WebCT Usage and Its Impact in the Accounting Classroom: An Empirical Study for the Effect of Language Background

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ABSTRACT

The use of online learning environments such as WebCT for *e-learning* in universities is now commonplace. Though there has been considerable research interest in educational technology for many years, there is limited research on how on-campus students engage in e-learning and whether usage varies among different groups of students. This paper reports a survey-based study of WebCT usage by undergraduate accounting students at a large Australian university. It was found that students with English as a second language (ESL) made significantly greater use of WebCT in their studies than those without ESL. In addition, it was found that students who use WebCT frequently had less confidence in their own ability with computers but possessed a more positive attitude toward computer use.

Keywords: *Accounting Education, WebCT, First Language, Attitude, Perception, Information Technology, E- Learning.*

INTRODUCTION

Technological support for teaching and learning takes many forms, including computer-assisted instruction by drill and practice, intelligent tutoring systems, multimedia simulations and electronic games. With the development and widespread use of the Internet and the World Wide Web since 1995, the use of one form of educational technology has become increasingly common in universities. This form is online learning, or *e-learning*. Although e-learning was

perhaps originally envisaged primarily as a means of providing educational materials to distance and off-campus students, it is now also used extensively within universities as supplementary support for on-campus students.

Software suppliers have developed sophisticated online learning environments to underpin e-learning. Examples of these systems are TopClass[1)], WebCT[2)] and Blackboard[3)]. Typical functions provided in these learning environments include: publication of HTML versions of course textual material, administrative details, lecture notes, on-line quizzes, self-tests, surveys, bulletin boards, internal e-mail, chat facilities, student progress and social networking. Although adding to their workload, these learning environments facilitate the provision of teaching materials on the Web for students with relative ease.

Interest in the effectiveness of educational technology has been a research topic for many years (e.g. Laurillard, 1993), particularly in distance education. However, research into the effectiveness and appropriate use of online learning environments with on-campus students is less common. The research into the use of on-campus e-learning with accounting students is particularly sparse. An indicator of this situation was the study by Bryant and Hunton (2000) that reviewed and provided advice for accounting educators on the use of educational technology. The study omitted online learning environments as a category of interest.

Given that many educators now spend time providing materials for students in e-learning environments, it is appropriate to ask how these materials are valued and used by students and whether some students gain more value from their use than others. It is mandatory in some universities for lecturers to publish some aspects of their course online; in others it is at the discretion of the staff member. Where staff have a choice, it would be of benefit for them to have some evidence

1) http://www.wbtsystems.com/
2) http://www.webct.com/
3) http://www.blackboard/

of students' relative needs for online course material.

Thus, the aim of this study is:

> *to investigate whether usage of online learning materials (in WebCT) for accounting courses varies with a student's language background, attitudes and personal characteristics*.

The motivation for the paper arose from the authors' experience teaching both accounting and information technology students in the tertiary sector in Australia and Japan and their exposure to online learning environments. In addition, a pilot study in 2003 with 72 undergraduate accounting students alerted the authors to differences among students from different countries in their use of online materials. Many accounting classes in Australia have a proportion of overseas students greater than 30 percent. Thus, it is important to understand how these students, from many different cultures, perceive and utilize web based learning resources. The expected outcomes of better understanding of student differences and needs is the provision of more appropriate learning materials that better match student needs.

The current study surveyed 170 students in a first-year accounting course and investigated the relationship between students' first-language, attitudinal and demographic variables and the degree of use of online WebCT study materials.

The next section of the paper reviews relevant prior studies in this area. This is followed by our hypotheses that we used for testing. The paper then concludes with details of our research methodology; results of statistical analysis and conclusions drawn.

