

AN ANALYSIS OF ELECTRONIC LEARNING AS A MEANS OF TAX EDUCATION IN SOUTH AFRICA

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Student number 27500277

Submitted in partial fulfilment of the requirements for the degree

Magister Commercii in Taxation

in the

FACULTY OF ECONOMIC AND MANAGEMENT SCIENCES

at the

UNIVERSITY OF PRETORIA

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Date of Submission:
25/10/2010

ABSTRACT

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The arrival of the Internet and the World Wide Web has had a radical impact on education and in particular the delivery of education (instruction). Through these channels, alternative modes of delivering instruction have been created.

Over the past few years, the use of electronic methods as a means of delivering instruction for academic purposes has increased, not only in Taxation but many other subjects as well. The ability to free itself from time and space, as well as being more convenient and flexible, are but some of the advantages of this type of learning

Even though e-learning in South Africa is in its early stages, it is expected to grow significantly, owing primarily to the elimination of previous inhibiting factors like the non-availability of broadband/ADSL, unsatisfactory internet speeds, the lack of essential hardware, limited network access and poor web technology. It is therefore important for educators and course designers in South Africa to become familiar with the current issues facing e-learning and the possible solutions to these issues.

In this study, a literature review critically analysing electronic methods as a means of delivering instruction on Taxation in South Africa was performed. The major issues currently facing the e-learning environment were identified, along with the possible solutions to these issues.

Keywords:

E-learning

Flexible learning

Distance learning

Asynchronous learning

(OPSOMMING/SAMEVATTING)

**‘N ANALISE VAN ELEKTRONIESE OPLEIDING TEN EINDE BELASTING
(ONDERRIG/ONTWIKKELING) TE BEWERKSTELLIG**

deur

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Die Internet en die Wereld Wye Web het ‘n radikale invloed op opvoedkunde en meer spesifiek, die lewering van onderrig (instruksies), gehad. Deur middel van hierdie hulpmiddels is daar alternatiewe metodes vir lewering van onderrig geskep.

Die gebruik van hierdie elektroniese opvoedkundige metodes vir die lewering van onderrig vir akademiese doeleindes het oor die afgelope paar jaar vermeerder, nie net vir transaksiedoeleindes nie, maar ook vir baie ander vakgebiede. Die vermoë om nie gebind te wees aan tyd en spasie nie, asook die gerief en aanpasbaarheid van die medium, is slegs ‘n paar voordele van hierdie wyse van onderrig.

Elektroniese onderrig word in Suid-Afrika beskou om in die begin stadium te wees, maar daar is verwagtinge van uitsonderlike groei aangesien vorige beperkinge soos broadband/ADSL beskikbaarheid, Internet spoed, vereiste hardeware, netwerktoeganklikheid en swak webtegnologie nou begin afneem. Dus is dit belangrik vir opvoeders en kursusbeplanners in Suid-Afrika om hulself te vereenselwig met die huidige probleme wat elektroniese onderrig in die gesig staar, asook die moontlike oplossings vir hierdie probleme.

In hierdie literatuurstudie is daar , wat ‘n analise aangaande die elektroniese metodes as ‘n wyse van onderrig in belasting in Suid-Afrika gedoen het. Die groot struikelblokke asook moontlike oplossings wat die elektroniese onderrig tans in die gesig staar, is geïdentifiseer.

Sleutel woorde:

E-onderrig

Inskiklike onderrig

Distance learning / Afstandsonderrig

Asynchronous learning/ Asinkroon onderrig

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CHAPTER ONE

INTRODUCTION AND PROBLEM STATEMENT

1.1 BACKGROUND

The arrival of the Internet and the World Wide Web (WWW) has had a radical impact on education, in particular the delivery of education (instruction). Through these channels, alternative modes of instruction have been created, radically changing the face of instruction delivery (Macdonald, Stodel, Farres, Breithaupt & Gabriel, 2001:10). This has been noted by many authors maintaining the following:

- Lam (2009:323) described web-based learning has becoming increasingly prevalent and significant;
- Jones, Moeeni & Ruby (2005:265) indicated that the use of traditional instructor-led teaching...is being replaced by internet delivered courses;
- Priluck (2004:161) indicated that courses via the internet or through interactive video is becoming an increasingly popular method for educating students;
- Friday, Friday-Shroud, Green & Hill (2006:66) indicated that web-based classes are gaining popularity in business schools as a viable form of course delivery;
- Gregory (2003:426) indicated that web based distance education is fast becoming one of the preferred norms for teaching; and

- Jakovljevic (2009:255) maintained that the rise of e-learning technologies was evident in education all over the world.

The ability to be free of time (it can be accessed at any time) and space (can be used from any location as long as the required hardware, software and, if required, internet access is available) as well as providing a more flexible learning environment are but some of the advantages of this sort of learning (Jakovljevic, 2009:255; Cooper, in Jones *et al*, 2005:266). South Africa, however, has only recently started to embrace these electronic-learning methods, with electronic-learning (e-learning) currently only in the form of “online text, email communication and posted course assignments as well as chat” currently in existence (Jakovljevic, 2009:255). Dagada and Jakovljevic (2004:202) described the e-learning environment in South Africa as still being in its “early stages”. However, as has been shown internationally, the trend to establish a successful e-learning environment in South Africa is expected to continue (Jakovljevic, 2009:255). Inhibiting factors to do with broadband/ADSL availability, required hardware, internet speeds, network access, and advances in web technology (Chiu & Wang, 2008:194) are now falling away (Engelbrecht, 2003a:[7]). In fact, currently in South Africa, computer-based training is regarded as a viable approach to education (Dagada & Jakovljevic, 2004:202). Corporate South Africa has also followed suit (Dagada & Jakovljevic, 2010:112), and Dunbar (2004:323) states that many accounting firms now provide some form of online education. Some universities are even going as far as rewarding academics for developing these alternative instructional delivery methods (Jones *et al*, 2005:265).

E-learning comprises all forms of electronically supported learning and teaching. It is therefore essentially the transfer of knowledge via computer and network infrastructures. The applications and processes that enable this transfer vary and usually include, but are not limited to, web-based learning, computer-based learning, virtual classrooms and digital collaborations. The methods by which content is delivered via these media also vary and include the internet,

intranet/extranet, audit or video tape recordings, satellite TV and CD/DVD ROM. The information transfer can either be self-paced or instructor-led via a variety of media, such as text, image, animation, streaming video and audio. E-learning is based on three fundamental criteria, namely:

- “[i]t is networked. This makes it capable of instantaneous updating, storage, recovery and sharing of information;
- using internet technology, it is delivered, via a computer to an end user; and
- [i]t focuses on the broadest view of learning, that is learning methods that go beyond traditional instruction delivery methods” (Rosenberg, in Engelbrecht, 2003a:[1]).

During the past couple of years many different terms have become commonly associated with these sorts of delivery mechanisms. Some of these terms include online learning, internet-based learning and asynchronous learning (although electronic media can be used to deliver synchronous learning as well), web-based learning and computer-based learning (Jones *et al*, 2005:265).

In contrast, traditional delivery methods are usually referred to as instructor-led learning (face-to-face interaction) or synchronous learning. This form of learning, as the name suggests, is usually conducted by an instructor with some sort of slide presentation and discussion. As both the students and the instructor are present at the time of the knowledge transfer, this sort of learning is referred to as synchronous (Jones *et al*, 2005:266), that is, the learning and the delivery take place at the same time.

The major characteristic of electronic methods of learning is that control over the learning process is transferred to the student rather than the instructor, as is the case in the more traditional methods of delivery, thereby becoming more student-centred (Jones *et al*, 2005:265; Bento, Brownstein & Kemery, 2005:80). Electronic delivery methods can be used for basic functions like making

information available and for more advanced uses, such as offering entire courses and degrees (Yin-Sum & Tak-Wing, 2002:23).

There are numerous types of electronic-learning methods:

- **podcasting:** podcasting involves making digital media files accessible over the internet via channels like downloading or streaming;
- **smartboards:** interactive whiteboards aimed at improving the visual experience of e-learning;
- **blogs:** usually a website or part thereof which maintains commentary, description of events and at other times line-related matters aimed at improving interaction during e-learning;
- **'wikis':** a wiki is a website that allows for the easy creation and editing of any number of interlinked web pages via a web browser using simplified mark-up language and other similar editors; and
- **message boards:** an online discussion site.

Tax education itself has a long history of innovation and is no different from other forms of information delivery (Meade, 2002:130). Many taxation courses in South Africa already use some form of electronic means to deliver information. Even though South African universities are coming to accept the idea of using e-learning to support distance education, this has been largely in the form of online text, e-mail communication and posted course assignments and has been for the most part restricted to distance learning and post-graduate courses like Masters degrees ((Engelbrecht, 2005:219; Jakovljevic, 2009:255). However, even though the use of electronic means for delivering instruction is gathering increasing momentum, to date very little research has been carried out in this field in South Africa (Dagada & Jakovljevic, 2010:113). For this reason, and to assist academics in South Africa in developing future courses incorporating electronic-learning techniques, and providing a source of material for future studies, this study critically analyses existing literature on electronic-learning methods. Based on that analysis, it identifies and discusses the major issues that must be

addressed when adopting electronic methods for tax education in South Africa. The possible solutions are also identified and discussed according to the analysis of the literature.

The conception framework as identified in the literature review is to identify the:

- advantages that electronic-learning methods can offer;
- problems/drawbacks of using electronic learning methods;
- effectiveness of electronic-learning methods as compared with traditional forms of instruction delivery like face-to-face interaction; and
- major issues in electronic-learning and the possible solutions to these issues.

The use of a combination of electronic learning and traditional methods of delivery was also analysed.

1.2 PROBLEM STATEMENT / CORE RESEARCH QUESTION

The main purpose of this study is to analyse electronic learning methods as a possible means for tax education in South Africa (i.e. can electronic learning be used as a means of tax education in South Africa). The e-learning environment in South Africa is currently in its early stages however there is a tendency to establish an effective e-learning environment in South Africa (Dagada & Jakovljevic, 2004:202; Jakovljevic, 2009:255). This study will there consider the major issues in e-learning and the possible solutions to these issues.

