Exploring a blended learning approach to improving student success in the teaching of second year accounting

P Prinsloo

Institute for Curriculum and Learning Development (ICLD)
University of South Africa

AA van Rooyen

Department of Financial Accounting
University of South Africa

Abstract

Blended learning is the new buzzword in higher education. International trends in open and distance learning proclaim that the use of blended learning is essential for any distance education institution that wishes to remain relevant in an increasingly contested market. Blended learning refers to the use of a variety of technologies, pedagogies, contexts and delivery modes (such as online learning) to create a strategic mix that will increase student success. Online learning environments form a crucial part of any blended learning strategy. In the South African context, access to such online environments is a controversial issue.

This article reports on a study which attempted to determine how many of the students registered for Accounting at second year level at the University of South Africa (UNISA) would benefit from a blended learning approach.

Key words

Access
Blended learning
Open and distance learning
UNISA

1 Introduction

The University of South Africa (UNISA) is the fifth largest open and distance learning (ODL) higher education institution in the world, with almost 250 000 students. Student success, retention, throughput and satisfaction have become important ingredients in the university's survival. In an increasingly competitive higher education landscape, it is necessary to investigate the effective integration of various strategies, such as creating online learning environments or using CD-ROMs and video conferencing. The inclusion of these technologies in teaching strategies and modes of delivery is often referred to as blended learning.

Blended learning is often discussed in the context of face-to-face teaching, where its various specific asynchronous learning activities supplement traditional methods (Bonk, Kim & Zeng 2004; Osguthorpe & Graham 2003). By contrast, in the context of most ODL

teaching environments, printed materials form the basis of the communication between lecturers and students, also resulting in asynchronous learning. However, increasing efforts are being made to use a range of technologies and other support mechanisms to lessen the impact of the geographical separation and the transactional distance (Moore 1993) between students and lecturers. 'Transactional distance' is the amount of interaction and dialogue between students and lecturers. This interaction can use a variety of communication channels and can be synchronous and/or asynchronous. The higher the amount of interaction and dialogue, the less 'distance' there is in the pedagogical 'transaction' between the lecturer and the student. By blending a range of teaching strategies and technologies, lecturers and learning developers can lessen this transactional distance. It is often claimed that blended learning increases student success (Oliver & Trigwell 2005).

Including different technologies and strategies into a blended learning approach is futile if students are unable to **access** these technologies and strategies. The question of access to these support services and technologies often overshadows other concerns such as the essential **integration** of these technologies in creating sensorily and conceptually rich environments for active learning. Merely adding another technology or sending out more material does not necessarily increase students' chances of success.

The main mode of teaching delivery at UNISA is printed study material. In recent years, additional tutorial support has also been offered at a number of regional centres. Several initiatives have also been launched to increase the effective use of technologies and online learning environments. Most of the students enrolled at UNISA come from historically disadvantaged backgrounds. Many students live in remote areas which have poor infrastructure and may even lack sustained electricity supply. This has seriously affected UNISA's options with regard to the use of technology to support the learning endeavours of students, but there are signs that this situation is changing.

This article reports on the access which students registered for second year Accounting in 2004 had to a range of possible interventions. These interventions included tutorials at learning centres, video conferencing, computers and limited online environments. This study explored how many students had access to computers, online environments, video conferencing and tutor support services. In the case of students' access to computers and online environments, the nature of this access was also explored. The data may assist in the planning and redesigning of more effective learning interactions which will hopefully have a positive impact on the success of students.

2 Background to the study

Almost 60% of students registered for second-year Accounting (in particular for ACN202-R) have failed the module at least once. Any attempt to improve the pass rate has to take into account the dynamic interaction between factors such as the multidimensional nature of studying in an ODL environment, student profiles and the nature of the discipline. Traditionally, interventions to improve the pass rate in a distance education environment have focused on evaluating and revising study materials and assignments. Although tutorial support and visits by lecturers have been offered at selected regional centres, the number of students attending these tutorials and discussion classes was very small compared to the total number of students registered for the module. Recently lecturers have therefore begun to investigate the possibility of using a range of technologies to increase the effectiveness of teaching and learning.

Blended learning is often thought of purely as the **expansion** of face-to-face teaching in a residential teaching environment to include specifically asynchronous online learning interventions. A broader description would include a range of live face-to-face teaching (formal and informal), virtual synchronous collaboration, virtual asynchronous collaboration, self-paced learning and performance support. As Rossett, Douglis and Frazee (2003) put it,

> *A blend is an integrated strategy for delivering on promises about learning and performance. Blending involves a planned combination of approaches, such as coaching by a supervisor; participation in an online class; breakfast with colleagues; competency descriptions; reading on the beach; reference to a manual; collegial relationships; and participation in seminars, workshops, and online communities.*

Other definitions, such as those of Driscoll (2002), Oliver and Trigwell (2005) and Whitelock and Jelfs (2003), stress that 'blended' can refer to a mixture of a range of technologies, pedagogies or learning theories or the blending of a range of contexts.

