A FLEXIBLE MODEL OF EDUCATION IN PUBLIC ADMINISTRATION

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ABSTRACT

In keeping abreast with the international developments in tertiary training, a new educational model for Public Administration was developed for the University of Pretoria. This model is based on a vision of flexible education, which implies a commitment on the part of the learner to continual self-improvement. In pursuit of lifelong learning it is possible to extend the expertise to other Schools in Public Administration; developed an impressive range of telematically delivered certificate and postgraduate degree programs; and address continuous education training needs through telematic education. Education needs to change towards more targeted training, with the. actual learning, rather than the teaching, taking center-stage, and with room for the delivery of tailor-made training. The delivery of tailor-made training means that an educational establishment can offer training more suited to every individual student which will meet his other own individual wishes and needs.

INTRODUCTION

Delivery of learning using traditional methods generally required only the instructor, a textbook and whatever additional support materials the instructor was able to gather. With the advent of computers and Internet-based education and training, all that has changed. Instructors are faced with steep learning curves. How good their online lessons become depends heavily on how they are able to adapt to the computer age. For most faculty members, it is a challenge; for many a formidable task and for some who have little involvement with distance or distributed learning, perhaps an unnecessary and unwelcome change. Alexander von Humboldt, a German philosopher and scientist in the 1800s, in referring to language teaching, said: "A language cannot be taught One can only create conditions for learning to take place". Although von Humboldt was referring specifically to language instruction at the time, the statement is very appropriate to Web-based instruction today. In developing online learning systems, we, as teachers or trainers, must ensure that the online environment we create is one in which learning can and will take place.

The Internet can be a wonderful tool for instructors and trainers. How valuable the Internet is as a teaching medium varies considerably depending on the topic being taught While most courses can benefit to some degree from an Internet component, not all courses can be effectively transformed from a hands-on, classroom experience to a totally computer-based learning environment In a classroom-delivered topic or developing an entirely new online presentation, course developers and facilitators need the answers to some fundamental questions: What advantages would there be to putting my course online? What benefits are there for my students? What benefits are there for my school or organization? What benefits are there for me as a teacher or trainer? Depending on the subject of the course, an online course component could be used to provide sources of supplementary materials or studies for students. Alternatively, the Internet may be used to provide all or part of a course entirely online, including instructor-student interaction, assignments, grading and feedback. Electronic mail is also a convenient way to keep in touch with students, remote or otherwise, to give oneself time to reflect on an appropriate answer yet still respond within a short space of time.

Creating a new course or transforming one from a classroom lecture to an online format is far

more complicated than just converting lecture notes to HTML documents. Once instructors have a good grasp of the process, they will discover that creating an online course has far more advantages than limitations. From a faculty perspective, online course development has a number of aspects that must be considered. Each has positive and negative elements. This article explores, amongst other things, the rate of adoption of technology by faculty in the School of Public Management and Administration, after a period of three years.

BACKGROUND

Education innovation is a key strategic initiative at the University of Pretoria (University of Pretoria 2002). The Department of Telematic Learning and Education Innovation (TLEI) is a service department at the University, which assists and supports academic staff in education innovation projects. At the University of Pretoria, as in other tertiary institutions globally, a great deal of attention has turned towards "e-education" or "e-learning". E-learning is an electronic extension of current contact teaching facilities, products and services. It provides an Internet-based platform that enables residential and remote learners and faculty to access an integrated educational environment from anywhere in the world (Virtual Campus 1998).

The aim of e-learning at the University of Pretoria is to improve the quality of educational processes and products, and to extend existing administration and teaching and learning functions through the application of various technologies. Through e-learning, the university hopes to offer increased flexibility of access and options to its clients. The trend is to offer fewer contact sessions - mainly for examinations, practical work, problem solving and human interaction which no technology can match and to supplement these with web-supported teaching and learning environments (Virtual Campus 1998).

INTERNATIONAL CONTEXT

Rapid technological changes and the emergence of the global knowledge-based economy have encouraged tertiary institutions to develop policies encouraging investment in Internet technologies and infrastructure.

Upgrading the skill shortages in the workforce, particularly information technology skills, are promoted as the basis of this new economy. Owing to the need for a. rapid uptake of these new skills, providing effective workplace learning has become essential for many institutions to gain competitive advantage (Bassi era/. 1998).