1.3 RESEARCH OBJECTIVES / SPECIFIC RESEARCH QUESTIONS

The objectives of this study are:

- to analyse the literature on electronic learning in order to establish the theoretical basis for the study; and
- to analyse the use of electronic-learning as a means for tax education in South Africa, using the theoretical basis as an underpin by identifying the disadvantages, differences and issues in electronic-learning in comparison with traditional methods of learning, as well as offering some solutions (as suggested by other authors) to these issues.

1.4 IMPORTANCE AND BENEFITS OF THE PROPOSED STUDY

Dagada and Jakovljevic (2004:202) described the e-learning environment in South Africa as being still in its “early stages”. However, there is now a “general tendency to establish an effective e-learning environment in South African universities” (Jakovljevic, 2009:255). Universities are themselves under increasing pressure to produce alternative delivery mechanisms for knowledge, such as internet-based learning (Bryant, Campbell & Kerr, 2003:41). However, international experience has shown that numerous issues have to be addressed in e-learning if it is to be successful. This study identifies these issues and discusses possible solutions for them. Course developers and academics could use this study as a source of reference when trying to develop electronic learning courses to satisfy demands in South Africa. By considering and incorporating the issues identified and the possible solutions when designing e-learning courses, instructors and instructional designers could increase the effectiveness and satisfaction of the e-learning environment. Future researchers could also use this study as a source of reference. According to Jost and Schneberger (in Engelbrecht, 2003a:[5]) one of the major reasons for e-learning not being adopted is that research on the effectiveness and efficiency of e-learning is

“confusing and conflicting and fails to take advantage of research in other fields”. This study will go a long way to alleviating this problem.

There is currently very little research being carried out on this topic in the South African context (Jakovljevic, 2009:256). Jakovljevic (2009: 256) maintains further that there is little research on “appropriate instructional strategies” that could address various facets of e-learning like the “motivational, emotional and cognitive” aspects as well as dealing with the shift to a more student-centred learning environment and consequently the reduced physical presence of the instructor.

1.5 DELIMITATIONS AND ASSUMPTIONS

1.5.1 Delimitations

The delimitations of the study are as follows:

- all the conclusions were arrived at by analysing the existing secondary literature on the topic. No empirical testing was done;
- the study is an analysis of the use of electronic-learning methods as a means of taxation education (i.e. a change in the learning environment of tax instruction delivery from the traditional face-to-face interaction to an electronic method), and therefore does not analyse the specific electronic methods themselves;
- this analysis was based on the use of electronic instructional delivery methods in other fields of study rather than just taxation. It was not within the scope of the study to adapt these other studies and the conclusions reached to a taxation environment;
- it is assumed that the conclusions reached in the studies analysed are adaptable to the tax learning environment; and
- the solutions given are applicable to e-learning courses in general and have not been adapted to specific types of e-learning courses.

1.5.2 Assumptions

Even though many of the studies examined were not conducted in the South African learning environment, it is assumed their findings are applicable equally to it.

1.6 DESCRIPTION OF THE OVERALL RESEARCH DESIGN

A literature review critically analysing electronic teaching methods is conducted. The objective of this study is to critically analyse the secondary literature on electronic teaching methods to establish the theoretical basis for the study. The theoretical basis constructed is then to be used to critically analyse the different electronic teaching methods from the point of view of South African tax education.

Based on a review of leading electronic journals such as EBSCOHost, Emerald, Google Scholar, Proquest and Science Direct and other academic sources, the relevant secondary literature on e-learning, based on which the critical analysis is to take place, is identified. Accordingly, a conceptual framework within which the findings of this study can be discussed is then constructed. This conceptual framework is used to critically analyse the use of electronic methods as a means of taxation education. Based on the findings the relevant conclusions are drawn and discussed, using the conceptual framework. Finally the recommendations are presented.

In addition to the electronic journals listed above, other academic literature, including journals and other media like articles, books and conference papers, is also reviewed.

1.7 DEFINITION OF KEY TERMS

Table 1: Abbreviations used in this document

Abbreviation	Meaning
E-learning	Electronic learning
SA	South Africa
ICT	Information and communication technology
ADSL	Asymmetric digital subscriber line
WWW	World wide web

Table 2: Definitions

Word	Meaning
Asynchronous learning	A student-centred teaching method that uses online learning resources to facilitate information sharing outside the constraints of time and space among a network of people (Mayadas, 1997:2).
Synchronous learning	Synchronous means “existing or occurring at the same time.” (Oxforddictionaries.com, not dated). Synchronous learning will therefore refer to a group of people learning the same thing at the same time.
Electronic learning (e-learning)	Comprises all forms of electronically supported learning and teaching. Engelbrecht (2005:218) defines it as “the use of electronic media (the internet, DVD, CD-ROM, videotapes, television, cell phones, etc) for teaching and learning at a distance”.
Learning styles	Various approaches or ways of learning. Dag and Gecer (2009:862) define it as “learning ways or preferences which are used to learn or remember” any new knowledge acquired by the learner.
Blended learning	Refers to the practice of mixing different learning environments
Flexible learning	“Offering choices in the learning environment so that a course of study better meets the individual needs of



	students” (Bryant, Campbell & Kerr, 2003:41).
Distance learning	A method of studying in terms of which the transfer of knowledge occurs via correspondence without the learner having to be physically present. (Oxforddictionaries.com, Not dated)
Learner-learner interaction	Refers to communication among students in a class (Arbaugh & Benbunan-Fich, 2007:855).
Learner-Instructor Interaction	“Measures the level of involvement of the instructor with the students and the extent to which they experience the proximity of the instructor through his/her online presence” (Arbaugh & Benbunan-Fich, 2007:855).
Learner-content	The “interaction between the learner and the material to be learned” (Arbaugh & Benbunan-Fich, 2007:855).
Instructional technology	“...is a design field in which people endeavour to increase the effectiveness of instruction and learning through the integration of pedagogy and technology” (Woo & Reeves, 2007:15).
Instructional designers	The practitioners within the Instructional technology field (Woo & Reeves, 2007:15).
Face-to-face interaction	Learning in terms of which the instructor and learner are physically located in the same location.
Active learner	A learner who aggressively seeks and absorbs knowledge to achieve the objectives and competencies identified in the course (Spiceland & Hawkins, 2002:69).
Broadband	“Transmission over a network in which more than one signal is carried at a time” (Tsolo, 2006:44).
Podcasting	Involves using channels such as downloading or streaming to make digital files available over the internet. (Oxforddictionaries.com, Not dated)
Blog	The recording of an individual’s opinions and events on a regular basis on a personal website or web page. (Oxforddictionaries.com, Not dated)

Wiki	A database or website which allows users to add or edit content which was originally developed collaboratively by a community of users. (Oxforddictionaries.com, Not dated)

1.8 BRIEF OVERVIEW OF THE CHAPTERS

In the next chapter (Chapter Two) the relevant literature on e-learning is analysed with a view to constructing a conceptual framework within which the findings of this study will be discussed. First the advantages and disadvantages of using e-learning are looked at, followed by an analysis of the effectiveness of e-learning in comparison with traditional forms of instruction delivery like face-to-face interaction. Finally the major issues leading to the failure of e-learning as a method of instruction delivery and the possible solutions for these issues are analysed.

In Chapter Three, the extended literature review is conducted, based on the conceptual framework constructed above. The findings of this chapter will form the basis for the conclusion.

Finally, in Chapter Four, the findings of the previous chapters are discussed. Based on these findings, the conclusions are drawn. The recommendations for future research are also outlined here.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

Hart (in Jesson & Lacey, 2006:140) described an academic literature review as “[t]he selection of available documents...on [a] topic...and the effective evaluation of these documents in relation to the research being proposed”.

This chapter reviews the relevant literature on the topic with a view to constructing a conceptual framework within which the extended literature review is to be conducted and the findings discussed. Literature was identified mainly according to a review of the leading electronic journals, including EBSCOHost, Emerald, Google Scholar, Proquest and Science Direct. Other academic sources were also used.

Learning by electronic means has been available in some form or another for a long time now. As early as 1992, Jensen and Sadlin (1992:39) described “computer aided teaching/instruction”. However, it was only really considered a viable alternative to traditional forms of instructional delivery, such as face-to-face delivery methods, towards the latter part of the 20th century and the early 21st century since the availability of improved network access and improvements in the internet and web technologies (Bento *et al*, 2005:79; Chiu & Wang, 2008:194). This allowed improved interaction using methods like blogging and podcasting (Downes, 2005).

2.2 ADVANTAGES AND DISADVANTAGES OF E-LEARNING

When e-learning became recognised as a possible alternative source of instruction delivery, research efforts concentrated more on the advantages and disadvantages of e-learning. Jensen and Sadlin (1992:39) were some of the first

authors to write on this aspect of e-learning. Since then, however, contributions to this aspect of the area have increased considerably. The greatest advantage of e-learning is probably its convenience (Ponzurick, France & Logar, 2000:186). Lam (2009:323) described this as being free from the restriction of traditional classrooms, while Jakovljevic (2009:255) described it as being free from time and space. E-learning offers students the opportunity to study at their pace and in their own time (Priluck, 2004:161; Spiceland & Hawkins 2002:68, Lam, 2009:323). This allows students to manage their time better, particularly those who are in employment (Clark in Jones *et al*, 2005:266). Interaction and flexibility are also improved through the use of asynchronous and synchronous tools (Pituch & Lee, 2006:223). Further, e-learning is more flexible than traditional forms of learning (Sitzmann, Kraiger, Stewart & Wisher, 2006:625), which allows the learning process to be tailored to suit the learners' individual needs (Dagada & Jakovljevic, 2004:194). E-learning is often a cheaper alternative than traditional learning (Prilick, 2004:161; Freriks, 2004:30; Lam, 2009:329; Meade, 2009:130).