LITERATURE REVIEW

The reason for integrating computer-aided learning (CAL) into an accounting

course is to enhance the quality of learning, particularly in terms of accounting education (Boyce, 1999). CAL is believed to enhance student outcomes in accounting and also enhance students' general education skills. Computer-aided tools used to assist learning and teaching of accounting is not new. A number of computer-based learning (CBL) forms exist and there are many studies researching their use in accounting education. For example, Evans (1998) investigated the effect of the use of custom-made videocassettes in accounting. Parker and Cunningham (1998) and Lane and Porch (2002) reported on the usefulness of computer-aided learning software packages.

WebCT is an example of a CBL form that is referred to as an online learning environment, which supports e-learning. These online environments have become more popular since graphic user interface browsers for the Internet were developed in 1994 and led to wide-scale use of what became known as the World Wide Web (WWW). Web CT can be used on a university intranet to provide a number of tools for the support and management of student learning. Bryant and Hunton (2000), who review the current state of use of educational technology in accounting education, classify educational technology studies into nine categories. Among them, one category of studies relates to the usefulness of websites, the Intranet and the WWW, and is given the label "hypermedia studies". Their discussion of studies in this category, however, does not include discussion of online learning environments, such as WebCT.

There have been some studies into the effectiveness of online educational materials and aids. Online course materials can provide students with network access to journals and other online data sources, or support textbook studies (Debreceny *et al*., 1999/2000). Lont (1999) focused on the integration of computer technology such as intranets with accounting education. Student feedback in this study was favorable with regards to the usefulness of the WWW and the accessibility of the intranet. Although not accounting specific, Gilliver *et al*.

(1998) also found that an experimental group of students with Internet access to detailed lecture notes, tutorials, and other instructional support materials performed better in the final exam than a control group that did not have access to such material.

Besides many descriptive reports, somewhat fewer empirical studies have concerned CBL. Empirical studies have examined contributing factors affecting the frequency and type of computer use (Davis *et al*.,1989; Thompson *et al*., 1991; Schiffman *et al*., 1992; Winter *et al*., 1998). Computer use is measured in terms of frequency of general computer usage within a specific time period. Other empirical studies (for example, Schumacher and Morahan-Martine, 2001) have investigated the influence of a particular type of technology such as the Internet, WWW or e-mail on a person's general computer experience or perceptions.

From an accounting educational perspective, Bhattacharjee and Shaw (2001) empirically explore technological abilities such as Internet use and perceptions toward technology. Their paper concluded that incorporating the computer or the Internet in studies can improve students computing skills and perceptions towards technology. Basile and D'Aquila (2002) conducted empirical studies on course management software in financial accounting. Their study examined differences in student computer use and attitudes towards computer-mediated instructional methods compared with traditional teaching methods. Findings from this study showed that students who used the computer (e.g. for WebCT) on a daily basis had a more positive attitude toward course delivery, regardless of the instructional method.

There appears, however, to be a lack of research focusing on the effects of educational technology in accounting courses that actually investigates individual student differences and attitudes towards this.

Differences among different countries and attitudes to technology use have been found in more general studies. Straub *et al*. (1997) used the Technology

Acceptance Model (TAM) to compare behavior in workplaces in different countries: the United States, Japan and Switzerland. The TAM, which was developed by Davis *et al*. (1989), links users' perceptions of the usefulness and ease-of-use of various technologies with intention to use and system usage. The results of Straub *et al*. (1997) showed that the TAM model explained findings in the United States and Switzerland, but not in Japan.

Straub *et al*. (1997) concluded that the differences in computer use between the countries was due to cultural differences in: (a) uncertainty avoidance, (b) power distance, (c) individualism and (d) assertiveness. Though this study is persuasive, it examines the general workplace across specific countries and the results may not be applicable within a purely accounting educational environment.

Thus, unlike previous qualitative and quantitative studies that investigate more general situations, the focus for our current empirical research is specifically on the tertiary accounting sector – an environment where internal undergraduate students are exposed to e-learning with WebCT.

