Introducing entrepreneurship through e-learning to all students at Cape Technikon, a case study

I. Smit

Cape Technikon

Theme:

How to Build a Knowledge society in the Western Cape

Abstract:

It has become clear that most developing countries identified that the need for improvement and growth lies in the ability of the general society to support themselves through entrepreneurial activities. The African Renaissance and NEPAD are such initiatives, through which Africa can resolve most of their own problems by empowering it's people.

In a recent survey commissioned by the Ewing Marion Kauffman Foundation[1], approximately 45% of children shows an interest in starting their own business and cited being your own boss, followed by making more money and following a dream as the main reasons. South African statistics indicate that between 7 and 10% of young people venture into entrepreneurial activities.

The Cape Technikon is a Higher Education Institute, delivering diplomats and graduates to the industry through career-focused education and training. Through its e-Learning Centre, the Technikon has initiated an on-line entrepreneurship programme aimed at providing entrepreneurship training to all students at tertiary level, secondary school level as well as bringing the broader public in contact with valuable entrepreneurial course material to develop sustainable entrepreneurial abilities. This programme is significant as it will make an early identification of entrepreneurship potential at school level possible and empower educators to facilitate entrepreneurial development. This programme is designed to meet the following needs experienced by under-prepared students who enter the workplace:

*!	To expose all learners to develop their entrepreneurial skills.*

*!	To build the capacity of learners to cope in the workforce.*

!   To teach educators in empowering their learners with relevant knowledge and skills.

!   To address the needs of the whole person from a self-esteem perspective to be able to generate a sustainable income.

Looking at the mode of delivery

Higher education institutions have an obligation to deliver high quality teaching using all means to their disposal. The question is always whether learning has improved by introducing technology, or by using Distance Education.

To ensure that learning takes place, the introduction of a course management system may become a necessity and the use of the Intranet, the Internet and electronic tools must be evaluated to ensure that teaching, using technology, leads to learning. To achieve this, the teachers who can liberate themselves from the shackles of their own learning styles find themselves free to enhance their own teaching, adding value to the way learners should learn. Thus the paradigm shift required lies more with the teacher than the learner who is less intimidated by technology (Reksten p18 [2]).

By blending web-based interaction (e-learning) with the familiar talk and chalk methodology, in a new mode of transfer, we have the best of two worlds as blended learning allows learners to study anytime, anywhere and in any way. We have to embrace and not ignore the influence it may have on the shaping of teaching methodology in this rapidly changing techno-environment.

Defining Distance Learning and Distance Education

There is a definite trend to move away, or at least enhance, learning by using technology. This should not be done as an add-on, but it should become part and parcel of the way that educational methodologies should be adopted, based on sound research and experience. At the Cape Technikon, the introduction of e-learning started in 2000 and went through a rigorous evaluation period, a structured project phase during 2001 and 2002 and was finally accepted as part of the didactical array of tools available to lecturers to add value to their teaching in 2003. The decision to support e-learning was based on research during the project phase where a

marked improvement in grades and a definite move from teaching to learning in the modern educational arena. This process also allowed for new development in lecturer training on the introduction of technology in education. The main factors that influence this development is attitude of lecturers, who may see this as a threat of being replaced by technology, the reality of work overload inhibiting development and the availability of technology.

Table 1, Belanger and Jordan p 8 [3]

Term	Definition	Source
Distance education	"variety of educational programmes and activities.... [where] the learner and teacher of physically separated but.... efforts are made.... to overcoming the separation using a variety of media"	UNESCO, 1987
Distance learning	"category of training which is technology-based and where the teacher and learners are separated geographically"	Whalen and Wright, 1998
Flexible learning	"all those situations where learners have some say in how, where, and when learning takes place"	Ellington, 1997
Technology mediated distance learning	"learning involving the implementation of information, computing, and communication technology applications"	Webster and Hackley, 1997

It is sometimes unclear what institutions mean when they either stick to a borrowed definition, or add value to learning by mixing modes of tuition. I think it is best to say that residential institutions should investigate and install technology-mediated distance learning methodologies.

Based on our experience the use of technology assisted learning in Tertiary Education at Residential Universities and Technikons may be defined as: " a methodology in which learning is enhanced by using all available mediums and technologies to facilitate communication and

I. Smit, Cape Technikon.

interaction between the lecturer and student. Education can be extended outside the classroom or it can be facilitated at a distance, synchronous or asynchronous, using a variety of instructional applications, methods and activities with the aim to add value to the learning process."

The lecturer must be willing to sacrifice their role as teacher and "edutainer" (educating and entertaining at the same time) and become a facilitator, or even a change agent in the student's learning experience. Scanning the development and research of pedagogy it becomes obvious that there is a definite trend to change from a teacher-centric to a learner-centric educational model.

Abbey [4] supports this and highlights a new trend called learning with real cases. This concept ensures that learning becomes more targeted. Available, affordable and powerful Information and Communication Technologies (ICT) boosted the development of distance educational techniques and in doing so contributed to it becoming more popular.

Distance education with ICT not only brings blessings. In the worst-case, learners learning the wrong things, become de-motivated, start learning by heart, and so on. Therefore, another thing that needs to be signalled, is the growth of competency based education. This educational approach, which shows many similarities to case-based education or problem-based education, presented real-life problems to learners. These problems are intended to stimulate active learning, instead of surface learning. Learning becomes much more similar to working.

Therefore the concept of learning with real cases is a combination of on the job training and on-site learning combined with the assistance of ICT. Learning-by-doing with real assignments from practice is the main focus. The ICT environment serves as a workspace for learners who worked together on real cases and reflects on the following four central tenets: (Abbey p 15 [4])

- Learning is enhanced by problem solving.
- The ICT tools are to reflect a realistic problem and use authentic activities that the learner will engage in during their career roles.