This study uses the broader definition of blended learning presented by Rossett *et al.* (2003). Before the content of the blended approach can be determined, in other words, the blend of strategies and technologies chosen, it is important to establish how many students want to attend tutorials or video conferencing and how many of them have access to computers and online environments.

The advantages of and possible concerns about using online learning environments in teaching and learning in distance education are well documented (Bates 2003; Horton 2000; Kearsley 2000; Paloff & Pratt 1999). In a much publicised example, 'an e-learning venture by Oxford University, with Yale and Stanford in the US, has folded after failing to attract enough students' (MacLeod 2006). This failure does not preclude other higher education institutions from using online learning, but it does warn such institutions that, to be successful, the inclusion of online learning in a blended learning approach must be carefully matched with the profile of the student body and their expectations and perceptions of the transactional distance.

Among the many reasons that lecturers at UNISA give for **not** utilising the online environment effectively is the assumption that many of UNISA's students do not have access to networked computers and therefore do not have access to an online learning environment. In reality, however, the increase in the number of students providing an e-mail address on their registration form as a possible contact address suggests that more students may have access to networked computers than is generally assumed (Prinsloo 2004). No institutional data are currently available about the nature of this access (in terms of locality and quality) and its cost implications for students (in other words, whether they have to pay for access, for example, at Internet cafés).

3 Methodology

The study consisted of two distinct phases. The first phase entailed drawing up a profile of the study population, which is all students who were registered for ACN202-R in 2004, for both semesters. This data was requested from the Student System maintained by Computer Services at UNISA. The data was received and analysed using QuatroPro (Version 11). The data file was received as an LIS file and was then saved as an LST file. The columns representing various biographical characteristics of students were analysed separately. The data per column were sorted and the frequencies were counted. The percentages used in calculating the ratio of the student profile to total registered students (as per Tables 1 to 6)

were rounded off to two decimal places. The percentages (as per Appendix A) calculated as a ratio of the varying student responses to the questions posed in the questionnaire to the total number of student responses received were rounded off to two decimal places.

The second phase of the research entailed drafting a questionnaire. A questionnaire (Appendix A) was drafted and sent to students registered for Accounting 202 (ACN202-R) during both semesters of 2004. The purpose of the questionnaire was to establish the answers to the following questions:

- How many students attend the tutorial programme at learning centres?
- How many students would be able to attend video conferencing?
- How many students attend group discussions with lecturers in selected areas?
- How many students have access to computers? What type of computers?
- What computer skills do students have?
- How many students have access to the Internet?

A very low percentage of questionnaires were returned. In the first semester, only 144 questionnaires were returned (less than 7%), and in the second semester, 193 questionnaires were returned (less than 10%). The questionnaires were sent out **indiscriminately** to all students registered for the particular semester. There was nothing to prevent a student from sending in a questionnaire again if he/she was repeating the module after failing it in the first semester.

The percentage of questionnaires returned is below the average of expected returns that Babbie and Mouton (2005:261) propose, as they suggest that a response rate of 50% is adequate. The results of this study can therefore not be used to make generalised assumptions about the **whole** study population. The data gathered from the returned questionnaires do, however, provide some insight about a small part of the whole study population.

4 Student profile in ACN202-R

In determining the appropriateness of a blended learning approach, it is critical to understand the student profile clearly. In 2004, a total of 2126 students were registered for ACN202-R in the first semester and a total of 1974 students were registered in the second semester. Female students slightly outnumbered male students in both semesters (52% women to 48% men). The student profile broken down by race is set out in Table 1:

Table 1 The racial profile of ACN202-R

First semester			Second semester		
Race	**Number**	**Percentage**	**Race**	**Number**	**Percentage**
Asian	415	**19.52%**	Asian	355	**17.98%**
Black	812	**38.19%**	Black	804	**40.73%**
Chinese	5	**0.24%**	Chinese	3	**0.15%**
Coloured	122	**5.74%**	Coloured	98	**4.97%**
White	772	**36.31%**	White	714	**36.17%**

The majority of students are from Asian, Black, Chinese or Coloured backgrounds.

As Table 2, below, indicates, the majority of students speak English as their second language. Considering that the prescribed text book is only available in English, proficiency

in English may play a significant role in the students' success, as has been found in various studies, for example, that of Du Plessis, Prinsloo and Muller (2005).