In the face of the Internet and its related technologies, retaining staff, remaining competitive and ensuring long-term profitability are seen as potential organizational benefits of the emerging knowledge-based economy. Implementation of flexibility in training and user control of learning, particularly through online delivery, have in turn created pressures for changes in the way people and organizations work (Eccles 1998; Stephensen and Yorke 1998; Bates 2000). Despite the International Data Corporation's forecasts that online learning will become a $US14 billion industry by 2004 in the USA (Dobbs 2000), Dobbs (2000) provides a cautious warning about online learning implementation. The perceptions of the advantages of Internet technologies for training have motivated institutions to go online "regardless of whether they had a clear reason to do so ... Nobody deemed to understand quite what was happening, but not one dared get left behind" (Newton et al. 2002:156).

Online learning through the Internet and World Wide Web (WWW) is rapidly becoming an established practice in a number of educational institutions worldwide (Barker 2002). Vehicles

have proliferated to deliver course materials and to create active and collaborative learning experiences. Tertiary education faculties, secondary school teachers, and business trainers alike are turning to the World Wide Web as a vehicle to implement educational innovations (Khan 1997; Owston 1997). The Web is claimed to be one of the most powerful tools for providing faculty and learners with necessary conditions for independent and interactive learning (Le 1999).

E-learning is enabled via the WWW, through the appropriate integration of various' information and communication technologies (ICTs). It may include a variety of delivery media, such as online learning, interactive multimedia, computer assisted assessment, interactive television and videoconferencing.

Learning management systems (LMS) have emerged as one of many software systems available to deliver online learning. They are designed with a view to enabling enriched interactive educational communication oh the Web, and to offer enhanced support to instructors and learners as they use the Internet as a medium for learning. The University of Pretoria makes use of a LMS called WebCT (Web Course Tools). WebCT offers the following functionality (WebCT, 2002):

- provides access to information and resources;
- establishes online learning communities;
- and enables assessment, student tracking, self-paced learning and off-campus access.

E-learning, however, brings new problems to the fore, especially with regard to the adoption of new technology by faculty. Some of the issues affecting the slow adoption of technology are discussed later in this article.

SOUTH AFRICA: NATIONAL CONTEXT

Online learning on the national sphere in South Africa promotes both outcomes-based education (OBE) and constructivism. These learning theories and their links with online learning are discussed in more detail **below. Spady (1994) states that outcomes-based education:**

> means dearly focusing and organising everything in an educational system around what is essential for all students to be able to do successfully at the end of their learning experiences. This means starting with a clear picture of what is important for students to be able to do, then organizing curriculum, instruction and assessment to make sure this learning ultimately happens (Spady 1994:1).

According to Gultig (1997), the main principles underlying OBE are:

- lifelong learning;
- flexible education and training structures;
- the integration and transfer of learning; and
- the need to teach towards critical, cross-field and specific outcomes.

Online learning lends itself to OBE in that it is an approach that requires learners and lecturers to focus their attention on the desired end results of learning (the skills learners are to acquire), and the teaching and learning processes that will guide the learners to these end results (Geyser 1999). The focus is less on the teacher as instructor, and more on the *teacher as*

facilitator. With the emphasis on *active learner-involvement,* the learner becomes the *creator or producer of knowledge.* These ideas are well supported by the medium of online learning, which encourages a learner-centred philosophy. Learners need to take responsibility for their own learning and for the knowledge and skills they are to acquire. This philosophy implies changing roles for both lecturers and students.

Online learning blends in very well with constructivism, as opposed to objectivism. These are two of the main approaches, or epistemologies of learning. A paradigm shift has taken place in the last decade, from an objectivist epistemology to a constructivist epistemology (Sims, 1998). The constructivist epistemology reflects a position that knowledge is not independent of the learner, but is internally constructed by the learner as a way of attaching meaning to experiences (Cronin 1997; Jonassen, Davidson, Collins, Campbell & Haag 1995). It is a specific strategy of instruction that facilitates cognitive learning, in contrast to didactic, authoritarian teaching as evidenced in the objectivist epistemology, and is a learner-centred, rather than an instructor-centred approach.

A dominant characteristic of constructivist learning is collaboration among learners. In contrast to objectivist instructional theories, constructivist theories posit that it is through communication with others that learners construct meaning from their experiences (Miller & Miller 1999). The importance of social negotiation in the learning process means that communication becomes critical. One of the main strengths of online learning is the array of communication tools it offers. Part of the role of the facilitator then becomes to encourage the development of online learning communities.