HYPOTHESES DEVELOPMENT

In developing hypotheses to be investigated, factors that could influence WebCT use were grouped under the headings:

1) Language background;

2) Student attitudes and perceptions;

3) Other interpersonal differences.

Each of these categories with their resultant hypotheses is discussed below.

1) Language background

As mentioned previously, prior research has investigated the effects on web usage in general and educational situations from a cross- country perspective

(Straub *et al*., 1997; Jiang *et al*.,1999). Straub *et al*. (1997) for example, studied different populations within different countries. Our research on the other hand focuses on the international diversity within a single population in an Australian university.

The results of our pilot study indicated that overseas students preferred a computer-aided learning environment when compared to those students who learned their computer skills in Australia. This pilot study surveyed linkages between students' preferences for a computer environment and their demographic background, including their place of learning computer skills and their job experiences – but not perceptions or attitudes. The pilot study also suggested that there was a difference between students who had English as a First Language (EFL) and students who had English as a Second Language (ESL) in regard to their usage of WebCT.

There are several reasons for using "first language" as an indicator of differences among domestic and international student populations rather than the country of origin itself. One's first language is likely to indicate the degree of proficiency in that language. Language background is of major importance in acquiring information from websites. The ability to read English is essential for users at the Australian universities where websites (including WebCT) are available only in English.

Further, language appears to be strongly related to computer education. Assuming a student has good English literacy skills, then access to the virtual world could be considered as borderless. This means that students with such skills could accumulate computer experience even from a very early educational stage. Difficulty in reading and disseminating information in English would trap ESL student in a limited sphere where only their native language is of use. This restriction would prevent such students from accessing the "world" via the web. As the result of the above, we developed the following hypothesis:

H 1: Language background has a significant effect on the frequency of student use of WebCT.

2) Attitudes and perceptions

Many studies continue to report significant relationships between perceptions and computer usage. For example positive perceptions of one's technological ability are seen to be essential to the successful utilization of computers (Igabaria *et al*.,1990; Mills, 1997). Contrary to this, negative perceptions may prevent an individual from gaining access to or effectively using computers in the workplace (Walters and Necessary, 1996).

The question arises, however, as to what are these "perceptions." Bhattacharjee and Shaw (2001) in examining perceptions, defined self-confidence as a perception, based on previous studies of Stone *et al*. (1996), Davis *et al*. (1989) and Igabaria *et al*. (1990). Although Davis *et al*. (1989) and Stone *et al*. (1996) distinguished between perception and attitude (emphasizing that perception is the predictor or driver of attitude), much of the accounting literature combines both concepts in order to simplify research models. As Mills (1997) pointed out, perception overlaps attitude and is defined as the anxiety, confidence and preferences that one may have. In relation to accounting education, the studies of Friedlan (1995), Marcheggiani *et al*. (1999), Basile and D'Aquila (2002) did not distinguish between the concepts of perception and attitude.

In terms of what affects student computer usage, we have concentrated on four perceptual factors:

(1) perception of computer technology
(2) perception of accounting,
(3) attitude towards computer technology and
(4) attitude towards computer usage in an accounting course.

Stone *et al*. (1996), defined perception as confidence and anxiety. We applied their method, which distinguished between one's perception of computers and perceptions of accounting in general. Preference for computer-aided tools is examined as an attitude toward computer use within the selected accounting course. A student's opinion of future computer technology is investigated individually because this factor also seems to be affected by the student's country/ language background factors.

As discussed previously, the frequency of computer usage becomes the driver of perceived abilities. For example, we can assume that students who use English as a first language have no hesitation in accessing the borderless virtual world, so that EFL students may have stronger confidence in and attitudes toward computer use compared to ESL students. On the other hand, according to Necessary and Parish (1996), overseas students tend to use personal computers and the Internet more frequently than English students. If this is correct, then ESL students may have stronger perceptions and attitudes towards computers. The results of Necessary and Parish (1996) indicate that increased frequency of weekly computer use are related to reduced levels of computer-related anxiety, greater computer knowledge and therefore enhanced computer confidence and satisfaction. The above considerations give rise to the following hypotheses:

H 2: Students' confidence with computer technology in an introductory accounting course has a significant effect on their frequency of use of WebCT.