Table 2 The language composition of the registered students

First semester			Second semester		
Language	**Number**	**Percentage**	**Language**	**Number**	**Percentage**
Afrikaans	485	**22.81%**	Afrikaans	432	**21.88%**
English & Afrikaans	28	**1.31%**	English & Afrikaans	21	**1.06%**
German	1		German	1	
English	836	**39.32%**	English	762	**36.77%**
French	3		French	6	
Greek	3		Greek	1	
isiNdebele	30	**1.41%**	isiNdebele	36	**1.82%**
Ndonga	4		Ndonga	2	
Sesotho sa Leboa	131	**6.16%**	Sesotho sa Leboa	126	**6.38%**
Other African	18	**0.84%**	Other African	17	**0.86%**
Other foreign	15	**0.70%**	Other foreign	8	
Portuguese	14	**0.65%**	Portuguese	12	**0.60%**
Shona	63	**2.96%**	Shona	78	**3.95%**
Sesotho	36	**1.69%**	Sesotho	39	**1.97%**
siSwati	16	**0.75%**	siSwati	23	**1.16%**
Xitsonga	41	**1.92%**	Xitsonga	42	**2.12%**
Setswana	89	**4.18%**	Setswana	79	**4.00%**
Tshivenda	41	**1.92%**	Tshivenda	29	**1.46%**
isiXhosa	74	**3.48%**	isiXhosa	75	**3.79%**
isiZulu	198	**9.31%**	isiZulu	185	**9.37%**

Table 3, below, indicates that the **majority** of students failed ACN202-R at least once. Almost 30% have registered for ACN202-R more than twice. A study by Du Plessis *et al*. (2005) found that repeating a module in first year Accounting decreases a student's chance of passing the module on the second attempt. The impact of repeating a module in second-year Accounting on a student's success must still be ascertained.

Table 3 Number of times students have registered for ACN202-R

First semester			Second semester		
Registration	**Number**	**Percentage**	**Registration**	**Number**	**Percentage**
First registration	818	**38.47%**	First registration	863	**43.71%**
Second	555	**26.10%**	Second	463	**23.45%**
Third	356	**16.74%**	Third	322	**16.31%**
Fourth	110	**5.17%**	Fourth	155	**7.85%**
Fifth	48	**2.25%**	Fifth	83	**4.20%**
Sixth	26	**1.22%**	Sixth	51	**2.58%**
Seventh	16	**0.75%**	Seventh	19	**0.96%**
Eighth	8	**0.37%**	Eighth	10	**0.50%**
Ninth	5	**0.23%**	Ninth	4	**0.20%**
Tenth	1	**0.04%**	Tenth	3	**0.15%**
Eleventh			Eleventh	1	**0.05%**

Table 4, below, illustrates the pass rate profile. Almost 12% of students withdrew from the examination and just more than 31% failed it.

Table 4 Pass rates for the student profile

First semester			Second semester		
Results	**Number**	**Percentage**	**Results**	**Number**	**Percentage**
Absent	241	**11.33%**	Absent	241	**12.20%**
Failed	670	**31.51%**	Failed	627	**31.76%**
Passed	833	**39.18%**	Passed	831	**42.09%**
Supplementary	371	**17.45%**	Supplementary	271	**13.72%**
Withdrawn	10	**0.47%**	Withdrawn	4	**0.20%**
Disciplinary	1		Disciplinary	0	

An interesting aspect of the employment profile (Table 5) for this study population is the fact that almost 35% of the students indicate that they study full-time. The study by Du Plessis *et al*. (2005) found that full-time students in first year Accounting were less likely to pass than students who work and study. If this is also true for full-time second year Accounting students, they may need different support from their part-time counterparts.

Table 5 Employment profile of the students

First semester			Second semester		
Occupation	**Number**	**Percentage**	**Occupation**	**Number**	**Percentage**
Accountant/ auditor	268	**12.61%**	Accountant/ auditor	229	**11.60%**
Clerical or related worker	427	**20.08%**	Clerical or related worker	381	**19.30%**
Computer specialist	13	**0.61%**	Computer specialist	30	**1.52%**
Full-time student	734	**34.53%**	Full-time student	687	**34.80%**
Manager/ administrator	66	**3.10%**	Manager/ administrator	72	**3.65%**
Not classified	204	**9.60%**	Not classified	174	**8.82%**
Unknown	97	**4.56%**	Unknown	116	**5.88%**
Sales worker	20	**0.94%**	Sales worker	19	**0.96%**
Teacher prim/sec	66	**3.10%**	Teacher prim/sec	59	**2.99%**
Unemployed	130	**6.12%**	Unemployed	125	**6.33%**
Other	101	**4.75%**	Other	82	**4.16%**

The age profile of the study population is shown in Table 6, below.

Table 6 Age profile

First semester			Second semester		
Age	**Number**	**Percentage**	**Age**	**Number**	**Percentage**
Younger than 20	3	**0.14%**	Younger than 20	3	**0.15%**
20 +	1 481	**69.66%**	20 +	1 319	**66.82%**
30+	506	**23.80%**	30+	515	**26.09%**
40+	136	**6.40%**	40+	137	**6.94%**

While study materials are regularly updated and improved, more support is obviously needed for the students. However, exactly what kind of support will actually be effective for this specific student profile must be determined. This study therefore focuses on students' access to a **range of possible** interventions, such as video conferencing or online learning environments.