E-learning also has its pitfalls and disadvantages. One of the major problems faced by learners is that of adjusting to this new learning environment (Dunbar, 2004:342). E-learning is student-centred rather than instructor-centred, so it requires more self-discipline and responsibility, which is sometimes lacking. Interaction is also a problem, for example, because of delayed instructor feedback as well as limited social interaction (Lam, 2009:324; Engelbrecht, 2005:217; Bryant *et al*, 2003:43; Sitzmann *et al*, 2006:628). The lack of an instructor's physical presence has also been shown to have a negative effect on the learning process (Bento *et al*, 2005:80).

2.3 THE EFFECTIVENESS OF E-LEARNING

As e-learning started to gain in popularity, research efforts began to focus more on the effectiveness of e-learning, especially in comparison with the more traditional forms of learning like face-to-face interaction.

2.3.1 No difference

The general findings of studies comparing traditional forms of instructional delivery like face-to-face interaction with electronic forms are that there are no significant differences between the two methods (Dunbar, 2004:339; Lam, 2009:330; Yin-Sum & Tak-Wing, 2002:50; Priluck, 2004:170; Friday *et al*, 2006:75; Jones *et al*, 2005:270; Gagne & Shepherd, 2001:62; Swan & Jackman, 2000:61; Arbaugh, 2000:224). Jones *et al* (2005:270) compared actual performance (in terms of results achieved) between students in traditional face-to-face classes and those doing an e-learning equivalent. Friday *et al* (2006:75), however, analysed a multi (eight) semester data set for two undergraduates with an extended sample size. His testing also took into account gender differences. Lam (2009:330) analysed not only test scores but also ethnicity, gender, read rate, hit rate, evaluation method and communication method, using multiple regression models. Priluck (2004:166) used a survey analysis to ascertain student responses on satisfaction, confidence, skills development and perception of learning. Dunbar and Yin-Sum and Tak-Wing (2002:50), on the other hand, examined the actual development of an e-learning course.

The general conclusions of all these studies are that both can deliver instruction equally efficiently. This supports the general theory that e-learning is just as effective as traditional face-to-face interaction. Clark (1983:445) stated that media are mere “vehicles that deliver instruction” and that they do not influence students’ performances. Lavoie and Rosman (2007:105), however, indicated that successful education includes both good content (in the form of a thorough curriculum) as well as effective instructional delivery (in the form of “course design, delivery and evaluation”). Sitzmann *et al* (2006:654) found that instructional methods were more important than delivery media.

2.3.2 E-learning better than traditional methods

Other studies found that e-learning was more effective than face-to-face interaction. Bryant *et al* (2003:45) compared the performance achieved between the two sets of students and found that e-learning was better for concept tests (Bryant *et al*, 2003:47). Spiceland and Hawkins (2002:74) found that students gained new skills with the use of online courses in comparison with traditional face-to-face interaction. However, the authors used a 12-item survey instrument to determine students' perceptions of the e-learning course. Sitzmann *et al* (2006:646) found that e-learning was 6% more effective than traditional methods of instruction delivery for teaching declarative knowledge by performing meta-analytic procedures. Shachar and Neumann (2003:13) also performed a meta-analysis. They found that e-learning students academically outperformed traditional face-to face-students.

2.3.3 Traditional methods better than e-learning

Fewer studies found that traditional methods of instruction delivery were better than electronic methods (Lam, 2009:324). Sweeney and Ingram (2001:61) found that traditional methods of instruction delivery were more effective for tutorials, as they provided an opportunity for improved feedback and more direction from the tutor. They used a survey questionnaire to determine students' perceptions. Bryant *et al* (2003:47) found that traditional methods were marginally better for group projects. Gregory (2003:431) found that students perceived that if a real-time interaction element was included in the course offering, the quality of the educational experience improved.

Many studies analysing the differences in performance did so, as mentioned above, by analysing the results achieved (performance) between the two sets of students. This approach, however, does not take into account the level of students' computer knowledge (Bryant *et al*, 2003:48). This could significantly

affect the effectiveness of e-learning and the results achieved. Another possibly limiting factor in the methods used to conduct the above tests was the dynamics of each group (Bryant *et al*, 2003:48). The final performances may, for instance, be influenced by the intelligence of the different groups. Further, there are often variations between the way in which traditional and electronic courses are graded (Friday *et al*, 2006:76).

Over the years, both performance and satisfaction with online courses have begun to increase (Lam 2009:323). This can be attributed primarily to the increased exposure to electronic media in popular culture. The youth of today are more familiar with electronic means than before and are now more comfortable with using this mode of instruction delivery. According to Fu, Wu and Ho (2009:559), “[y]oung learners, who are not only computer-savvy but also enjoy unconventional means of learning, encounter few technical difficulties that keep them from engaging in e-learning”. According to Engelbrecht (2003a:[2]), people are becoming more comfortable with the internet as an everyday tool to obtain information. The increased use of online networking websites (such as Facebook and Twitter) has also increased interest in e-learning (Billhardt, 2010:21).

2.4 ISSUES IN E-LEARNING AND POSSIBLE SOLUTIONS

However, e-learning as an alternative instruction delivery method has failed to live up to the hype that existed in the days when it was gaining momentum as a feasible alternative to existing delivery methods, with many learners having unsatisfactory experiences with this form of learning (Engelbrecht, 2003a:[1]; Billhardt, 2010:21). Research efforts have since adapted to this by focusing on identifying the reasons for the failures and attempting to formulate ways of improving e-learning. After some high profile failures, which ended “with the ubiquitous devastation in the world’s high tech stock markets in 2000”, research in this area has recently intensified (Engelbrecht, 2003a:[2]). This area, while

probably the most critical in e-learning to date, has proved to be the most contentious, with many authors providing different reasons for the failures.

One of the major reasons for the failure of e-learning courses is the lack of interaction (Billhardt, 2010:21), the importance of which has been discussed in many studies (Arbaugh & Benbunan-Fich, 2007:862; Woo & Reeves, 2007:15). Liaw, Huang and Chen (2007:1078) also found that student satisfaction improves with increased interaction. Being student-centred, the lack of face-to-face interaction reduces student participation and satisfaction (Bento *et al*, 2005:80). Woo and Reeves (2007:16) warn, however, that not all interaction leads to improved and increased learning. Only learner-content and learner-instructor interaction was found to be effective in increasing performance and satisfaction (Arbaugh & Benbunan-Fich, 2007:862). Vrasidas and Mclsaac (1999:33) state however that learner-learner interaction is also important. Woo and Reeves (2007:16), on the other hand, indicate that there is still no theoretical foundation for determining what constitutes good interaction. Synchronous forms of communication, such as discussion forums, were found to be a good way of increasing interaction (Benko *et al*, 2005:79). Including interactive video in the learning environment was also found to improve interaction, provided that learners had control over random access to video content (Zhang, Zhou, Briggs & Nunamaker Jr, 2006:24). Rosenberg (in Engelbrecht, 2003a:[5]) maintained, however, that the use of media such as video and audio had not been widely adopted for the following reasons:

- development costs were high;
- most of the audio and video instructions were mere recordings of traditional classroom interaction scenarios;
- most of these instructions were “boring to watch”, as they were devoid of any form of instructional design;
- instructors did not know how to integrate these forms of instruction into the learning activity; and
- there was a clear sign that interactivity was lacking.

Another common reason for the failure of e-learning programs is that they are not designed properly (Frelik, 2004:32). Bhowmick, Khasawneh, Bowling, Gramopadhye and Melloy (2007:627) suggest that the key to a good design is choosing the appropriate multimedia for the course. Cao, Griffin and Bai (2009:332) found that incorporating synchronous tools into the e-learning course also proved very successful.

Having well-designed e-learning systems, however, does not guarantee success. Chiu, Sun, Sun and Ju (2007:1225) stated that issues of value and fairness must also be incorporated into the e-learning course. Failure to do so could affect student participation. Student participation, particularly getting students to adopt the student-centred learning environment, is also regarded as a major stumbling block (Bento *et al*, 2005:79). Bento *et al* (2005:79) proposed a taxonomy for classifying different types of participation in online courses. This could be used to identify and correct students who are not participating adequately.

Other methods for improving e-learning include improving faculty participation (Blignaut & Trollip, 2003:152) as well as increasing student satisfaction (Sun, Tsai, Finger, Chen & Yeh, 2008:1196; Bento *et al*, 2005:79).

2.5 FRAMEWORK

Going on the studies discussed, the following framework is to be used for conducting the study:

- advantages that electronic learning methods could offer;
- problems/drawbacks in using electronic learning methods;
- effectiveness of electronic learning methods as compared with traditional forms of instruction delivery, such as face-to-face interaction; and

- major issues regarding electronic learning and the possible solutions.

2.6 CONCLUSION

The purpose of this chapter was to critically analyse the literature identified and, based on this analysis, construct a conceptual framework upon which the extended literature review can be conducted and the findings of the study discussed. The framework was outlined above in section 2.5.

CHAPTER THREE

EXTENDED LITERATURE REVIEW

3.1 INTRODUCTION

In this chapter we analyse the use of e-learning as a means of tax education in South Africa. The findings of this chapter form the basis for the conclusion.

First the advantages and disadvantages of using e-learning and how these relate to tax learning are discussed. Thereafter, the effectiveness of e-learning is compared with traditional learning, such as face-to-face interaction. The issues currently facing e-learning are then identified and discussed. Finally the possible solutions for the issues in e-learning, as well as the differences and disadvantages discussed above, are identified and discussed.