H 3: Students' confidence in accounting has a significant effect on their frequency of use of WebCT..

H 4: Students' attitude toward the importance of computer technology has a significant effect on their frequency of use of WebCT.

H 5: Students' attitude towards an online learning environment in an intro-

ductory accounting course has a significant effect on their frequency of use of WebCT.

3) Other interpersonal differences

Although our study has a focus on language background, we realize that there are other contributing factors that could influence a student's behavior (e.g. frequency of use) toward WebCT. According to previous studies, there is evidence that gender may affect the uptake and frequency of computer usage. Within a general education context Schumacher and Morahan-Martin (2000) concluded that females have less experience and a more negative attitude toward computers compared with males. Similarly, Bhattacharjee and Shaw (2001) investigated linkages between a student's perceptions of technology and gender. They concluded that female students showed greater improvement than did male students in their perceived ability to use a computer.

It terms of the age of students, previous research supports the notion that age has a significant negative impact on performance (Bartlett *et al*., 1993; Koh and Koh, 1999; Lane and Porch, 2002). Although we could not find a study that examined the relationship between age and computer usage, we regard this as potentially an important factor. Older students are often observed to be more dedicated and motivated students, compared with school leavers, and are expected to use more fully all the resources available to them, including online materials.

It is also thought that a student's educational background with computers might be related to use of online resources. This aspect is particularly important. For example, if we compare the time when students started acquiring computer skills we may find that by starting earlier students gain an advantage in acquiring higher perceived abilities, because it might be easy for youngsters to acquire such new skills. Similarly, developing computer skills earlier might encourage a

student's motivation to use a computer, because they have had a comparatively longer time period to dispose of their awkward skills. Schumacher and Morahan-Martin (2000) also examined the link between the Internet and computer experiences, skills and attitudes. Their results showed a significant relationship between these factors. Thus, we assume that more experience with computers over a longer period will lead to greater use of online resources. Accordingly, we also developed the following hypotheses;

H 6: Gender has a significant effect on the frequency of student use of WebCT. Female students will use WebCT less than male students.

H 7: Age will have a significant effect on the frequency of student use of WebCT. Older students will use WebCT more.

H 8: Greater prior experience with computer technology will lead to greater use of WebCT

RESEARCH METHOD

Data collection

A prominent aspect of our investigation is the diversity of student nationalities and backgrounds. Undergraduates in our study came from over 40 different countries. Table 1 shows the diversity of nationalities in the sample. Backgrounds were established after surveying their different schooling and career experiences. It was considered that these factors were sufficiently variable to examine the elements affecting computer assisted technology and learning.

The data used in our model was collected from a questionnaire[4)] administered to 176 first year undergraduate students at an Australian university. The effective sample was 170 students. Table 2 shows demographic details of our samples.

4) Available from authors on request

The survey was conducted during a week 10 lecture in a semester course titled "Accounting Processes and Systems" (BUSN 1002). The course covers introductory accounting concepts and theory, and is studied by many students from a variety of disciplines. The data collection technique was anonymous with respondents not required to record their name or ID number. The surveys were admin-

Table 1: Diversity of nationalities shown by different languages

EFL Students (n=89)		ESL Students (n=81)	
Australian	73	Mandarin (Chinese)	45
Singaporean	7	Cantonese	15
Malaysian	6	Malay	3
New Zealander	1	Greek	2
Sri Lankan	1	Laotian	2
Pakistani	1	Vietnamese	2
		Bengali	2
		Bisaya (Philippines)	1
		Bulgarian	1
		Indonesian	1
		Italian	1
		Macedonian	1
		Spanish	1
		Sri Lankan	1
		Tamil	1
		Thai	1
		Turkish	1