MAKING EDUCATION FLEXIBLE AT THE UNIVERSITY OF PRETORIA

The University of the Future, regarding its educational model in particular, will differ from the traditional contact universities. The focus will shift from teaching and the transfer of knowledge to learning, supported by technology-based education strategies. Universities worldwide are also continuously subjected to renewal, because of technological and social changes, changes in the educational paradigm, an increase in the importance of distance education, open learning and flexible learning, the massification and industrialisation of education, digitalisation of information and communication media, commercialisation and globalisation of education and the pursuit of quality. In addition, education institutions are increasingly exposed to a growing number of new learners with a variety of needs and preferences. Universities need to make education more cost-effective and at the same time enhance the quality of education.

> The University of Pretoria has risen to this challenge. Its education model incorporates the impact of technology and the flexible needs of learners, making the student the central focus in the design and development of teaming opportunities. The model, based on a technology-enhanced flexible learning model (telematic education), takes international trends in education innovation into account whilst simultaneously addressing the unique needs of a developing country through appropriate technology-enhanced delivery systems. The model allows for the learner to study, for instance, either full-time or part-time, wherever he/she chooses and through the innovative Integration of contact tuition, electronic education and, in certain niche markets, paper-based distance education. The emphasis in a flexible learning environment shifts from conveying information to facilitating learning in accordance with appropriate modes of delivery. The lecturer is no longer the single source of information and other educational resources through information communication technology (ICT) come into its own right.

FLEXIBLE LEARNING

Flexible learning encompasses a range of electronic and face-to-face delivery mechanisms and support systems, using appropriate, cost-effective combinations of ICTs. This article focuses on web-supported learning, as one delivery option in a flexible learning model. The terms 'web-supported learning' and 'online learning' are used interchangeably and imply the use of the Internet to enhance and support learning. The phrases 'technology-enhanced learning' or 'internet-based, distance learning' are also sometimes used (American Federation of Teachers, 2000).

The term 'web-supported' is used as opposed to 'web-based' learning, since the learning model under consideration is a flexible one with a regular component of contact time. The proportions indicated in Figure 1 are suggestions only and may vary for each learning programme, depending on the needs and abilities of the student and the preferences of the lecturer.

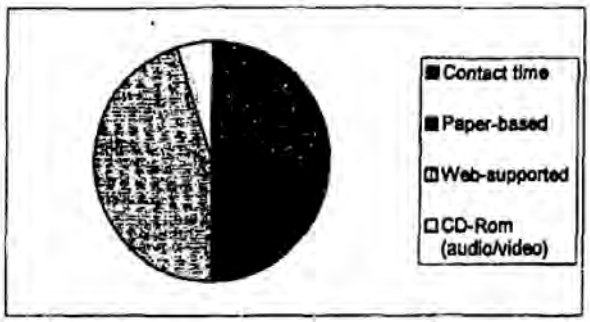

Figure 1: Mix of delivery media for a flexible learning model

Note: Web-supported learning is only one component of the blend of various delivery media offered in flexible learning.

THE VIRTUAL CLASSROOM

The Virtual Classroom refers to an electronic "classroom" which students and lecturers access through the Internet. Prerequisites therefore, are a computer with a modem and a link to the Internet through an Internet Service Provider (ISP). Lecturers generally have such access from their offices, and it is preferable for students to organize such access from their homes and/or work places. If students live close enough to the University, they can make use of various computer laboratories on campus, which are dedicated to the use of WebCT, currently the software package used to establish virtual classrooms.

The virtual classroom is much more powerful than simply a web site, such as we are used to finding on the Internet when we search for information. The electronic classroom can provide almost all the same features and activities that one has come to expect in a traditional classroom situation. It is "almost air, because the one feature that is not possible to offer online, just as in traditional distance education, is the presentation of high stakes tests and examinations. These need to be conducted in an examination centre under examination conditions.

Virtual classrooms are particularly powerful as far as communication is concerned. Standard Internet tools such as discussions, email, and chat are included in WebCT for lecturers and

learners to use as they choose. This has improved communication drastically in comparison to traditional distance education. The discussion and email tools support asynchronous communication (which takes place at different times, at the convenience of the user), while the chat tool supports synchronous communication (which takes place in real time). These communication tools are flexible, efficient, widely accessible (using standard desktop computers and phone lines) and are capable of supporting enhanced interactivity.