3.2 ADVANTAGES OF ELECTRONIC LEARNING METHODS

Using e-learning methods and techniques offers numerous advantages over traditional methods of learning such as instructor-led delivery mechanisms. The foremost of these is the convenience offered by electronic learning methods (Ponzurick *et al*, 2000:186). Lam (2009:323) indicated that e-learning has no classroom restrictions, as it is free of time and place restrictions (Jakovljevic, 2009:255). E-learning offers students the opportunity to study at their own pace and in their own time (Spiceland & Hawkins, 2002:68; Lam, 2009:323). This is especially relevant for students who are not studying full-time or who are studying via distance learning, as well as students who cannot commute to campuses on a regular basis. Ponzurick *et al* (2000:186) maintain that many students prefer distance learning courses because of their convenience, even though they found a lower level of satisfaction. Bryant *et al* (2003:41) found that by permitting students to work at their own pace and in their preferred manner,

students' comfort-levels were increased, while stress and anxiety levels were simultaneously lowered. Cooper (in Jones *et al*, 2005:266) also found that the primary reason students registered for an internet-based course was their convenience and flexibility. This was echoed by other authors. Dunbar (2004:322) indicated the availability factor as a major advantage. Technology allows information to be more widely accessible (Meade, 2002:130). Unlike instructor-led delivery mechanisms, which are available only at certain times, e-learning can be accessed at any time. Control in e-learning is transferred to the students (Lam, 2009:323; Bryant *et al*, 2003:41). Lam (2009:323) indicates that, as a result, students can spend as much time as they require on the relevant topics, as opposed to being bound by the pace of an instructor. Students can also revisit topics at a later date if necessary. Cooper (in Jones *et al*, 2005:266) found that students in an internet-based learning environment were better able to manage their time between work and studying and also enjoyed being able to learn in this self-directed way.

The interactive nature of e-learning can, if used correctly, also lead to numerous benefits, such as guidance from instructors in online communication tools like emails and chat (Hong, Lai & Holton, in Woo & Reeves, 2007:20). Students can also use these communication tools for interacting with each other to discuss modules, learn and seek solutions to problems encountered and deal with other course-related matters. As instruction delivery via e-learning can be both asynchronous (e-mails, for example) and synchronous (video conferencing, for example), e-learning allows interaction to break the boundaries of time and space (Pituch & Lee, 2006:223). Bryant *et al* (2003:42) indicated that internet-based learning can provide “opportunities for interaction and negotiation amongst learners by supporting real time interaction”. Prulick (2004:161) also included interactivity through virtual learning environments as an advantage.

E-learning is generally a cheaper alternative, especially under conditions of budgetary constraints and staff shortages (Lam, 2009:329). Technology has

made information-sharing relatively inexpensive (Meade, 2009:130). Lam (2009:329) also indicated that e-learning is more suitable for technical subjects (such as taxation) that have a high concentration of procedural knowledge, as these can be “modularised, organised and documented” into written materials.

Sweeney and Ingram (2001:62) conducted a study investigating students’ perceptions of different modes of tutorials that supplement rather than replace traditional face-to-face lectures. Overall, they found that the benefits of web-based tutorials, as perceived by students and the tutor, were the following:

- they were innovative;
- the most enjoyable approach was the chat room;
- the bulletin board allowed students more time to reflect on and discuss deeper issues;
- the overall environment was made more equitable and more comfortable for the learners;
- learners took more responsibility for their opinions;
- their learning approach was more student-centred; and
- students are out of their comfort zone, the politeness, structure and formality of face-to-face tutorials are removed, encouraging more direct, in-depth and critical responses.

Zang, Zhou and Briggs (2006:15) examined the influence of interactive video specifically on learning outcomes and learner satisfaction in e-learning environments. They summarised these benefits as follows:

- provides time and location flexibility;
- results in cost savings for educational institutions;
- fosters self-directed and self-paced learning by enabling learner-centred activities;
- creates a collaborative learning environment by linking each learner with physically dispersed experts and peers;
- allows unlimited access to electronic learning material; and

- allows knowledge to be updated and maintained in a more timely and efficient manner.

E-learning represents a “non linear instructional medium that may encourage deeper processing and cognitive flexibility in learners by allowing trainees to more effectively integrate new information with existing knowledge” (Sitzmann *et al*, 2006:625). There are various e-learning techniques that may be employed as a delivery method, such as audio, graphic, synchronous and asynchronous tools (Sitzmann *et al*, 2006:625). These methods can be tailored by the students to meet their individual needs.

Sitzmann *et al* (2006:628) also maintain that e-learning can be employed to provide “just in time” training to meet specific job requirements, and can be modified to meet the particular needs of the learners, such as existing knowledge on the subject and specific requirements of the job, thereby providing both pedagogical and strategic advantages.

As mentioned above, the domain of taxation education is an ever-changing one. In South Africa, the legislation governing taxation changes regularly, with a revenue amendment bill being released annually. Interpretations of sections in the legislation are also established/changed on a regular basis with case rulings occurring throughout the year. Electronic learning methods present an ideal way to keep students abreast of all such change, as well as providing a medium for them to test their newfound knowledge via the use of online tests. Students can also use online forums to discuss amendments and interpretations.

Being student-centred, e-learning offers learners the chance to become more involved in the learning process, thereby allowing modules to be constructed to suit the various learning styles of students (Dagada & Jakovljevic, 2004:194). This also allows the students to control the pace and time of learning (Engelbrecht, 2003a:[7]). This freedom to modify learning styles could prove

beneficial to learners, such as dyslexic learners, who are unable to learn effectively when using traditional face-to-face instruction delivery methods (Van Hoorebeek, 2009:237). In these instances, e-learning could be used to deliver instructions using a medium or method that is better suited to the learner.

Students and instructors are not the only ones to benefit from e-learning. Corporate enterprises and academic institutions could also profit from such ventures (Engelbrecht, 2003b:39). Engelbrecht (2003b:39) identified the following advantages to implementing e-learning:

- the quality of educational or training programs could be increased, consequently increasing the quality of employees/graduates;
- access to learning opportunities could be improved; and
- the total cost of education could be reduced.

As world economies continue to stumble out of the biggest recession in recent times, cost considerations have become all the more important. E-learning enables organisations to reduce the total cost while simultaneously increasing the efficiency of training (Chiu & Wang, 2008:194). This is especially true in the corporate environment, where training sessions can be delivered to any number of employees over multiple locations, free of the time and space restrictions inherent in the more traditional face-to-face interactions, thus increasing the availability of training (Chiu & Wang, 2008:194). E-learning has also been found to produce less conflict with work than other forms of learning (Dutton, Dutton & Perry, 2002; Chiu & Wang, 2008:195). This results indirectly in savings to the company.

Spiceland and Hawkins (2002: 69) stated that, since accounting information is constantly changing, accountants need to adopt new, more active methods of learning, such as those offered by the internet. Tax education is similar to accounting education, in that the learning environment and material are

constantly changing. Active methods like e-learning can be used to help tax accountants to constantly update themselves with all these changes.

The advantages of electronic learning methods can therefore be summarised as follows:

- eliminates the barriers of time and space;
- more convenient;
- more flexible;
- student-centred;
- can be more cost effective; and
- is always available.

3.3 DISADVANTAGES/DRAWBACKS OF ELECTRONIC LEARNING METHODS

There is no doubt that the use of e-learning techniques as a medium for delivering instruction is growing, but the major question is whether or not this form of instruction is so effective as to warrant appraisal by academics and course developers as a viable alternative to traditional forms of information/instruction delivery. In the previous section the advantages of e-learning were considered. However, e-learning is not without its drawbacks and many of these have been experienced over the years. The next section analyses research in this area. It is important to identify disadvantages so that instructors and instructional designers of tax courses can respond adequately to them and thus improve the overall e-learning environment.

Dunbar (2004:342) conducted a descriptive and evaluative analysis of the transformation of a face-to-face graduate tax accounting course into an online course. A description of the required technology tools and class conduct was provided in the paper. The students used combinations of asynchronous and synchronous learning methods, which allowed them to complete the coursework

according to a self-determined schedule, subject to semi-weekly quizzes. One of the major problems they experienced with the online course was adjusting to this new learning environment and style. Another important drawback was the fact that interaction with the instructor was severely hampered in this sort of delivery. Interaction is created by using non-traditional means, such as e-mail, telephone or chat, which demand greater efficiency than that of face-to-face interaction. Overall, it was found that students found a lower level of satisfaction with this delivery method. (Dunbar, 2004:342.)

E-learning transfers control over the learning to the students, but this requires self-discipline (Lam, 2009:324), which students, especially the younger ones who are not yet sufficiently mature, often lack. Getting students to take responsibility poses a considerable risk (Engelbrecht, 2005:217). This point especially should be considered very carefully in the decision to use e-learning as a substitute for instructor-led (traditional) delivery methods. Because of their familiarity with this method of instruction, many students might resort to traditional methods of learning.

During electronic learning, control over the learning process is transferred to the student. As a result of this transfer of power, instructors lose control, and their voice becomes one of many. Consequently that voice may not be remembered or even heard in the first place significantly reducing the effectiveness of the learning. (McGrath, in Sweeney & Ingram, 2001:56.)

While e-learning can make learning more accessible and flexible, the possible trade-off of decreased student learning and retention should be considered (Jones *et al*, 2005:265). The learning environment is rendered more complicated, seeing that instructional delivery is done over the web (Sun *et al*, 2008: 1196). Student learning and satisfaction could decrease as a result of the student being unfamiliar with this sort of delivery mechanism or because of the lack of instructor-control over the learning process. Student retention could decrease as

a result of decreased levels of motivation, particularly as students often tend to feel alone during e-learning, unlike with traditional methods, whereby students are surrounded by others with whom learning and experiences can be shared.

Van Hoorebeek (2009:236) also indicates that the length of time it takes to create an e-learning course might be a potential disadvantage. This, combined with the high cost of failure, does provide a deterrent to creating e-learning programs.

Other more common disadvantages include limited or slow access to the internet as well as limited bandwidth availability, a problem which is particularly prevalent in South Africa, and is one of the primary contributors to the stifled growth of e-learning in the country (Engelbrecht, 2003a:[7]). There are often delays in communication by instructors to students, which tends to increase the latter's frustration levels and decrease their satisfaction, which ultimately leads to a less satisfactory learning experience (Cooper, in Jones *et al*, 2005:266). Bryant *et al* (2003:43) also noted that problems with feedback from instructors are a potential disadvantage. Hiltz (in Jones *et al*, 2005:266) also indicated that the physical absence of the instructor may decrease student motivation, leading in turn to decreased student involvement in the course. Bento *et al* (2005:80) indicate that some students may decrease the frequency and quality of their participation without the physical presence which is inherent in real time interaction in a classroom. The limited social interaction on the whole, as characterised in most internet-based courses, may limit learning and the transfer of knowledge (Bryant *et al*, 2003:43; Sitzmann *et al*, 2006:628). This in turn may also reduce participation. Students tend to feel isolated, increasing the dropout rate, as they are unable to learn on their own (Priluck 2004:161). Hwang, Wang and Sharples (2007:681) indicate that the difficulty experienced by students in annotating online materials might be a potential problem.