Table 2: Demographic Data

	EFL Students (*n*=89)		ESL Students (*n*=81)		Total	
Gender						
Male	52	58.4%	38	46.9%	90	52.9%
Female	37	41.6%	43	53.1%	80	47.1%
Age						
17–21	71	79.8%	71	87.7%	142	83.5%
22–25	14	15.7%	10	12.3%	24	14.1%
over 25	4	4.5%	0	0	4	2.4%

istered by researchers who were not responsible for the course delivery. The respondents were given class time to complete their questionnaire with forms collected upon completion.

The questionnaire comprised seven sections. The survey asked for general information on student personal details, their use of computer technology; use of computer technology in accounting; perceptions towards accounting and computer technology; attitudes towards general computer technology; attitudes towards the use of computer technology in their accounting class and attitudes towards accounting as a profession. Apart from section 1 (general information), a five-point Likert scale was used for each item.

Dependent variable

The dependent variable in the study is the student's behaviour in using WebCT and the course website for BUSN 1002. Course material was put online progressively throughout the semester. The questionnaire (administered toward the end of the unit) focussed on the three major areas of the WebCT usage. These were:

1. Obtaining course/administration details and notices;
2. Downloading lecture notes; and
3. Downloading workshop solutions.

The mean of the items in these three categories was used as the dependent variable (WEBUSE).

Independent valuable:

The main independent variable was the student's first language (LANG). Other contributing factors which are likely to influence the students' use of WebCT were also included. These variables were confidence in using computer technology in the accounting course (CONFPC), confidence toward accounting (CONFAC), attitude towards computer technology (ATTPC), attitude towards

the online learning environment in the accounting course (ATTAC), gender (GEN), age (AGE), and experience using a computer (EXP).

Statistical Analysis:

The regression model used to investigate students' computer usage was:

$$WEBUSE = \alpha + \beta_1 LANG + \beta_2 CONFPC + \beta_3 CONFAC + \beta_4 ATTPC + \beta_5 ATTAC + \beta_6 GEN + \beta_7 AGE + \beta_8 EXP + e_i$$

Where -

WEBUSE = Frequency of WebCT usage in the accounting course, calculated as the mean of the items for:

Obtain course/admin. details and notice on a 5 point scale where 1= None/rarely and 5=Very Frequently with 0=Don't Know

Downloading lecture notes on a 5 point scale where 1= None/rarely and 5=Very Frequently with 0=Don't Know

Downloading workshop solutions on a 5 point scale where 1= None/rarely and 5=Very Frequently with 0=Don't Know

LANG = 0 for English (EFL) and 1 for other languages (ESL)

CONFPC = Confidence in PC usage, calculated as the mean of the items for:

Confidence of using computer on a 5 point scale where 1 = Strongly Disagree and 5=Strongly Agree with 0=Don't Know

Confidence in Searching the Internet on a 5 point scale where 1 = Strongly Disagree and 5=Strongly Agree with 0=Don't Know

Anxious about computer technology on a 5 point scale where 1 = Strongly Agree and 5=Strongly Disagree with 0=Don't Know

CONFAC = Confidence in Accounting, calculated as the mean of the items for:

Confidence of accounting on a 5 point scale where 1= Strongly Disagree and 5=Strongly Agree with 0=Don't Know

Anxious about accounting on a 5 point scale where 1 = Strongly Agree and 5=Strongly Disagree with 0 = Don't Know

ATTPC = Attitudes to computer use, on a 5 point scale where 1 = Strongly Disagree and 5=Strongly Agree with 0 = Don't Know.

