received the questionnaire, 158 responded by returning the completed questionnaire, yielding a response rate of about 90 percent.

Findings

The sample population presents the composition of the participants by gender which is comprised of 60 percent ($n = 95$) male and 40 percent ($n = 63$) female. Table I shows the breakdown of the six-degree concentrations, with their corresponding students' composition. Table I also is indicative of which majors are considered the most and least popular. Accounting ($n = 81$) and management ($n = 29$) were considered the most popular. Marketing ($n = 9$) and human resources ($n = 4$) were considered the least popular degree concentrations among students at the time of study.

Interest levels

The second and third research objectives (*RQ2* and *RQ3*) are about students' interest levels prior and after taking the AIS1. Table II shows the pre-course interest level across majors.

It is obvious that the accounting students were much more interested in accounting than the non-accounting students before taking the course (AIS1). With regards to accounting students, 94 percent were interested and very interested. This level of interest among male and female students was almost identical. On the other hand, non-accounting students were mostly neutral (44 percent) while 19 percent of them were uninterested and very uninterested.

	Male		Female	
	<i>n</i>	%	<i>n</i>	%
Accounting	38	40	43	68
Management	22	23	7	11
Oil and gas	18	19	6	10
Finance and economics	8	9	3	5
Marketing	6	6	3	5
Human resources	3	3	1	1
Total	95	100	63	100

Table I.
Classification by
degree major

Students' lack of interest is not significantly different by gender either for male and female students, respectively.

RQ3 requires respondents to indicate how their interest level changed (positively, negatively, or unchanged) after taking the AIS1. In analyzing the change in interest level, the three answers were coded as follows: changed positively, changed negatively, and unchanged.

Table III indicates that there is a substantial change in the level of interest after taking the AIS. The interest level of many students ($n = 113$) changed positively. In total, 5 percent ($n = 8$) of all students changed negatively, while 23 percent ($n = 37$) remained unchanged. An interesting finding comes when comparing the two groups prior and after taking the course. In total, 94 percent of accountants were interested or very interested to undertake the course and their interests were reinforced (94 percent) after undertaking it. In comparison, only 37 percent of the non-accountants held similar interests before the course, but due to the delivery of the course half of the population (51 percent) increased their interest levels.

The change in interest level of male students after taking the AIS is not significantly different from the change in interest level of female students.

Importance of the AIS1 by major

RQ4 asks students to indicate how important they believe the AIS1 is as a course in the business core. The results are shown in Table IV.

Table II.
Pre-course
interest level

	Accounting majors		Non-accounting majors	
	<i>n</i>	%	<i>n</i>	%
Very interested	58	72	11	14
Interested	18	22	18	23
Neutral	5	6	34	44
Uninterested	–	–	12	16
Very uninterested	–	–	2	3
Total	81	100	77	100

Table III.
Change in
interest level

	Accounting majors		Non-accounting majors		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Changed positively	74	91	39	51	113	72
Changed negatively	–	–	8	10	8	5
Unchanged	7	9	30	39	37	23
Total	81	100	77	100	158	100

Table IV.
Importance of the
AIS1 by major

	Accounting majors		Non-accounting majors		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Very important	76	94	30	39	106	67
Important	5	6	16	21	21	13
Neutral	–	–	14	18	14	9
Unimportant	–	–	10	13	10	6
Very important	–	–	7	9	7	5
Total	81	100	77	100	158	100

Table IV shows that the majority of students ($n = 127$, 80 percent) see the AIS1 as either important or very important course in the business core. Almost all accounting students consider the AIS as a very important course in the business core, as compared to 67 percent of non-accounting students.

Workload and confidence level

The determination of the workload and confidence in the AIS1, as compared to other courses, is useful in explaining the level of difficulty embedded in the AIS1 course. Typical workload in AIS1 consists of learning to use the main software manual text, studying tutors' handouts, and sitting in two exams. *RQ5* asks respondents to compare the workload in the AIS1 relative to other courses the students are enrolled in the same semester.