Discussing assignments becomes difficult, and many students find it problematic to discuss these electronically (Abraham, 2002:129). Jakovljevic (2009:255)

indicated that students using e-learning experience high anxiety levels, because they cannot physically see the faces of their teachers to ascertain whether they are actually achieving their expectations.

The disadvantages can be summarised as follows:

- adjusting from an instructor-centred learning environment to a student-centred learning environment;
- lack of/reduced interaction with the instructor;
- higher levels of self-discipline required;
- reduced student motivation; and
- reduced social interaction.

3.4 COMPARISON OF TRADITIONAL METHODS OF DELIVERY WITH ELECTRONIC METHODS

There is no doubt that the use of e-learning methods is increasing rapidly. But a major question remains: How effective are these techniques as a delivery mechanism for the transfer of knowledge, especially in comparison with traditional forms of instruction delivery such as face-to-face interaction?

The effectiveness of e-learning as a delivery mechanism as opposed to traditional methods of instruction delivery will now be determined. The findings could reassure instructors and learners alike as to the effectiveness of e-learning. The differences between e-learning and face-to-face instructional methods are also identified. Switching from a traditional face-to-face instruction delivery method to the e-learning method can be quite daunting. It is therefore important for instructors and instructional designers to identify these differences and make adequate provision for them, so that students can easily adapt to an electronic learning environment. Students themselves must be made aware of these differences and respond to them.

Jones *et al* (2005:270) used the examination results achieved to compare the effectiveness of web-based content delivery with instructor-led learning. Students were unaware of the difference in the delivery method at the time of registration. Identical pre- and post-tests were used to make the comparison between the students, and a statistical analysis was formed. No significant differences between the two methods as a form of delivery were found.

Studies (such as the one conducted by Jones *et al*) aimed at carrying out a comparison of the effectiveness of alternative methods of course delivery, particularly comparing electronic learning methods with traditional methods like instructor-led courses, have been numerous. Most of these studies conclude that e-learning is no more effective than traditional methods (Dunbar, 2004:339; Lam, 2009:330; Yin-Sum & Tak-Wing, 2002:50; Priluck, 2004:170; Friday *et al*, 2006:75; Jones *et al*, 2005:270; Gagne & Shepherd, 2001:62). Both courses can deliver knowledge equally efficiently.

There are, however, studies indicating that electronic courses could be a better alternative. Bryant *et al* (2003:47) indicated that e-learning was more effective for concept tests. Spiceland and Hawkins (2002:68) explored the impact of learning in asynchronous internet courses compared with learning in a traditional classroom setting. The study specifically compared the effectiveness of an active learning, asynchronous internet course relative to that of a traditional classroom-based course as perceived by the students. The students indicated that the use of the online course had helped them gain new skills as compared with the traditional classroom setting, and they displayed a positive attitude to learning online.

Sitzmann *et al* (2006:646) performed meta-analytic techniques to examine the effectiveness of web-based instruction in comparison with classroom instruction. Even though the research supports the general view that there is no significant difference between the effectiveness of internet-based learning techniques as

opposed to traditional methods, they did find that “web-based instruction”, as they described it, was 6% more effective than classroom instruction for declarative knowledge in terms of results achieved.

Even though the majority of studies found that there was no difference in effectiveness between these two delivery methods, many of them still preferred traditional methods of delivery (Priluck 2004:170). Priluck (2004:165) found that students felt that they could learn more through traditional methods. There were also studies indicating that the traditional methods were more effective than e-learning. Sweeney and Ingram (2001:61), for example, found that the traditional methods of delivering knowledge were regarded as more effective for tutorials.

According to Spiceland and Hawkins (2002:70), students’ reactions to online learning, as opposed to more traditional methods of content delivery, are influenced by a number of factors, such as “attitude towards technology, maturity and other demographic characteristics”. They found, for instance, that students with a stronger knowledge of online communications tend to have a more positive attitude towards online learning.

Another important question requiring attention is: What makes internet-based training or an electronic course effective? Clark (in Yin-Sum & Tak-Wing, 2002:24) suggests that the “design and delivery of online instruction rather than the medium itself” is what determines how effective an online course actually is. Yin-Sum and Tak-Wing (2002:50) suggested the following factors that contribute to the effectiveness of an online course:

- a web site that is student-orientated, with a good navigational system and sufficient guidance to support learning;
- using teaching materials that are of a sufficiently good quality. This should include suggested reading, student-centred activities and illustrative examples;

- the incorporation of activities that promote student/student, student/instructor and student/content interaction;
- effective communication between instructor and student; and
- the instructor should display a supportive and concerned attitude.

Bryant *et al* (2003:41) investigated the effectiveness of using a “technology-centric” flexible learning environment to teach a tertiary-level introductory information systems course. The learners taking part in the study were students enrolled in two similar courses, a group using traditional teaching and learning methods only and a group following a flexible learning approach with extensive use of web technology. However the course content, lecturer, textbook and assessment were all the same for both sets of learners. The results showed that the e-learning (technology-centric flexible learning) course provided an effective learning environment for students.

Egbert (in Bryant *et al*, 2003:42) found several strategies for providing an effective learning environment. These were:

- occasions for interaction between learners should be available;
- an authentic audience as well as opportunities to negotiate meaning should be available;
- real tasks should be created and used;
- exposure to and production of rich language should be promoted;
- opportunities to create ideas and thoughts should be offered to students;
- intentional cognition should be promoted;
- an atmosphere with the least stress and anxiety should be created; and
- a learner-centred classroom should be created.

The effectiveness of e-learning was compared with that of traditional forms of instruction delivery like face-to-face instruction. The aim of this research was:

- to identify whether e-learning is effective in comparison with traditional instruction delivery methods and would thereby satisfy academics, instructional designers, instructors and students; and
- to identify the differences between these two forms of instruction delivery so that instructors and instructional designers could adequately respond to them.

Considering the studies analysed, the majority of them indicate that there are no differences between the two forms of learning, the general conclusion being that the methods are merely “vehicles that deliver instruction” (Clark, 1983:445). This is a particularly important finding. Acknowledging that e-learning can be just as effective as traditional face-to-face delivery instruction, along with the statement by Yin-Sum and Tak-Wing (2002:50) that “it was encouraging to find that students in the online taxation course enjoyed web-based teaching and that they learned the course materials effectively”, could further increase the support for using electronic means as a method of instruction in South Africa.

Differences between traditional methods and e-learning methods as instructional delivery methods based on the secondary literature analysed above can be summarised as follows:

- in Internet-based learning, there is no regular interaction with an instructor (Jones *et al*, 2005:265);
- control over the learning process is transferred to the student rather than the instructor (student-centred); and
- internet-based learning tends to be more asynchronous, while traditional forms of instruction delivery tend to be more synchronous.

These findings need to be carefully considered by both instructors and instructional designers when designing their e-learning programs and there should be special provision for students to adapt to these changes. Failure to do so may see students unable to cope with this unfamiliar environment, which would lead to poor performances and reduced levels of satisfaction.

3.5 ISSUES WITH E-LEARNING AND REASONS FOR FAILURE

Even though the use of electronic learning techniques as a medium for content delivery has increased greatly in both usage and popularity over the past couple of years, it still has failed to achieve the success that was initially expected from it (Engelbrecht, 2003a:[1]). People's actual experience with e-learning was often unsatisfactory (Billhardt, 2010:21). This, coupled with the demise of for-profit online ventures, calls the future of online learning into question (Dunbar, 2004:322). The issues currently being faced in e-learning, and the reasons for its failure, in some cases that of stifled growth, are discussed in the following sections. It is important for instructors and instructional designers of e-learning tax courses to identify the reasons why e-learning courses have failed and to address the major issues currently facing e-learning when developing and delivering e-learning courses in taxation.

One of the major reasons for online courses not being effective is that they are not designed properly (Freriks, 2004:32). The success of an online course depends on the design and delivery of online instructions rather than on the instructional medium itself (Clark, in Yin-Sum & Tak Wing, 2002:24). Instead of taking advantage of the numerous internet-based learning methods available, such as podcasting and online forums, internet-based courses tend "to be an asynchronous version of the paper-based or power-point based content that they were trying to replace" (Freriks, 2004:32). Engelbrecht (2003a:[1]) states that not enough attention has been given to "learning objectives, good learning design, the management of e-learning events, the selection of the right technology or the adoption of e-learning".

Distance learning, which tends to rely heavily on internet-based (electronic) learning techniques for content delivery, itself has inherent limitations, such as high dropout rates because of students' inability to learn on their own or because

they feel isolated (Priluck, 2004:161). These inherent limitations are usually neither considered nor properly dealt with when using e-learning to deliver content. Another problem with distance-learning students, which has not been adequately addressed, is their lack of self-discipline (Freriks, 2004:32). As electronic learning is student-centred rather than instructor-led, responsibility for learning falls to the students, who are often not responsible or mature enough to take advantage of it. These problems could perhaps be attributed to the inability of many students to manage the change to an electronic learning environment (Dunbar, 2004:339). Dunbar (2004:342) also indicated that this was a problem for instructors as well.

A lack of interaction and communication could also lead to the failure of e-learning (Billhardt, 2010:21; Gagne & Shepherd, 2001:62). Park and Bonk (2007b:312) stated that student satisfaction with e-learning significantly decreased with asynchronous communication, as there were lags in feedback and questions. Angeli, Valanides and Bonk (2003:40) found that it was more difficult to maintain meaningful interaction in an e-learning environment than in traditional face-to-face interaction. Poor faculty participation or poorly-trained faculty members also result in inadequate interaction (Blignaut & Trollip, 2003:151).