ATTAC = Attitudes toward computer use for accounting course on a 5 point scale where 1 = Strongly Disagree and 5=Strongly Disagree with 0 = Don't Know

GEN = 0 for male and 1 for female

AGE = 0 for 17–21 years old, 1 for 22–25 years old and 2 for over 25 years old

EXP = 1 for After Secondary School, 2 for Secondary School, 3 for Primary School, 4 for Kindergarten/Infant School and 0 for Never Learned before commencing University

RESULTS

Regression Results

Table 3 is a matrix showing the correlations between all variables. If independent variables are highly correlated (i.e. multicollinearity), then the regression

coefficients can become unstable and the significance test and interpretation of the individual variables are small or moderate, with the largest correlations being -0.357 between CONFPC and LANG, and -0.341 between EXP and LANG. These numbers are small enough to indicate that multicollinearity is not of concern.

Table 3: Correlation Matrix (n = 170)

	WEBUSE	LANG	CONFPC	CONFAC	ATTPC	ATTAC	GEN	AGE	EXP
WEBUSE	1								
LANG	0.203**	1							
CONFPC	−0.168*	−0.357**	1						
CONFAC	0.017	−0.283**	0.321**	1					
ATTPC	0.243**	0.004	0.202**	0.168*	1				
ATTAC	0.142	−0.177*	0.203**	0.232**	0.238**	1			
GEN	0.210**	0.115	−0.051	−0.054	0.103	0.048	1		
AGE	0.092	−0.138	0.146	0.091	0.032	0.081	−0.133	1	
EXP	−0.199**	−0.341**	0.273**	0.071	0.021	0.006	−0.242**	−0.19*	1

** indicates that correlation is significant at the 0.01 level (2-tailed).
* indicates that correlation is significant at the 0.05 level (2-tailed).

Table 4 reports the results of the regression analysis. The regression coefficients, beta coefficients, t-statistics and p-value are given for each independent variable. The model shows an F-value of 4.631 (p-value = 0.000). The R square for the model is 0.187.

The results indicate that ATTPC has less than 1% p-value (0.004), LANG and CONFPC have less than 5% p-value (0.043 for LANG and 0.028 for CONFPC). CONFAC, ATTAC GEN, AGE and EXP show their p-values as all non-significant. This indicates that our hypothesis regarding attitudes toward computer technology (H 4) can be rejected at the 99% significance level. The hypotheses that first language and confidence of computer technology in the accounting course (H 1 and H 2) have a significant effect on students' WebCT use can be affirmed at the 95% significant level.

In addition to the above results, the positive coefficients for LANG, CONFAC and ATTPC indicate that the students' use of WebCT is likely to be greater if they have English as a second language and if they possess a positive attitude towards computer technology. On the other hand, the negative coefficient of CONFPC shows that students' confidence in their own computer abilities is negatively related to greater use of WebCT.

Table 4: Regression results for usage of WebCT

$$WEBUSE = \alpha + \beta_1 LANG + \beta_2 CONFPC + \beta_3 CONFAC + \beta_4 ATTPC + \beta_5 ATTAC + \beta_6 GEN + \beta_7 AGE + \beta_8 EXP + \varepsilon_i$$

n = 170
R Square = 0.187
Adjusted R Square =0.147

ANOVA

	Sum of Square	Df	Mean Square	F	p-value
Regression	20.171	8	2.521	4.631	0.000
Residual	87.660	161	0.544		
Total	107.831	169			

	Coefficient	t-statistic	p-value
Intercept	2.579	3.963	0.000
LANG	0.270	2.042	0.043
CONFPC	–0.191	–2.216	0.028
CONFAC	0.055	0.722	0.471
ATTPC	0.234	2.941	0.004
ATTAC	0.114	1.662	0.098
GEN	0.218	1.805	0.073
AGE	0.229	1.680	0.095
EXP	0.059	–0.522	0.602

Comparison of EFL and ESL student groups

Table 5 displays statistical results of comparison between means for the dependent variables and independent variables for students using different languages.