5 Analysis and discussion of the questionnaire results

In this discussion, the sequence of the questions in the questionnaire is followed. The results are analysed and discussed in the context of the student profile. Questions 1 and 2 deal with general background to the registration, Questions 3 and 4 with assignments and feedback, Questions 5 and 6 with the format and content of the study guide, Questions 7 and 8 with attendance of group discussions at learning centres.

Because of the centrality of computers, particularly access to online learning environments, in blended learning, the remaining questions deal with students' access to computers and online environments and the details and nature of such access. Questions 9 to 23 explore the different dimensions of students' access to computers and online environments. The viability of video conferencing is explored in Questions 24 and 25.

5.1 *Number of registrations for ACN202-R (Question 1)*

According to the student profile, of the students registered for the course, 41.09% were registered for ACN202-R for the first time, while 58.91% had registered for the module more than once. An average of 61.37% of the respondents to the questionnaire indicated that they had registered for the first time, while 38.63% of the respondents indicated that they had re-registered for the module after failing it on a previous attempt. There is no clear explanation for the difference between the student profile and the results of the questionnaire.

5.2 *Reasons for taking ACN202-R (Question 2)*

Of the respondents, 72.3% were taking ACN202-R as part of the prescribed curriculum for a Bachelor in Accounting Science (BCompt), while 27.7% of students had registered for other reasons.

5.3 *The role of assignments (Questions 3 to 4)*

Almost half of the respondents (49.31%) indicated that a compulsory assignment would assist them to start earlier with their studies, and 25.09% of the respondents commented that the feedback on such an assignment would help them to make their learning style more efficient. Considering that currently there is little opportunity for interaction and dialogue between lecturers and students in ACN202-R, a compulsory assignment would perhaps decrease the transactional distance. Interestingly, however, 15.71% of the students in both semesters said that a compulsory early assignment would actually disrupt their studies, which they only start later in the semester. This is one of the paradoxes of ODL, that students may actually experience the institution's attempt to decrease the transactional distance by means of a compulsory assignment early in the learning cycle as an infringement of their freedom to study according to their own time schedules.

5.4 *Format and role of the study guide (Questions 5 to 6)*

Prior to 2004, the study guide for ACN202-R was in an A5 format. In 2004, the format of the study guide was changed to A4. More than 85% of participants said they liked the change.

In an ODL institution the main form of communication between students and the institution is written communication. Study guides should not only convey and explain the

content of the particular discipline, but should also allow students to develop certain competences and values. While the debate in residential higher education institutions regarding blended learning revolves around face-to-face lectures, carefully designed written study guides are the backbone in a distance education environment. The participants' responses to questions on the quality of the study guide were therefore very important. More than 85% of the respondents indicated that the study guide helped them to understand the concepts and apply accounting techniques correctly.

The challenge in a blended learning approach would be to integrate other technologies and interventions successfully with the role study guides play in the learning experience. Mere duplication of content and exercises may not necessarily empower students more. The success of a blended learning approach will depend on carefully planned and optimally facilitated spaces for active learning.

5.5 *Role of group discussions (Question 7)*

Traditionally, group discussions in UNISA courses have been limited to the rare occasions when students can attend sessions with the course lecturers. Though student responses to group discussions are positive in general, not all students are able to attend these sessions. The reasons for non-attendance vary from a lack of interest to logistical concerns and difficulty in getting time off from employers. To compensate for the fact that not all students are able to attend these group discussions, the departments as a rule send out the notes used in these sessions to all students.

In 2004, one group discussion per semester was held in Pretoria, Durban and Cape Town. Fewer than 22% of the respondents in this survey indicated that they had attended the group discussions. Taking into account the cost to the Department of Accounting in relation to the small percentage of students who actually benefited from this intervention, the cost effectiveness of group discussions as an intervention in a blended learning approach should be reappraised.

5.6 *Role of tutorials at learning centres (Questions 8 and 24)*

More than 27% of the respondents indicated that they had not attended the tutorial sessions because they felt they could manage on their own. Given that more than 60% of the students were repeating this module, it is strange that more students do not avail themselves of these extra opportunities to attend tutorials. Of the participants, 20% indicated that the learning centres are too remote from where they live, but, more worryingly, almost 17% claimed that they were unaware of the tutorial programme.

In 2004, UNISA had Learning Centres in Pretoria, Johannesburg, Polokwane, Durban, Cape Town and Umtata. Tutorial classes were held for ACN202-R students at all these Learning Centres.

Research at UNISA (Visser & Hall 2006) found that students who attend tutorials do not necessarily have a better chance of succeeding than students who do not. In 2006 UNISA announced that it will appoint more associate academics to act as tutors at the regional centres and, more importantly, to build supportive relationships with students. It is too soon to judge what the impact of this strategy will be. As part of a blended approach to the teaching of Accounting at second year level these tutorials may be very valuable.