Another reason for the failure of e-learning when it comes to content delivery is the lack of instructors with sufficient experience and training to either develop these online courses or administer them satisfactorily (Priluck, 2004:162; Lavole & Rosman, 2007:106). Academics often simply attempt to reproduce traditional content delivery in an online format (Freriks, 2004:32). Web-based courses should not be viewed as traditional courses available online but rather as an alternative delivery forum making use of the many internet-based learning methods currently available to deliver instructions in a more flexible manner (Engelbrecht, 2003a:[6]). Many instructors hailing from a traditional face-to-face background adopt the same methods employed there, when instructing in an e-

learning environment, not realising that these are two completely different learning environments, one instructor-centred and the other student-centred (Engelbrecht, 2003a:[3]). Faculty involvement in the e-learning environment is vital to the success of the e-learning environment (Dunbar, 2004:322). The success of e-learning ultimately depends on how well both learners and instructors adapt to this new learning environment (Engelbrecht, 2003a:[3]).

Jakovljevic (2009:258) identified “inadequate access to technical advice, lack of expertise and support” as factors stifling internet-based learning. He suggested that, if a “network of human resources” were to be available to assist the instructor, these problems could be overcome. Dagada and Jakovljevic (2005:115) maintained that a primary reason for the failure of e-learning courses in South Africa was the lack of human and infrastructural resources. While in certain cases adequate thought is given to how e-learning should be implemented, little attention is given to its consequences. Students often prefer traditional methods of teaching, which may decrease its effectiveness (Sweeney & Ingram, 2001:61).

Measuring the effectiveness of e-learning (as an investment decision) is not as easy as measuring return on investments (ROI) of other investments. Conventional ROI techniques do not really apply to training and instruction delivery (Freriks, 2004:30). This may be the reason why institutions are reluctant to implement e-learning strategies, especially given the high initial expenditure usually required.

The lack of personalisation of the e-learning environment is another major problem with many e-learning courses (Santally & Alain, 2006:31).

Based on the analysis of the secondary literature, the reasons for the failure of e-learning courses, along with the major issues currently being faced in the e-learning environment, can be summarised as follows:

- poor faculty involvement;
- poorly-designed and managed courses;
- academics have inadequate access to technical advice, expertise and support;
- inherent limitations of this sort of learning are not adequately addressed
 - limited social interaction;
 - poor motivation of students, who feel isolated;
 - low student retention owing to inability to learn on their own;
 - limited instructor-student interaction; and
 - lack of self-discipline;
- change from traditional to internet-based learning not adequately addressed;
- inadequate interaction with the instructor and the material for the e-learning course; and
- difficulties experienced in measuring the effectiveness of e-learning courses.

It would be important for tax instructors and instructional designers to identify these issues and adequately address them when constructing and delivering tax e-learning courses. Failure to do so could affect the performance and satisfaction of the students or even lead to the e-learning course failing altogether in effectiveness.

3.5.1 Issues to South Africa

Engelbrecht (2003a:[7]) identified the following major issues experienced by students in South Africa relating to e-learning:

- the overall cost of the course increased;
- limited/no access to computers and internet;
- performance of the networks were dependent on the information system providers;
- low speed connections; and

- other factors that inhibit the effectiveness of e-learning, such as poor computer skills, computer viruses and other technical problems.

Regarding the issues faced by instructors, Engelbrecht (2003a: [7]) identified the following:

- most instructors do not have the ability and expertise to create an e-learning course. They depend on the information and communication technology (ICT) staff and instructional designers to develop these courses;
- the courses developed by the ICT staff and instructional designers usually represent simply the conversion of the traditional face-to-face content into an electronic format;
- owing to the various components of e-learning (such as the increased communication channels and information resources), increased co-ordination is required when conducting an e-learning course;
- online communications could possibly be more demanding and time-intensive owing to the quick response times expected with these sorts of communication methods (such as e-mail and text messages);
- students may query the content of the course, as they have access to the internet (and may use it as a means of confirming its authenticity); and
- instructors would have to develop new teaching methods that were more appropriate for online learning environments. This could mean that they would have to change both the method of instruction delivery and the materials used.

As far as the issues to be faced by the academic institutions themselves are concerned, Engelbrecht (2003a:[7]) identified the following:

- the cost of implementing and operating the e-learning course;
- training costs to equip instructors with the necessary skills to effectively deliver instruction in this sort of environment; and
- allowing students access to the e-learning courses may also prove problematic.

Jakovljevic (2009:256) maintains that one of the biggest issues with e-learning in South Africa is that there is little research done regarding its effectiveness.

3.6 THE WAY FORWARD

There are considerable benefits to using e-learning techniques for delivering instruction in education. However, as indicated above, there have been numerous issues in such courses. This, coupled with the fact that growth in the use of this medium has been stifled in recent years, leaves e-learning at a crossroads of sorts. These issues reduce the effectiveness of e-learning, leaving instructors and instructional designers hesitant to implement e-learning as a means of delivering tax instruction in South Africa. In the next chapter, an analysis of the findings of the study on identifying the possible solutions to the issues identified in e-learning will be conducted. This could provide instructors and instructional designers with advice and suggestions on how to design effective e-learning environments for tax instruction delivery. The section is divided into two parts. In the first part, a review of studies that have suggested a way forward for e-learning will be set out. Then, for each of the problems and disadvantages identified in the previous sections, a suggested solution will be identified through the critical analysis of the secondary literature. A discussion of how the advantages of e-learning can be used to benefit instruction delivery is also conducted.

3.6.1 Review of studies suggesting possible solutions

It is important to note that, for an e-learning course to be successful, it cannot be simply a traditional course available online (Priluck, 2004:171). According to Priluck (2004:171), the syllabus ought to “clarify learning objectives and communicate clear expectations to students”. If this was in place, then learners would have a better understanding of the worth and demands of an e-learning course.

Priluck (2004:171) suggests the following:

- internet-based courses have a face-to-face component which should be used to integrate the concepts, using cases and examples that apply the content already learnt in the online portion of the course;
- oral communication skills can be developed during in-class sessions;
- to overcome the decreased face-to-face interaction that usually characterises e-learning, instructors should remain actively in contact with students, particularly those who do not seem to be participating in the course; and
- staff should get constant feedback on their performance so they can remain motivated.

Jakovljevic (2009:256-259) discussed and outlined a framework on e-learning issues (pedagogical and technological). This provided a basis for the creation of an online instructional program and according to the author, instructors should place more emphasis on certain e-learning issues, such as

- **current e-learning technologies:** in order for e-learning to be most effective, it is important to use the most up-to-date internet learning methods, such as podcasting. Podcasting means broadcasting mp3 files over the internet, which can reduce the time required for learning material that would otherwise have to be read. Lectures could be recorded and listened to at the student's convenience, providing an overall more flexible learning experience. Other technologies discussed by the author included Skype and wireless networks;
- **the role of learning theories:** Jakovljevic indicated that instructors had to be knowledgeable in the various theories of e-learning, such as the action theory and constructivism;
- **creating learning communities:** learning communities are online forums that promote discussions of various syllabus-related topics. This sort of interaction could potentially overcome the asynchronous hurdle which, as mentioned above, seems to be plaguing online learning;

- **use of extended human networks:** as mentioned above, one of the reasons for the failure of e-learning in the past was the dearth of instructors with the required technical skills and experience. If a human network of resources could be formed and made available to instructors, it would potentially overcome this stumbling block; and
- **designing e-learning material and managing information on the web:** often, as mentioned above, internet-based courses are merely an electronic version of the traditional instructor-led counterpart. Courses should be designed specifically for e-learning, incorporating all the various internet-based learning techniques.

Dagada and Jakovljevic (2005) attempted to determine the requirements for the successful implementation of computer-based training courses in the corporate education environment of a number of South African organisations. They identified a number of factors:

- dealing with change management ;
- integration of business and computer-based training strategies;
- availability of sufficient resources;
- bringing planning down to earth;
- focusing on strategic issues;
- sponsorship for the implementation;
- a stable and conducive environment;
- the implementation approach;
- using computer-based training strategies to gain competitive advantage; and
- a smooth process of implementation.

Spiceland and Hawkins (2002:70) suggest that the following need to be in place in order for an e-learning course to be effective:

- **interaction:** courses should be designed so that, regardless of the medium used, regular interaction between the instructor and student takes place;

- **active learning:** unlike traditional courses, internet-based learning is student-centred and requires a greater level of self-discipline from the students. Providing students with active learning such as in frequent tests and quizzes is a possible solution to overcoming this problem;
- **student perception:** students' reaction to online learning is greatly influenced by a variety of factors, such as "attitudes towards technology, maturity and other demographic characteristics". If students' are to be successful in these courses, there has to be careful attention to these considerations; and
- **learning outcomes:** owing to the absence of an instructor, students have to be shown the learning outcomes of the course so that they can judge whether or not they are attaining these goals.

Engelbrecht (2005:227) evaluated the implementation of an e-learning Masters course in Taxation at a South African University. Several recommendations were made to improve the course, such as

- **technology:** technology should be used to add value to the learning and not just because it is accessible. The use of online chat rooms should be avoided because of internet bandwidth issues like costs and speeds that are currently prevalent in South Africa. Regular contact from instructors via mediums such as emails and forums should be encouraged, especially to remind students of approaching deadlines as well acting as a source of motivation;
- **learning design:** the quality of online pedagogy should be assured by the use of educational technologists, instructional designers and subject matter experts. Activities used to encourage interactivity and online assessment strategies should be combined and designed to achieve the required learning outcomes. Instructors should have access to e-learning training, which should be supported by instructional designers. This training should focus on methodologies and communication skills in electronic environments;

- **flexibility:** each syllabus theme should be designed as an independent module, giving students more entry and exit options. These modules could be offered simultaneously; and
- **evaluation:** evaluating the e-learning module on a continuous basis would greatly improve its effectiveness and quality. This would also help maintain the students' interest in the course.