As shown in Table V, the AIS1 workload is thought to be either much or too much work by 57 percent of respondents ($n = 90$) relative to other courses. A lower number ($n = 51$, 32 percent) feel it is about the same. Only a small percentage ($n = 17$, 11 percent) of students thought the workload is less or much less. The differences among the groups are small, with 61 percent of the accountants reporting too much or much workload, compared to the 54 percent of non-accounting majors feeling the same.

The second question (*RQ6*) relates to the confidence level of students in taking the AIS1 relative to other courses.

Table VI shows that there is a significant difference between the confidence level (in taking AIS1 examinations) of accounting students and non-accounting students. In particular, the majority of accounting students ($n = 75$, 93 percent) feel confident/very confident in taking AIS1 examinations compared to other courses enrolled. This may be an indication of their accounting background and their interest to enroll in the accounting degree. While a 19 percent ($n = 25$) of non-accounting students have low/very low confidence level, most of the non-accounting students ($n = 28$, 36 percent) have the same level of confidence with the other courses enrolled. However, a 31 percent ($n = 24$) had very high/high confidence in comparison to other course in their curriculum.

	Accounting majors		Non-accounting majors		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Too much	22	27	28	36	50	32
Much	26	32	14	18	40	25
About the same	25	31	26	34	51	32
Less	8	10	9	12	17	11
Much less	–	–	–	–	–	–
Total	81	100	77	100	158	100

Table V.
Workload by major

	Accounting majors		Non-accounting majors		Total	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Very high	30	37	9	12	39	25
High	45	56	15	19	60	38
About the same	5	6	28	36	33	21
Low	1	1	19	25	20	13
Very low	–	–	6	8	6	4
Total	81	100	77	100	158	100

Table VI.
Confidence level

Like most and least about AIS1 (satisfaction level)

Students were given 12 variables to express themselves about what they like and dislike most in the AIS1. Two questions (RQ7 and RQ8) were included in the questionnaire, and the responses were merged in Table VII.

In regards to the satisfaction level there were no significant differences among the groups. Table VII shows that the most liked items among all students is the lecturers' understanding in terms of learning and course delivery. Students find the AIS1 to be interesting. These are followed by the practicality, syllabus, and class discussion. The most disliked item is the number of students in class. It is important to note that a significant number of students seem to appreciate the way the course is delivered. The majority of students (84 percent) were either very satisfied or satisfied by the fact that the lecturers relate notes/manual and other material to reality.

Discussion

The main aim of this study was to investigate possible differences in perceptions, among accounting and non-accounting students, of a specific accounting course. The objective of this study was to explore how the delivery of the course affected the perceptions of these groups, and whether these differences are important enough to suggest delivering the course separately to accounting and non-accounting students.

A limitation of this study is that it was conducted in *ex post* basis, i.e. there was an effort to address changes in students' perceptions retrospectively. Future research may try to study student perceptions during the first weeks and compare it with last week perceptions, as this would provide more detailed accounts of change. Another limitation is that the change of perceptions of the accounting students are probably reinforced by the other accounting courses they attend in parallel to the AIS course. However, the fact that the non-accounting students do not attend other accounting courses makes more promising the impact of the AIS course. Given those limitations, the study provides interesting results. Moreover, it adds to the very limited empirical data on the students perceptions in regards to the AIS course, while being innovative in exploring the perceptions of non-accounting groups.

This study shows significant differences in opinions between accounting and non-accounting students relating to some variables. For example, the accounting students were much more interested in accounting information than the non-accounting students before taking the course (AIS). Students' lack of interest is not significantly different across genders. Additionally, almost all accounting students considered the AIS1 as a very important course in the business core, as compared to almost half of non-accounting students. Kearns (2010) suggests a strong relationship between the

	Very satisfied		Satisfied		Neutral		Dissatisfied		Very dissatisfied	
	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%	<i>n</i>	%
Lecturer	130	82	19	12	8	5	1	1	–	–
Notes/Manual	74	47	43	27	19	12	13	8	9	6
Practicality	63	40	32	20	30	19	16	10	17	11
Class discussion	58	37	35	22	22	14	22	14	21	13
Syllabus	60	38	64	41	32	20	2	1	–	–
Teamwork	44	28	47	30	25	16	42	26	–	–
Easy to understand	52	33	79	50	27	17	–	–	–	–
Exams	88	56	55	35	15	9	–	–	–	–
No. of students in class	25	16	16	10	40	25	77	49	–	–
Satisfaction level	102	65	38	24	18	11	–	–	–	–