INTEGRATING E-LEARN1NG AND CLASSROOM LEARNING

E-learning is even more powerful when properly integrated with more traditional classroom training programmes. In following this path, one will move from building single learning programmes, courses, databases, or tools, to building a learning architecture. A learning architecture is the design, sequencing, and integration of all electronic and non-electronic components and performance. In other words, it is how you structure and integrate everything that contributes to that goal (Rosenberg 2001:118).

With all the potential of e-leaming, it might be easy to dismiss traditional classroom training as completely antiquated - of no value down the road. Although e-learning has a great deal to contribute, it does not mean the end of classroom learning. In fact, classroom learning will fill a unique role within a learning architecture, but it will be a different role than in the past. Group interactions, problem solving, performance evaluation, expert observation, culture building, and teamwork are all critical attributes of an overall learning system that, in many cases, is still best suited for classroom experiences. With e-learning becoming a significant part of your learning architecture, there will be a number of changes in classroom-based learning strategies (See Table 1).

Table 1: How the Web will change the classroom

The classroom will no longer be the default delivery system
The synergies between e-learning and classroom learning will become more refined
There will be less teaching and more facilitating
There will be more reliance on original source materials
Course start and end dates will become increasingly irrelevant

Source: (Rosenberg 2001: 120).

The answer is that whenever you are looking at learning architectures, flexibility and adaptability is key. According to Rosenberg (2001:124) there are twelve guidelines to help you build a learning architecture that will stand the test of changing content and changing business requirements:

- Conduct a thorough needs assessment;
- Base your architecture design on the competencies you wish to build;
- Keep the needs of the public sector in mind;
- Test you architecture assumptions with all stakeholders;
- Start by associating classroom learning with application and teamwork, and e-learning with content and tools;
- Use existing source materials, if available; Use the Web to link all learning components;

Help people learn 'how to learn';
- Think 'precision learning';
- Create and maintain community on the Web;
- Use the classroom as an extension of your online learning community; and
- Engage learners every step of the way.

SLOW ADOPTION OF TECHNOLOGY-ENHANCED TEACHING AND LEARNING

Why is it that faculty at institutions of higher learning see the need for change, and even dabble in the use of electronic media, but often fail to embrace technology in teaching and learning? Champions and enthusiasts there are, and have been since the days of mainframe computer-based education in the early 1980's (Delpierre 1991). However, there are many and varied inhibiting factors which contribute td the„re1atively slow adoption of instructional technology, as can be seen from the discussion which follows.

Schifter (2000) carried out a survey to measure the extent of motivators and inhibitors for participation of academic staff in distance education. She found that determining what factors deter academics from participating in distance education appears to be easier than determining what motivates them. She categorized the inhibiting factors into four groups:

- resistance to change;
- lack of resources;
- lack of rewards; and
- revised role for academic staff members.
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Perhaps the most significant resource that is lacking, is time. Some professors say they simply do not have the time, nor the opportunity, to learn the new tricks of the Internet (Young 1997).

Viljoen presented his views on what problems may contribute to the fact that only 10% of lecturers at his institution are involved in computer-assisted education. His opinion is that there are four factors: belief, time, know-how and confidence, in that order:

- Belief: Faculty are not easily convinced that their traditional ways could be improved.
- Time: Most academics simply do not have the time to learn new tricks, amongst heavy teaching loads, administrative duties, improving throughput figures and securing their jobs.
- Know-how: When one starts delving into instructional technology, one realises the limitations of one's expertise.
- Confidence: "If by some miraculous intervention, you happen to surmount the
- previous three obstacles and team something about instructional design for, computer-assisted education, you know that you know even less than you knew before" (Viljoen 2002:online discussion forum).

Cornell reports on a 1998 article in the Orlando Sentinel headlined "Internet classes irritate faculty". The report found that part of the concern of professors was that using the Internet for instructional delivery was leading to a loss of control and ownership of their courses (Cornell 1999).

Cornell refers to the findings of a 1998 survey administered by Dziuban and Moskal to 38 faculty members teaching web-based courses at the University of Central Florida. 58% of respondents

felt that there was an increased workload in using technology to teach at a distance, resulting from:

- searching for existing resources;
- re-engineering instructional materials;
- developing new instructional materials;
- redesigning student activities and assignments;
- reconsidering assessment strategies;
- administering online courses;
- facilitating online learning; and
- communicating with students electronically (Cornell 1999).