3.6.2 Solutions to issues identified

3.6.2.1 *Measuring the effectiveness*

Another common problem is that of measuring the effectiveness (of both the course itself as a means of delivering instruction and the return on investment of the e-learning course) of e-learning in comparison with traditional methods of knowledge transfer. This is of particular concern, as the initial expenditure required to invest in these sorts of techniques can be quite substantial. Mere performance comparisons may be misleading because learners may not be familiar with e-learning technology, which could disadvantage the delivery of instruction (Bryant *et al*, 2003:48). There should therefore be adequate provision for ensuring that learners are instructed on how to use the e-learning system correctly. Pituch and Lee (2004:239) found that student familiarity with the e-learning environment is an important consideration for the student entering the e-learning environment. To measure the return that an institution generates from e-learning courses, traditional methods of evaluation, such as return on investment, could not be used, as the return usually has no monetary value attached to it (benefits such as more knowledgeable staff, for instance, cannot be objectively assigned a monetary value).

Freriks (2004:30) suggests that a balanced scorecard technique be used to measure effectiveness in both these regards. This scorecard should have a number of metrics which could be objectively evaluated.

3.6.2.2 *Not designed properly*

For an e-learning course to be successful it would have to be designed properly. Instructional technology encompasses the design field in which individuals (instruction designers) attempt to increase the effectiveness of instruction and learning through integrating pedagogical and technological components (Woo & Reeves, 2007:15). Choosing the appropriate multimedia for instruction can be critical to success, particularly for complex procedural tasks (Bhowmick *et al*, 2007:627). They recommended the following guidelines for the design of e-learning courses:

- the use of a particular multimedia combination will not affect learning performances if the e-learning course is to be used for simple procedural tasks;
- the combination of either audio and synchronised text or audio, video and synchronised text is the best alternative for complex procedural tasks when learning performance is the criterion;
- a combination of audio, video and synchronised text is the best alternative (in terms of the time spent on the learning modules and the frequency of access of the modules) when resource utilisation is an issue for a learning system for complex procedural tasks; and
- the choice of multimedia combination will not affect the system resource (in terms of the amount of time spent viewing the modules or the module accessing the frequency) for simple procedural tasks.

Another interesting finding by Bhowmick *et al* (2007:627) regarding the design of e-learning programs was that the easy-to-use/user-friendly systems (in terms of satisfaction) did not yield the best results in terms of learner performance. Liaw *et al* (2007:1079) found four guidelines that should be considered when developing e-learning environments:

- vibrant multimedia learning instruction;
- predominately independent learning environments;
- improving instructor/student communication and interaction; and

- enhancing learning effectiveness.

Cao *et al* (2009:332) found that a body of research had indicated that the incorporation of synchronous tools (such as instant messaging and video conferencing) makes a positive impact on students and is good way to improve interaction in e-learning. They indicate that web-based synchronous interaction components should be incorporated into e-learning programs, especially as they have now become technically and financially feasible. Students themselves have indicated that synchronous tools improved interactivity in the e-learning environment (Park & Bonk, 2007a:259). Synchronous web-based communication allows instructors to “build connections” and also “increase the potential for interaction” (Barron, Schullo, Kromrey, Hogarty, Venable, Hilbelink, Barros, Loggie & Hohlfeld, 2005:3066). Incorporating interactive video into the e-learning environment can be used to improve interaction (Zhang *et al*, 2006:24). However, they also warn that simply incorporating this into the e-learning environment is not sufficient to improve learning. Interactive video needs to provide “random access to content” in order to be successful.

Carr and Farley (2003:406-413) outlined a step by step guide to developing a web course, which included the following:

- a strategy for course redesign or development should be selected;
- an environment for the web course should then be selected;
- redesign a current course or develop the course;
- gather course content;
- define the learning activities and interaction for each module;
- build and test the website;
- teach the course; and
- evaluate and amend where necessary.

They conclude that if the course design/redesign were to incorporate the above steps with a focus on “creating an interactive, collaborative community of learners”, the quality of the course would be high, as would also be the satisfaction of the students and instructors (Carr & Farley, 2003:414).

When designing an e-learning system in South Africa, it should be borne in mind that there is legislation to be complied with. Learning content and materials must comply with the requirements of outcomes-based education and training (OBET), the National Qualification Framework (NQF) and the South African Qualifications Authority SAQA (Dagada & Jakovljevic, 2004:195).

3.6.2.3 Poor student participation

However, having a well-designed e-learning program is not the only factor to consider. Student participation in e-learning courses is also vital to their success. This stands to reason, because without student participation, the course will not achieve its goal of instruction delivery. Achieving a level of student participation that creates a student-centred learning environment is regarded by Bento *et al* (2005:79) as “one of the biggest challenges for designers” of e-learning courses. However Engelbrecht (2003a:[3]) stated that the “success of e-learning depends on how well students and lecturers adopt a technology-based student-centred learning model”. Bento *et al* (2005:79) proposed a taxonomy for classifying different types of participation in online courses and also discussed pedagogical issues involved in increasing participation. The taxonomy plots the different types of participation into four quadrants, with the “interaction with content” on the horizontal axis and “interpersonal interaction” on the vertical axis. The four quadrants were “missing in action” (low content and low interpersonal interaction), “witness learners” (high content but low interpersonal interaction), “social participants” (low content but high interpersonal interaction) and “active learners” (high content and high interpersonal interaction). According to this taxonomy, Bento *et al* (2005:84-85) concluded that it is of the utmost importance

that instructors differentiate between “witness students” and “missing in action” students and take steps to move the “missing in action” students to “witness students” by contacting them early and frequently. Instructors also need to be aware that high interpersonal interaction does not necessarily lead to effective learning unless it is accompanied by high content interaction. For this reason, instructors must also differentiate between “social participants” and “active learners”, and take steps to move “social participants” to being “active learners”, perhaps by monitoring content interaction and increasing the implementing tests per content interaction. Another possible solution to increasing participation could be to raise the grade associated with participating in the discussion board.

Learners will only participate in the e-learning programs if they are satisfied with them (Sun *et al*, 2008:1196). The success of e-learning is therefore dependant on the students’ level of satisfaction with e-learning (Chiu *et al*, 2007:1224). In order to increase learner satisfaction, a perception of value and fairness needs to be created in the e-learning course. According to Sun *et al* (2008:1196), the following factors are critical in determining user satisfaction:

- learners’ anxiety;
- instructors’ attitudes to e-learning;
- e-learning course flexibility;
- e-learning course quality;
- perceived usefulness;
- perceived ease of use; and
- diversity in assessment.

In order to achieve this, Sun *et al* (2008:1196) suggest that course content should be carefully designed and sparingly presented. To achieve perceived usefulness and ease of use, careful consideration must be given to the technological design. The different learning schemes should be identified using the administrative strategy, which can be used to evaluate the diversity of the assessments. Helping students build their confidence in using computers could

increase the learning experience and reduce anxiety levels at the same time. Lastly they suggest that instructors need to be both committed to e-learning and active participants in it. Chiu and Wang (2008:200) found that individuals practise “rational self-interest” and will be encouraged to continue using e-learning as long as the benefits exceed the cost. Pituch and Lee (2004:239) found that student familiarity with the e-learning environment is an important consideration for any student adopting the e-learning environment. They therefore suggest that instructors, both academic and corporate, should consider implementing such technology first as a supplementary course tool in a traditional class, to create an initial exposure to this sort of learning environment.

Yang and Tsai (2008:1300) found that students preferred instruction to be “structured and concept based”. The student also preferred interaction with instructors and experts rather than with peers.

Santally and Alain (2006:31) also indicated that, when designing an e-learning course, cognisance must be given to improved personalisation of the learning environment, particularly to suit individual learning styles.

Administrative issues like system availability and speed also affect student satisfaction. Sun *et al* (2008:1196) maintain that system administrators should ensure the constant availability of system functions. They also state that assessments of system performance and loading should be done on a periodic basis.

3.6.2.4 Faculty participation

Faculty participation is crucial for successful learning in an asynchronous e-learning environment (Blignaut & Trollip, 2003:152). According to these writers, this would also lead to increased learner satisfaction. Blignaut and Trollip (2003:167) proposed taxonomy of instructor participation in asynchronous online

discussion by classifying the instructors' postings as administrative, affective, other, corrective, informative and Socratic. They found that taxonomy was a very useful tool for understanding the "dynamics of the online discussions". Instructors should be trained in the administration of the e-learning course (Sweeney & Ingram, 2001:61). They also need training and guidance on the adoption of this new learning environment (Engelbrecht, 2003a:[3]). Lavoie and Rosman (2007:105) proposed that faculty development should be incorporated as a major part of the scholarship of teaching and that this development should be based on the active student-centred learning approach.

3.6.2.5 *Inadequate access to or lack of technical knowledge*

Many instructors, as mentioned above, are still reluctant to implement e-learning courses because they lack experience with these sorts of technology, or do not have access to this knowledge. Yin-Sum and Tak Wing (2002:49) stated that a "collaborative, team approach" is a viable solution. Instructional designers and instructors should share their knowledge in e-learning technology. They warn, however, that for this collaboration to be successful there are certain requirements to be met:

- shared commitment;
- adequate communication;
- a supportive relationship; and
- a willingness to share expertise.

Lavoie and Rosman (2007:115) also found that allowing the faculty staff to work with instructional design specialists to develop a student-centred learning environment led to the creation of a better quality e-learning program. Poon, Low and Yong (2004:383) suggested that the instructors themselves upgrade their technical skills and that human resources should constantly keep up to date with the latest technological developments. Jakovljevic (2009:258) suggested that a "network of human recourses" be formed, which would consist of a "teaching

assistant, a senior tutor, peer tutors and a technical assistance” to overcome this obstacle.

3.6.2.6 Lack of interaction

One of the major reasons for the failure of e-learning programs is the lack of interaction inherent in many of them. It is widely recognised that interaction is of the utmost importance in an e-learning environment (Arbaugh & Benbunan-Fich, 2007:862; Woo & Reeves, 2007:15). Woo and Reeves (2007: 15) stated that interaction is a key ingredient in any learning environment (traditional or electronic). Limited interaction can result in feelings of increased isolation, leading in turn to reduced learner performance (Arbaugh & Benbunan-Fich, 2007:855). Engelbrecht (2005:226) concluded that

...changing the delivery mode of tax education is not only about students in advanced taxation becoming computer and information literate or about having a convenient learning environment. Rather it is about developing an interactive learning event that will develop self-directed, lifelong learners who can be productive and competitive in an information-based business environment.