Table VII.
Satisfaction level

students perception of relevance of the AIS course and knowledge attainment. The knowledge the students attain during the delivery of the course can be expected to increase their confidence for the course exams. The findings of this study support this: responding to the question of the confidence level of students in taking the AIS1 relative to other courses, the majority of accounting students were confident/very confident in taking AIS1 examinations compared to other courses enrolled. This may be an indication of their accounting background and their interest to enroll in the accounting degree. Most of the non-accounting students had the same level of confidence with the other courses enrolled, while a one-third of the non-accounting students had low/very low confidence level.

On the one hand, the findings obviously suggest that most of the unfavorable perceptions come from non-accounting students who would not have taken the course if it was not a necessary elective course for their business core. On the other hand, both accounting and non-accounting majors expressed identical views relating to variables of their satisfaction level. Almost all students were satisfied with the lecturers' understanding in terms of learning and course delivery. These were followed by the practicality, syllabus, and class discussion. Moreover, an important finding is that the positive perceptions of non-accountants were significantly altered after the delivery of the course. Based on the findings on the change in their interest levels, it could be argued that the successful delivery of the course reinforced the positive interests of the accountants. In regards to the non-accountants group, the delivery of the course not only reinforced the positive interests of those that were already positive, but also increased the number of non-accountants that have positive interests by 15 percent. In addition, the confidence levels of the non-accountants group are in comparison to their other courses at the same level (36 percent) or better (31 percent), and 67 percent of them realize the importance of the course in their business degree. Normand's (2011) findings suggest that the interest levels do not change significantly through an active learning approach. However, in her study the students' interest on the AIS course was already high before taking the course. This is reflected in this paper by the accounting group, which already held positive interests toward the course. However, based on the findings from the non-accounting group, this study suggests that active learning can increase the levels of interest of students that have lower interest for an AIS course.

The role of the lecturers to these outcomes should not be underestimated. There is a large percentage of students' satisfaction derived from the lecturers, which makes difficult to isolate the impact of the AIS course from the performance of the lecturers. Therefore, the results of the study suggest that the successful implementation of an AIS course reinforces the positive perceptions of accounting students, and increases the number of non-accountants with positive orientation toward accounting courses. These results are of interest to academic faculty wishing to motivate students to undertake an accounting major. Apostolou *et al.* (2015) note a shortage in accounting graduates and call for research on how to attract talented students to the profession. Perhaps the active learning/active participation approach to the delivery of an AIS course makes the abstract accounting concepts more concrete and practical, and thus offers a learning approach suitable for non-accountants.

However, the results do not offer any clear suggestions on whether it is more appropriate to offer the course separately to accounting and non-accounting students. Offering the course jointly to accountants and non-accountants triggered a positive change to the interests to a large number of non-accountants, but the non-accountants that remained unaffected were also a large group. Thus, findings suggest a split in the non-accounting group; further research is needed to identify why the course successfully influenced a large number of non-accounting students, while failing to engage the rest.

Conclusions

Developments in the real-life working environments lead toward the hybridization of the role of accountants, whereas accountants are increasingly called to perform operational tasks, and non-accountants to engage in accounting practices. AIS is now part of a single informational system, the ERP, which is operated from both accountants and non-accountants. Realizing the change, a private university in Cyprus offered an AIS course to non-accounting students. The results of this study suggest that the successful delivery of an AIS course can change the interest levels of non-accountants.

The findings of this study may motivate business schools to consider offering AIS courses to non-accounting majors, since it suggests that many non-accounting students after having studied for an AIS course develop positive attitudes toward accounting. As the literature suggests, this has implications not only for their attitudes toward other accounting courses but also for their hybrid accounting roles they may need to perform in their future working environment.

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