In the same survey, positive comments from faculty members about web-based or media-enhanced instruction covered topics such as enhanced learner interaction, increased flexibility for learners and teachers, continual self-improvement, perception of the instructor as a facilitator and more responsibility demonstrated by learners (Cornell 1999). One of the most encouraging findings was that, when asked if they would be willing to teach another web-based course in the future, 76% of the faculty members responded positively (Cornell 1999).

It appears then, that there are very real and daunting factors which may technology or a particular product, it may already* have been superseded by something else.

Hopper describes the two extreme attitudes of faculty members as follows:

> Faculty perceive the technology imperative and may be persuaded to take action, but find themselves unprepared professionally and without effective leadership. Faculty responses vary from head-in-the-sand entrenchment behind the traditions of the academy, to frenetic acquisition and implementation of instructional technology (Hopper 1999:50).

In the case study described below, it could be suggested that the School of Public Management and Administration (SPMA) at the University of Pretoria is currently entering the 'early majority stage of the adoption curve. In the race towards the effective use of technology in education, the baton has now been grasped by the SPMA, in that lecturers are taking the initiative to enhance their courses with the aid of technology.

It appears that the main factors which had inhibited their adoption of technology were, as Viljoen (2002) suggests, belief and time. Lack of awareness of the capabilities of the technology may also have played a role.

CASE STUDY: SCHOOL OF PUBLIC MANAGEMENT AND ADMINISTRATION

The School of Public Management and Administration (SPMA) at the University of Pretoria is a leader in Public Administration and Management not only in South Africa, but also in Africa (University of Pretoria 2001). The School offers programmes that are competitive on a global scale, yet have local relevance. Their success results from their commitment to excellence in higher education, which is thoroughly embedded in research and innovation.

The varied opportunities offered by the Internet have inspired the lecturers in the School to try

new and innovative ways of delivering course content and facilitating learning. They are now exploring not only web-supported learning, but other types of internet tools, such as e-groups. Such listservs make it possible to include national stakeholders and international experts in online discussions, without having to arrange special guest access to password-protected WebCT courses.

Synchronous audio lectures and discussion groups have been pioneered using CentraOne software, in collaboration with the University of Michigan and other partner institutions, both in the USA and in South Africa. Another project is the collaboration with Gonzaga University, in which lectures are videotaped at both institutions and are made available in electronic format, downloadable from the Internet, for students from both universities.

In what follows, the focus is on the SPMA's use of online learning and the mutually supportive partnership between SPMA and TLEI, the University's support department. The SPMA currently has three e-learning projects under development, for the following study programmes:

- Honours in Public Administration;
- Masters in Public Administration (MPA); and
- PhD in Public Affairs.

These projects make use of web-supported learning, using WebCT. With the help and support of instructional designers in TLEI, lecturers in the School adapt WebCT to suit their unique teaching and learning situation. Hence no two courses look or function alike. Lecturers select different tools to suit their individual needs and preference, depending on the learning situation and the target population of students involved.

The programmes are not yet fully available online, since the development has been phased in since 1999 and is still continuing.

SPMA'S ONLINE COURSES

- Honours

  The Honours programme is aimed at equipping candidates for academic careers, mid-career and senior management in the Public Sector. It attracts students from different South African provinces as well as from Lesotho and Swaziland (University of Pretoria, 2001). Since 2001, two modules have been available online.

- MPA

  The Masters programme in Public Administration aims to enable managers in the public sector to perform their managerial function effectively, irrespective of their undergraduate study. The MPA-degree is an internationally accepted postgraduate qualification that has a management-orientated approach. The degree attracts students from South Africa as well as from Cameroon, Nigeria, Sumalia, Sudan, Lesotho, Swaziland, Ethiopia, Malawi and Cameroon (University of Pretoria, 2001).

  The development of the modules for the Masters degree is now complete, after initially

having only two modules online. The remaining seven modules will be presented on the Web as from 2003. These modules were all developed towards the end of 2002 after meeting with the lecturers and encouraging them to provide us with their content for those modules not yet online. After these meetings, lecturers saw the potential of online learning and moved up in the adoption curve.

- PhD

  The PhD programmes in Public Affairs aim to equip candidates for leadership and governance in the public sector. They attract students from all over Africa as well as from abroad. Currently students are from South Africa, Britain, Morocco, Zimbabwe, Namibia, Botswana and Nigeria (University of Pretoria, 2001).