Liaw *et al* (2007:1078) found that students’ satisfaction improves with the availability of adequate multimedia interaction and indeed many of them feel that this interaction is necessary. The writers (2007:1078) therefore conclude that e-learning should provide the necessary tools and functionality to facilitate this interaction and that instructor’s themselves should adapt their approaches to incorporate these tools. Chiu and Wang (2008:200) also indicated that e-learning should provide well-designed tools and functionality for improved online interaction. Moore (in Arbaugh & Benbunan-Fich, 2007:855) identified three different types of interaction: learner-learner interaction, learner-instructor interaction and learner-content interaction. Arbaugh and Benbunan-Fich, (2007:862) found that only the latter two (namely learner-instructor and learner-system) are critical to the achievement of success. Woo and Reeves (2007:16) also warn that not all interaction leads to improved and increased learning. They

indicate that to increase the effectiveness that interaction can have on an e-learning environment, there should first be an understanding of the nature of the interaction and only then can the implementation of effective interaction within an e-learning environment begin (Woo & Reeves, 2007: 23).

Benko *et al* (2005:79) suggest that a good way to foster interaction is to make use of a discussion forum. The authors add that the guidance exercised by the faculty in facilitating this forum is vital to student learning. Blignaut and Trollip (2003:150) suggest that there are three variables that contribute to the effectiveness of an online discussion forum:

- the nature of the information addressed by the topic discussed;
- the type of topics discussed; and
- faculty participation in the discussion.

Billhardt (2010:21) suggests the following interactions to be incorporated:

- group sessions to share job experiences and link them to the learning;
- real time meetings where knowledge is shared and guests might give lectures;
- accomplishments could be recognised and rewarded; and
- blogs and wikis could be used to foster interaction.

Another possible solution is to combine the two forms of instruction delivery. Many new courses now use a combination of traditional instructor-led content delivery methods with internet-based instructional techniques to deliver information. The rationale for this is that the “best of both of worlds” can be attained by adopting such an approach. These hybrid courses are, as a result of technological advances, becoming more and more common (Friday *et al*, 2006:68). These sorts of courses usually offer a combination of in-class time (although usually not as regular as with traditional delivery methods) with online learning techniques like podcasting and information sharing. However, other

asynchronous activities are also being used, such as email, online bulletin boards and chat rooms (Friday *et al*, 2006:68).

Stemler (in Woo & Reeves, 2007:17) provided several suggestions for screen design in order to increase interaction quality:

- key information should be provided in prominent locations with important information at the beginning;
- the middle of the screen should contain the important messages and questions;
- attention can be focused through the use of highlighters; and
- universal icons with which students are familiar should be used.

Lam (2009:330) stated that traditional methods of content delivery could benefit from e-learning, as it would encourage students to take partial responsibility for their learning process (as those delivery methods are more student-centred). Instead of relying on classroom time for knowledge delivery, traditional methods could be supplemented with web-based learning techniques. This could be used to include topics covered in instructor-led lectures, topics that could not be covered in these lectures owing to, for example, time constraints, or as a means whereby students could revise topics previously covered (possibly before an examination).

Friday *et al* (2006:68) indicated that a combination of both synchronous and asynchronous activities works well. This could be particularly effective in teaching taxation, as instructor-led lectures could be used to deliver instructions (synchronous activity) which could be supplemented by further notes being made available over the internet (asynchronous activity) for matters such as amendments to the taxation legislation, new case rulings or further notes.

Distance learning taxation education seems to be an area adopting a combined approach to content delivery. Many more distance learning courses in taxation

(as well as other disciplines) are using internet-based learning techniques to supplement traditional methods, thereby providing a more flexible course for learners (Priluck 2004:170). Priluck (2004:172) investigated students' responses to two technologically different teaching methods, a traditional teaching approach using lectures, class discussions, assignments and exams and a web-assisted method (combined method). However, Priluck (2004:172) found that students thought they learnt as much when following a combined method as they would have done following the traditional method.

3.6.2.7 Differences between traditional and e-learning learning environments

As mentioned above, there are differences between traditional face-to-face learning environments and e-learning environments. When designing e-learning environments, these differences have to be recognised and adequately addressed.

One of the major differences identified was that control of the e-learning environment was transferred to the student. Spiceland and Hawkings (2002:70) stated that in e-learning courses students had to become active learners. Active learners constantly seek and absorb knowledge to achieve the objectives and competencies of the course. Rowntree (in Spiceland & Hawkins, 2002:70) believes that students ought to do more than merely receive information; they should enhance understanding through participation in activities and tasks.

Possible solutions to the other major differences identified above (no regular interaction and e-learning environments tendency to be more asynchronous) have already been discussed.

3.6.2.8 *Disadvantages of the e-learning environment*

As identified above, there are many disadvantages to the e-learning environment, which, if e-learning is to be successful, must be adequately addressed. To counteract the increased feelings of isolation inherent in an e-learning course, Arbaugh and Fich (2007:855) suggest that e-learning environments should provide more opportunities for interaction with both participants and the content itself. The reduced interaction with an instructor caused by the shift from an instructor-centred to a learner-centred environment is another major disadvantage. To overcome this, Priluck (2004:171) suggests that the faculty should help through regular contact with learners, especially those who appear to be participating actively.

3.6.2.9 *Advantages of e-learning*

The numerous advantages of e-learning, as mentioned above, can be used to benefit instructional delivery in South Africa. The advantage of being free from the barriers of space (can be used anywhere) can be used to address situations in which learners are unable to commute to campuses. The ability of e-learning to free itself from time (can be accessed at anytime) would allow learners in South Africa to learn at a time best suited to their needs. This would be particularly useful in the South African context, as many learners cannot afford to study on a full-time basis. Studying through electronic means would allow them to work and study at the same time. E-learning could be a cheaper alternative, and would alleviate one of the major problems in South Africa, which is that many learners simply cannot afford to study.

3.7 CONCLUSION

The implementation of e-learning as a means of instruction delivery for taxation courses in South Africa, as can be seen from the above analysis, is not very common. There are many issues currently being faced in e-learning

environments and many of these are so severe that they actually result in the failure of the e-learning course. This may be a potential reason for South Africa being so slow to incorporate electronic means as a method of instruction delivery in taxation education. A previous lack of infrastructure and technical know-how may have also contributed to this. In this section the solutions for the problems currently being faced, based on the findings from the literature, are analysed. Instructors and instructional designers could consider these solutions and incorporate them into the design of e-learning courses for tax education in South African to prevent failure. Students could also educate themselves on these issues and the possible solutions so that they could look for these in e-learning courses prior to making a decision on whether they want to take the course.

CHAPTER FOUR

CONCLUSION

4.1 INTRODUCTION

The purpose of this study was to analyse electronic methods as a means of instruction delivery for tax education in South Africa. This would provide guidance for instructors and instructional designers as well as students on the effectiveness of electronic methods for instructional delivery in tax education. This chapter summarises the findings presented in the previous chapters and offers comments where necessary.

4.2 RESEARCH OBJECTIVES

The objectives of this study were

- to critically analyse the literature on electronic teaching methods to establish the theoretical basis for the study. This was done in Chapter Two; and
- to analyse the use of e-learning as a means for tax education in South Africa, using the theoretical basis as an underpin by identifying the disadvantages, differences and issues in e-learning in comparison with traditional methods of learning, as well as offering some solutions (as suggested by other authors) to these issues. This was done in Chapter Three.

4.3 SUMMARY OF THE FINDINGS

First, the advantage and disadvantages of using e-learning as a means of instruction delivery were identified. The purpose of this was first to inform instructors and instructional designers of the benefits and pitfalls of using e-learning, and, second, to identify a way of addressing these shortcomings and to take full advantages of the benefits of e-learning when designing e-learning courses.

The advantages identified were:

- eliminates the barriers of time and space;
- more convenient;
- more flexible;
- student-centred;
- could be more cost effective; and
- always available.

The disadvantages identified were:

- adjusting from an instructor-centred learning environment to a student-centred learning environment;
- lack of/reduced interaction with the instructor;
- higher levels of self-discipline required;
- reduced student motivation; and
- reduced social interaction.

Thereafter the differences between e-learning and traditional face-to-face interaction were identified. It is important that instructors and instructional designers be made aware of these differences so that they can take them into

account when constructing e-learning courses for tax education. Possible solutions to these differences were then stated

The following differences were identified:

- in electronic learning, there is no regular interaction with an instructor;
- control over the learning process is transferred to the student rather than to the instructor (student-centred); and
- electronic learning tends to be more asynchronous, while traditional forms of instruction delivery tend to be more synchronous.

Based on the studies analysed, it was also established that the majority of the findings seem to indicate that there is no major difference between e-learning and traditional face-to-face instruction delivery as a means for delivering instruction.

Finally, the major issues currently facing e-learning, as well as the possible solutions to these issues, were identified. It is important that instructors and instructional designers be made aware of these issues so that they can adequately respond to them in order to ensure the success of the e-learning course. The solutions identified in the above analysis could be used to address these issues.

4.4 AREAS FOR FUTURE RESEARCH

In this study, the evaluation of electronic methods as a means for instructional delivery for tax was undertaken based on an analysis of relevant studies. Further research could be carried out on evaluating the effectiveness of the solutions identified in e-learning courses through empirical testing. Research should also be conducted on evaluating the adaptability of the findings in this study to the tax learning environment and in particular the South Africa learning environment.

4.5 OVERALL CONCLUSION

This study reveals that certain serious issues in e-learning are currently being experienced. If e-learning is to be adopted as a means for successful instruction delivery in tax education, these issues should be adequately dealt with. However, as can be seen from the analysis of the relevant literature, there are solutions for to current problems, which is indeed encouraging for e-learning. Overall, based on the findings of the study, e-learning could be adopted as a means of instruction delivery in tax education, but there must be cognisance of the issues currently prevalent in many e-learning environments. If these issues were adequately addressed then it appears that e-learning could be successfully used in instruction delivery for tax education in South Africa.

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