However, the unique student profile at UNISA must shape the tutorial programme as this will determine whether the programme benefits students. Most of the student body is employed, so the tutorial programme is offered on Saturdays, on the assumption that then more students will be able to attend. Many students may, however, use weekends to catch up on their studies, attend to family matters, socialise and, increasingly, attend funerals (this last cause is increasingly reported by both students and the learning centres). Although this fact is not officially acknowledged by government or many families, many of these deaths are HIV/AIDS-related. Many statistics indicate that the pandemic has not yet peaked. What effect HIV/AIDS will have on the student and lecturing body remains to be seen. What is certain is that the cultural rites relating to funerals increase the pressure on students' time and financial resources.

5.7 *Establishing the nature of students' access to computers (Questions 9 to 14)*

The percentage of students who have access to computers and online environments is important in deciding on which technologies to include in a blended learning approach. It is also essential to determine **what kind of access** they have. Do they have to pay for access? At what times of the day or week do they have access?

Further research may also shed light on the impact of variables such as gender, race and geographical distribution on computer access. For example, although over 50% of the respondents in this study say they own a computer, it is crucial to understand **who** this 50% are. Are they male or female? To which racial group do they belong? Research done by Prinsloo (2006) and others, such as Brookfield (2003), Brown, Cervero and Johnson-Bailey (2000), Nakaruma (s.a.) and Sheared and Sissel (2001), has found that questions such as these do matter significantly. '**Ownership'** of a computer may indicate unlimited access, but also implies responsibility for maintaining the computer, updating software, including anti-virus software, and so on.

The first question (Question 9) relating to access assesses how many students own a computer. In the first semester 57.24% of the respondents and in the second 50.79% said that they owned a computer. Also, more than 80% indicated that they had access to a computer (Question 10). Since the majority of these students came from previously disadvantaged groups, these high percentages called into question the widely accepted assumption that the majority of students do not have access to computers. The effect of gender on owning a computer has been explored by Gunn, McSporran, Macleod and French (2003). They found that 'interactions that take place through electronic channels lose none of the socio-cultural complexity or gender imbalance that exists within society' (Gunn *et al*. 2003:14). They also found that 49% of the women in their study did not have priority access to computers at home. Thus even having a computer at home does not imply unlimited access. Women mostly participated in online discussions and tasks only after taking care of a variety of family and domestic commitments. Interestingly, Gunn *et al.* (2003:14-30) also found that although women logged in less often than men, they posted more contributions than men.

Question 11 explored the *location* of access. Location refers to the site of access, whether in the student's home or work, at an Internet café, and so on. In the questionnaire the options are not mutually exclusive and students could choose more than one option. It was important to explore the location of the computers to which more than 80% of the students

indicated that they had access to. Of the respondents, 55% had access to a computer in the place where they live. This implies that someone in that place incurs the cost of ensuring that the computer remains in a working condition, and if the computer is connected to the Internet, that person bears the cost of the connection and the calls.

Over 40% of the respondents indicated that they had access to a computer at their workplace. However, contact between students who use their work computers and the institution providing the teaching is becoming more and more complex. Mass e-mails are blocked by some institutions, as are e-mails with attachments. Employees are held responsible for Internet costs and more and more organisations are preventing students from using the Internet for study purposes during office hours. Only about 15% of the respondents accessed a computer at an Internet café.

Question 12 explored the times during which students have access to a computer. Almost 64% of the respondents indicated that they had access to a computer during the day. Once again, the issue is complex. It is one thing to have access to a computer at work as part of your official duties, but quite another to be able to use this computer at work to do your assignments during office hours. The percentage of students with access to a computer at night during the week falls sharply to less than 50%. This percentage is almost the same as the percentage of students with access to a computer on the weekend.

The low percentage of students who have access to computers during holidays suggests an interesting hypothesis. Since most of the students are employed, it may be that they either go home for the holidays, in other words, to their parental or family homes, or that they do not study during their holidays.

One of the assumptions in Question 13 was that students' access to a computer may be determined by power and gender relations. In their study, Gunn *et al.* (2003) speak of 'priority access', implying that some persons have first priority when it comes to access. Priority is often determined by gender and/or power relations. Almost 64 percent% of the respondents indicated that they had priority access to computers. This percentage was confirmed in the next question (Question 14), which asked respondents for how long they can use the computer at a time. More than 65% indicated that they could use a computer for as long as they **wanted to**.

Interestingly, quite a number of students had to ask permission to use a computer or had to 'book' time on a computer or used it as a favour. Although the percentage was relatively small (almost 20%), it indicated that access to computers is often embedded in economic and/or power relations outside the locus of control of many students.

5.8 *Establishing the 'type' of computer used (Question 15)*

Question 15 explored two possible interventions, namely, first, using CD-ROM materials which can be sent to students to provide them with extra tuition, exercises and examination preparation; and second, using the Internet as a collaborative space were students can interact, network and find peer help. Many higher education institutions are exploring using blended learning approaches where traditional lectures or distance education materials are supplemented with some online activities to enrich the learning experience.