Progress in getting the modules on the Web for the PhD has been slow. An innovator (champion) in the School emerged early and his course was the first to be placed on WebCT in 2000. Prior to this he placed his content on the School's home page and designed his own bulletin board to communicate with his learners. He has taken the role of project leader in the School, and is responsible for encouraging the other lecturers to participate in the project.

In 2003 a second compulsory module, entitled "Leadership, Governance and Public Policy", will be available online. Two elective courses, to be accessed via a programme-wide "portal" or umbrella communication facility remain to be developed on the Web. Figure 3 shows the increase in the number of SPMA courses available online from 2000 to 2003. It is exciting to see that the number of courses going online more than doubled from 2002 to 2003.

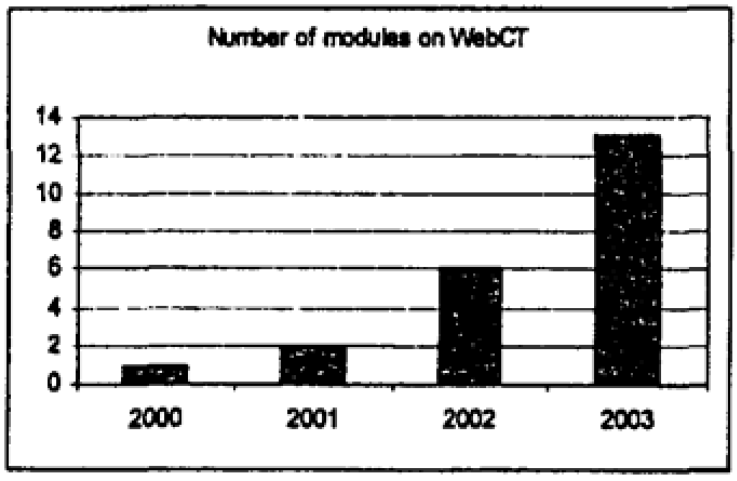

Figure 3: Cumulative increase in SPMA courses on WebCT

THE FUTURE

It would be easy to dismiss e-learning as just another in a string of technological "flavours of the month" that will soon pass by, making way for the next great thing. But it would also be foolish.

This time, perhaps, things are different. Against a background of more than 30 years of effort, with not much to show for it, there are signs that e-learning is no longer to be taken so lightly. Everyone have the opportunity to capitalize on the virtual institutionalisation of the Internet into our university and our lives. E-mail is as ubiquitous as our street address, and almost all .universities and governments now have some presence on the Web. The technology that is used for e-learning is as commonplace as the telephone, and almost as easy to use. For the first time, the transition to e-learning will not require people to buy and learn a special-purpose and complex piece of equipment. In the near future most learners will know how to use the tools of their new learning environment before they need to use them (Rosenberg 2001:306).

Learning, like e-government, will soon become commonplace. There will no longer be a need to differentiate "e" from "non-e". A new generation of computer-savvy workers will see to that. But although the "e" may be gone (and e-learning will be transparent), learning will still be as important as ever. Today, the convenience and availability of e-learning is what attracts people. Eventually they will be as discriminating about quality as well. Thus, the ultimate challenge is not taking our eyes off the ball. Learning and performance improvement is what's important as far into the future as anyone can see.

CONCLUSION

It is significant that the problems anticipated by staff with regard to embracing instructional technology are not new. Fears of faculty becoming redundant, concerns about lack of resources and resistance to educational innovation have been evident since the days of traditional mainframe CBT and indeed even since the advent of radio and television. The one guiding factor or shining light that we should hold aloft is that good pedagogy remains good pedagogy regardless of the tools, media or technology at our disposal. The enthusiasts, champions and innovators among us find ways and means of overcoming barriers. The increased use of instructional technology by faculty leads to a changing role, not only for students and faculty, but also for institutional service departments. The case study described in this article found that after facilitating the progress of faculty along the adoption curve, support departments such as TLEI can in future become less involved in the process of championing e-learning, and focus rather on consultation, development and training of faculty and students.

This article has described some of the opportunities offered by e-learning, as well as the adoption of technology in the School of Public Management and Administration at the University of Pretoria. The School has successfully advanced along the adoption curve, despite initial reasons for slow adoption of technology by faculty. The road ahead has many unknowns, but promises to pose stimulating and exciting opportunities as we come to accept that the only certainty ahead, is change.

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