There are significant differences between EFL and ESL students in WebCT usage in their accounting course (WEBUSE), in confidence of computer use in their accounting course (CONFPC), in confidence of accounting (CONFAC), in attitude toward computer use in accounting subject (ATTAC) and the time when they start learning computers (EXP).

Table 5: Results of paired-sample t-test

	EFL (n=89)	ESL (n=81)	t-statistic	p values	Conclusion of t-test
WEBUSE	3.34	3.68	-2.780	0.006	ESL students use WebCT more frequently
CONFPC	4.31	3.77	4.946	0.000	EFL students have a stronger confidence with computers
CONFAC	3.89	3.43	3.831	0.000	EFL students have stronger confidence in accounting
ATTPC	4.31	4.32	-0.055	0.956	No significant difference
ATTAC	3.97	3.65	2.335	0.021	EFL students prefer PC use for accounting courses
GEN	0.42	0.53	-1.503	0.135	No significant difference
AGE	0.25	0.12	1.809	0.072	No significant difference
EXP	4.01	3.62	4.697	0.000	EFL students start learning PC technology earlier

One-tailed t-test is applied for p-value.

CONCLUSION

The results of the regression analysis indicate that language background is a significant determinant of student use of WebCT. Students with English as a second language use WebCT resources more than native English speakers. Non-native English speakers are often more comfortable reading materials in English than they are attending aurally to spoken English. Online materials can allow them to narrow the disadvantage of the language gap in the classroom. The written English on the web site includes not only lecture notes but administrative and

other information and is more reliably gained from this source. It should be noted that both groups of students (EFL) and (ESL) give favorable ratings to WebCT use (above the mid-point on a five point scale).

The conclusion is that accounting educators are justified in expending effort to place materials online, especially where accounting classes have a high proportion of ESL students. With government policy pushing for the recruitment for more overseas students in Australian universities (Weber, 2002) this issue will be of growing importance.

Students' confidence in their own abilities with computer technology was related negatively to their use of online materials. That is, the more confident a student was in his/her computer ability, the less likely he or she was to use WebCT. Although other authors found that perceptions of competence positively influence computer usage (Igabaria *et al*., 1990; Mills, 1997; Walters and Necessary, 1996) our results did not confirm these findings. The more technology-confident students were also the native-English students. An explanation is that the need to acquire written English learning materials by the students who need them most (ESL students) overrides their comparative lack of confidence in their computer abilities.

In contrast, attitude to computers was significantly and positively correlated with use of online resources. The regression analysis cannot tell us the causal direction in this relationship. It is possible that higher use of online materials, presumably because they are seen as valuable, leads to a more favorable attitude towards the use of technology support in an accounting class.

Confidence in accounting abilities had no effect on WebCT usage. It could be expected that students who felt less confident in their studies would use as many avenues as possible for learning, but this was not the case. Leaving aside the question of language difficulties, poorer students possibly feel they gain greatest value from face-to-face contact in lectures and tutorials. This issue is something

that is worthy of further investigation.

Age, gender and length of previous experience with computers were not significantly related with use of online materials. The finding that it did not appear to matter how much previous experience with computers students had is interesting, because it suggests that even those with less experience are capable of using the web site if they feel a need to do so.

Though gender and age were not significant predictors at the .05 level, the p value was less than .10, which suggests a weak relationship could exist. Further research with a larger sample size and more power in the statistical tests is warranted. Both of these relationships were positive, meaning that women and older students used WebCT more.

To conclude, the study has some important messages for accounting educators. Students make use of online materials in accounting courses if available, presumably because they find them valuable. This is the case even with materials that are relatively straightforward to provide, such as the administrative material, lecture notes and solutions provided to students in this study. In addition, the online materials are used significantly more often by students who have English as a second language compared with native-English speakers. With this evidence available, accounting educators should find it difficult not to make use of an online learning environment like WebCT if it is available. This message is especially salient for educators who have large proportions of non-native-English speakers in their classrooms.

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