While access to such networked environments is accepted as the standard in developed countries, it is still unusual in most developing countries. Therefore, intelligent use of CD-ROMs may provide higher education in developing countries with a powerful resource. Part of this study was therefore designed to establish the nature of the computers to which

students have access. The problem in establishing the size and type of a student's computer, however, is that many students are unable to answer technical questions such as how many gigs of memory their computer has or what the speed of the computer is. The questionnaire also assumed that students know what a CD-ROM and a stiffy drive are. Despite these difficulties, however, the questionnaires did try to establish the basics of the computers, such as whether they had CD-ROM drives or speakers and so on... (If the computers have speakers, the possibility of using audio on the CD-ROMs increases.)

A remarkable 3.45% of the respondents (first semester) and 6.84% of the respondents (second semester) indicated that they did not know how to describe the computers to which they have access. Since the majority of the students are employed, these figures strongly suggest that many of the assumptions about the present-day networked generation may be generalisations. This notion was confirmed by the answers to the next few questions in which students had to rate their own computer literacy.

5.9 *Rating students' computer literacy (Questions 16 to 19)*

Questions 16 to 19 explored students' computer literacy. A study was done by Larres, Ballantine and Whittington (2003) on the reliability of such self-assessment of competence in a variety of basic computer skills. Their study confirmed that students often overestimate their own competence in such questionnaires.

The questions used in the questionnaire in the study reported in this article did not focus on basic computer literacy skills such as saving a word processing file from a computer onto a stiffy or a flash drive or opening a PDF file. Instead, they question students on their ability to use three common programs or packages, namely word processing, spreadsheets and e-mail. These general terms are used, since the programs or packages come in different formats and brands. These three types of actions are those most likely to be used in a blended learning teaching and learning approach.

More than 85% of the respondents indicating that they could actually use a word processing program (Question 16), more than 10% that they could not use such a program and just over 3% that they did not know what a word processing program is. More or less 75% of the respondents indicated that they could use a spreadsheet (Question 17) on a computer, but over 5% did not know what a spreadsheet is.

Question 18 explored the possibility of using e-mail to enrich the teaching and learning experience. This question specifically asks whether students could **access** e-mail, not whether they had an e-mail address or not. Question 19 asked whether students could send e-mail. There was a vast difference between the responses students registered in the first semester gave and those given in the second semester regarding access to e-mail. While 76.39% in the first semester group could access e-mail, only 64.58% in the second semester group could do so; this is an 11.81% difference. Further research exploring the reasons for the difference may provide important information. The same discrepancy is found in the responses to Question 19, which asked whether students could send e-mail.

5.10 *Access to online environments (Questions 20 to 23)*

Access to the Internet (Question 20) is a vexed question. It is one thing to have access to the Internet through a linked computer, and quite another to be competent in using the Internet. Critical competence in the use of the Internet is a crucial skill and value for the

twenty-first century. Thus the question is phrased to determine who carries the cost of the Internet use. Implicit in this question is the notion of the location of access to a computer. While many students use (and would use if allowed to) their employers' connectivity, the challenge is to what extent students themselves can afford to carry the cost for a blended learning approach. Almost 34% of respondents indicated that they did not have to pay for access to the Internet (Question 23). Prinsloo (2003) found that the large portion of the cost to the student of alternate learning approaches is embedded cost. However, the students' responses to this question showed a different trend, since more than 70% indicated that they could access the Internet. In stark contrast to this percentage, only 46.87% of students were registered to use the Students Online (SOL) discussion forum (Questions 21 to 22). Registration on the online forum is not compulsory, and in 2004 it contained very little discussion outside administrative matters, help with assignments and negotiations for selling prescribed text books. Less than 3% of the respondents posted a comment, while just over 22% read comments posted (Question 22).

5.11 *Role of videoconferencing (Question 25)*

More than 70% of the respondents indicated that they would be able to attend such a conference at least once or twice a semester. More than 36% of participants indicated that they would attend regularly. Fewer than 14% said they were not interested, while approximately 14% indicated that logistical problems would prevent them from attending.

6 Towards a blended learning approach

While some international research indicates that blended learning approaches do contribute to greater student satisfaction and success, a number of concerns should caution institutions such as UNISA that **more** is not necessarily **better**. In fact, it may not necessarily be the blendedness that 'makes the difference, but rather the fundamental reconsideration of the content in light of new instructional and media choices' (Voos 2003:5), or the variety introduced into the learning experience (Oliver & Trigwell 2005:22).

Whatever the reason for past success, international research seems to indicate that blended learning approaches **do** make a difference in the success rate of students (Garrison & Kanuka 2004).

Blended learning as a teaching, learning and delivery model is one of many possible strategies to increase student engagement and success. While blended learning as a strategy focuses on the responsibility of instructional and curriculum designers and lecturers, research also indicates the importance and impact of the responsibility and resilience of students on the effectiveness of their learning (Banyard & Cantor 2004; Brown 1988; Pizzolato 2003, 2005).

The data gathered in this study suggests that a blended learning model in second year Accounting would only be able to include certain inventions and technologies and not others. The feedback from the questionnaires suggests that the following could be part of a blended learning approach:

- Optimal use must be made of written study material as a foundation in this learning experience.

- A CD-ROM with some audio content, interactive activities and exercises must be developed to be sent to all registered students. Depending on the complexity of the 'ingredients' on the CD-ROM, production cost is the main expense. Reproduction of CD-ROMs is fairly cheap and may be a very cost-effective way to enrich the learning experience.
- Students must be encouraged to form peer groups and maybe even do group assignments.
- If students are told on registration that they must arrange access to a computer and the online environment, say once every two weeks, most will probably be able to manage this. However, it is important not to disadvantage students who will not be able to arrange such access.
- Access to mobile technologies was not investigated in this study, but the effective use of mobile technologies could become an integral part of a blended learning approach in higher education in future (Alexander 2004).

7 Conclusion

Blended learning as a strategic blend of technologies and support mechanisms can enhance student success. Access to computers, online environments, video conferencing and tutorial support remain essential issues in the planning and redesigning of learning experiences in an ODL environment. This study found that online teaching, whether it is conducted synchronously or asynchronously, can be considered seriously as part of a blended approach. Since the majority of students have access to computers with CD-ROMs, lecturers could develop CD-ROMs containing exercises with immediate and autonomous feedback.

This article has established the viability of blended learning as a possibility to increase the effectiveness of teaching in second year Accounting. Although this research has explored access as a determining factor for the provision of blended learning, the impact of other factors such as race, gender, and economic strata on the effectiveness of blended learning still need to be investigated further.

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Appendix A

	First semester n= 144	Frequency missing	Second semester N=193	Frequency missing
Question 1 **How many times have you registered for ACN202-R?** **(Tick ONE only)**		1		1
• First registration	53.47%		69.27%	
• Failed a previous attempt and repeating this semester	46.53%		30.73%	
Question 2 **Why did you take ACN202-R? (Tick ONE only)**		2		-
• I am taking ACN202-R as part of a BCompt degree	74.13%		70.47%	
• I am doing a BCom and Accounting is my major	16.07%		21.75%	
• I am registered for ACN202-R for non-degree purposes	4.9%		3.63%	
• Other – please specify	4.9%		4.15%	
Question 3 **A compulsory assignment (Tick ONE only)**		1		1
• Will help me start earlier with my studies	46.53%		52.08%	
• Will help me because the feedback will assist me to change my learning style	27.77%		22.40%	
• Is unnecessary because I do not like being forced to study	4.17%		5.21%	
• Will disrupt my study programme because I only start later in the semester	17.36%		14.06%	
• Other – please specify	4.17%		6.25%	
Question 4 **With regard to the solutions to the assignments, which ONE of the following would you prefer?**		-		-
• The solutions should be sent together with the questions at the beginning of the semester	27.59%		27.98%	
• The solutions should be sent to me after the closing date for each of the assignments	72.41%		72.02%	
Question 5 **Which ONE of the following do you prefer?**		2		3
• The current A4 format of the study guide	85.31%		85.26%	
• A smaller A5 format for the study guide	13.29%		14.74%	
• Other – please specify	1.40%			
Question 6 **On the whole, which ONE of the following reflects your opinion of the ACN202-R study guide the best?**		3		1
• The guide helps me to understand the concepts and helps me to apply accounting techniques correctly	87.32%		86.46%	
• The guide does not help me to understand the concepts and does not help me to apply the accounting techniques correctly	10.56%		6.77%	
• Other – please specify	2.12%		6.77%	

continued

	First semester n= 144	Frequency missing	Second semester N=193	Frequency missing
Question 7 **Did you attend the group discussions for ACN202-R?**		1		1
• Yes	26.39%		17.19%	
• No, I can cope on my own	17.36%		15.10%	
• No, it was too far from where I live	22.92%		26.56%	
• No, I could not get leave from work	22.92%		32.29%	
• Other – please specify	10.41%		8.86%	
Question 8 **Unisa has learning centres throughout South Africa. There is tuition available on Saturdays at a nominal fee. Did you attend? (Tick ONE only)**		3		2
• Yes, the tutorials helped me to understand my work better	19.72%		16.23%	
• No, I could manage on my own	26.06%		28.27%	
• No, the nearest learning centre was too far from where I live	21.83%		20.42%	
• No, I did not know about the tutorials	19.01%		14.66%	
• Other – please specify	13.38%		20.42%	
Question 9 **Do you own a computer? (Tick ONE only)**		1		2
• Yes	57.24%		50.79%	
• No	42.76%		49.21%	
Question 10 **Do you have access to a computer? (Tick ONE only)**		1		3
• Yes	82.64%		78.95%	
• No	17.36%		21.05%	
Question 11 **Where do you have access to a computer? (Tick ALL applicable options)**		-		-
• I do not have access to a computer	13.79%		17.61%	
• At the place where I live	57.93%		51.30%	
• At my workplace	40.69%		43.52%	
• At the house of a family member or a friend	17.93%		12.95%	
• At an Internet café	17.24%		11.91%	
• At a Unisa learning centre	13.10%		8.29%	
• Other – please specify	2.75%		2.59%	
Question 12 **When do you have access to the computer? (Tick ALL applicable options)**		-		-
• I do not have access to a computer	15.17%		18.13%	
• During the day on weekdays	66.90%		60.62%	
• At night during the week	51.72%		47.15%	
• During the day on weekends	48.28%		46.1%	
• During the night on weekends	43.45%		39.37%	
• During holidays	31.72%		35.75%	

continued

	First semester n= 144	Frequency missing	Second semester N=193	Frequency missing
Question 13				
How would you describe your access to the computer? (Tick ONE only)		-		3
• I do not have access to a computer	12.41%		18.42%	
• I can use a computer whenever I want to	65.52%		62.11%	
• I must ask permission to use a computer	9.66%		8.95%	
• I must book to use a computer	11.72%		5.26%	
• I can only have the use of a computer as a favour	0.69%		5.26%	
Question 14				
What is the length of time for which you can use a computer? (Tick ONE only)		-		4
• I do not have access to a computer	13.10%		16.93%	
• As long as I want to	66.21%		65.08%	
• I cannot use a computer for as long as I want to	16.55%		13.23%	
• Other – specify	4.14%		4.76%	
Question 15				
Which ONE of the following describes the computer that you use the best?		-		3
• I do not have access to a computer	13.10%		17.89%	
• It has a CD Rom, speakers and a stiffy drive	61.38%		54.74%	
• It has a CD Rom and a stiffy drive	15.17%		15.79%	
• It has a stiffy drive	6.90%		4.74%	
• I do not know how to describe it	3.45%		6.84%	
Question 16				
Are you capable of doing word processing (typing) on a computer, using a word processing package? (Tick ONE only)		-		3
• Yes	87.58%		83.16%	
• No	7.59%		14.21%	
• I do not know what word processing means	4.83%		2.63%	
Question 17				
Are you capable of doing spreadsheets on a computer? (Tick ONE only)		-		2
• Yes	77.93%		72.78%	
• No	15.17%		23.56%	
• I do not know what spreadsheets are	6.90%		3.66%	
Question 18				
Can you access e-mail?		1		1
• Yes	76.39%		64.58%	
• No	20.83%		34.38%	
• I do not know what e-mail is	2.78%		1.04%	
Question 19				
Can you send e-mail?		1		2
• Yes	77.78%		66.49%	
• No	19.44%		31.94%	
• I do not know what e-mail is	2.78%		1.57%	
Question 20				
Can you access the Internet?		1		1
• Yes	72.91%		67.19%	
• No	24.31%		32.29%	
• I do not know what the Internet is	2.78%		0.52%	

continued

	First semester n= 144	Frequency missing	Second semester N=193	Frequency missing
Question 21 **Are you a registered user on SOL (Students-on-line)?**		-		1
• Yes	51.03%		42.71%	
• No	46.21%		55.73%	
• I do not know what SOL is	2.76%		1.56%	
Question 22 **With regard to the ACN202-R discussion forum on the Unisa web-page, which of the following did you do? (Tick ONE only)**		5		8
• I have read the comments and have posted a comment	1.43%		4.32%	
• I have only read the comments	25.71%		18.38%	
• I did not know that some modules had discussion forums	72.86%		77.30%	
Question 23 **With regard to access to the Internet, which ONE of the following best applies to you?**		2		2
• I do not have to pay for the time I spend on the Internet	36.36%		30.89%	
• I do have to pay for the time I spend on the Internet	39.16%		34.03%	
• I do not have access to the Internet	21.68%		34.03%	
• I do not know what the Internet is	2.80%		1.05%	
Question 24				
Which ONE of the following Unisa learning centres is the closest to you?		3		3
• Sunnyside (Thutong)	34.51%		26.32%	
• Johannesburg	26.06%		30.53%	
• Polokwane	3.52%		10.53%	
• Western Cape	14.79%		-	
• Durban	17.79%		26.84%	
• Umtata	2.11%		3.68%	
• Kimberley	2.11%		-	
• Nelspruit	2.11%		2.10%	
Question 25 **If Unisa offered video conferencing to students at the learning centres, which ONE of the following would be applicable to you?**		-		3
• Yes, I would be able to go regularly	38.62%		34.74%	
• Yes, I would go once or twice a semester	35.17%		37.37%	
• No, I would not be interested	11.72%		15.26%	
• No, it is too far	14.49%		12.63%	