I. Smit, Cape Technikon.

- Collaborative work is central to learning with real cases. Learners are expected to solve problems and complete assignments in groups. And learners work in collaborative groups, they are forced to articulate and reflect upon the thinking.
- Learning and the acquisition of problem-solving skills need to be scaffolded.

Case studies (Brown [5])

Fashions come and go in all branches of human endeavour. The activities formerly known as 'teaching' and 'training' are now commonly referred to both individually and collectively as 'learning' and 'development', reflecting a change in philosophy from teacher-centred to learner-centred processes. Along with this change there has been a growing emphasis on the design of more 'open' or 'flexible' learning experiences, which allow learners to work at times and in ways that better suit their individual needs and situations. New technologies have often been the drivers, or at least the enablers, for new learning strategies whereby learners and teachers are not necessarily all in the same place at the same time, i.e. open/distance/flexible learning.

Why bother with open learning?

The obvious question asked by Brown [5] when considering the introduction of open learning into an established learning environment is 'why bother?' Traditionally, for most people and most subjects, learning has taken place in a face-to-face environment, led by a teacher, instructor, or lecturer. However, pressures are now growing that serve to undermine the traditional structure of learning provision across all sectors. Relative to other competing nations, western countries (the UK and USA in particular) exhibit low levels of attainment in schools, low levels of participation in HE, and under-skilled and inflexible workforces, with shortages of key skills apparent even in times of recession.

According to Brown [5] there is an increasingly urgent need for cost-effective, rapid retraining of the European workforce. Factors contributing to this need include: general competitive pressures to cut costs; the need to cope with different work patterns (encompassing job sharing, part-time working, teleworking and career breaks); a skilled labour shortage due to the decline in birth rate

and under utilization of women and minority workers; rapid changes and advances in technology; rising unemployment and the consequent increased competition for jobs; decentralization and globalisation of corporate resources; and increased labour mobility within the EC. Thus there are imperatives not only for more cost effective learning methods, but for wider access to learning services and higher quality results. The learning sector environment is clearly changing in a way that makes it more receptive to new approaches.

This is also the case in Southern Africa where tertiary training institutions are finding themselves in a highly competitive market, trying all the latest ideas and battling with the ever-decreasing state subsidies. Social responsibilities are difficult to fund and programmes linked to subsidised funding formulas have priority. The needs of the South African and African communities are the same as developed countries, only the resources and skills levels are much lower. The need for new ventures, job creation and economic growth are recognised as important to stimulate the economy and allow for sustained development. Government initiatives, like the national skills training programmes, are a clear indication that the need for training as the basis of growth and development of the peoples of any nation is obvious and the educational institutions at all levels should embrace this.

We can learn from Western case studies on education. Although we in South Africa are not on the bleeding edge, we are close enough to the cutting edge of utilising some of the best technologies in the improvement of teaching methods. The most important factor why it is not implemented, or where implementation may be slow, may be the human element. There is a natural resistance to change and the average teacher finds him- or herself scared to wander outside their comfort zones. The reasons given (Brown p 3 [5]) for initiating change differ in detail from context to context but the underlying motivations are similar:

! increased learner access to learning;

! reduced learner drop-out rates;

! enhanced learning quality and strategies;

! wider range of learning (options) available;

! more effective use of skilled tutors;

I. Smit, Cape Technikon.

!   reductions in costs;

!   reduction/elimination of time and place dependence for interactions between learners and material, learners and tutors, learners and peers.

However, it is important to recognize that the history of new technology in teaching has not been a great success (Ely and Plomp, 1989) [6]. Successive waves of new learning media (print, audio, video, interactive video, computer-based training (CBT), CD ROM, etc) have met with difficulties and in many cases, after the initial enthusiasm/funding has been exhausted, the particular innovation has been quietly abandoned, resources reallocated and 'business as usual' reinstated.

If new learning technologies are so crucial to future success then it is important that we get their introduction right and learn from the experiences of others who have already worked their way up the learning curve.

Lessons learned

The introduction of multimedia and technology is a change process. To be successful, a clear institutional vision is needed; individuals will resist that change and they will be confused as to what is required. It is very challenging for a support function, like academic development and training, to introduce a compelling vision that the business relates to.

Technikons and Universities of Technology do career driven training and must be sensitive to take this into consideration when designing courses and defining learning methodology, both in their formal training programmes and in their lifelong learning short courses.

The most simple lesson is that courses must:

!   meet the current business and corporate need;

!   be relevant to the business environment;

!   ready on time;

!   be flexible (and not didactic in design);

I. Smit, Cape Technikon.

! make full use of a range of learning approaches and styles, including using visual, aural and if possible feeling senses.

The advent of the World Wide Web promises some solutions to the problems faced according to Brown (p97 [5]). The ready accommodation of learners to the Internet as an accepted cultural activity and the rapid take up of its hyper-text interface means that learners may be more willing to interact with the courseware, especially now that the book can be integrated with the software by embedding the interactive exercises into the reference side of the material. Learners can print out any part of the information, the dictionary and the grammar can be consulted while studying the whole text, not only the brief dialogues; in short, the course can be turned into interactive study material in parallel with the classes rather than just tasks and exercises that repeat the revision/reference syndrome.

Some institutions, such as Ohio State University, decided that it is time to start looking at the learners wanting a just-in-time-training of fit-for-me approach. Heterick and Twigg [7] states that techniques are lagging behind the technology and that we must take bold progressive steps in our thinking and planning for future training models.

Discussion

Ehrlich et al [8] did research on the impact of entrepreneurship training programs on an individual's entrepreneurial self-efficacy and found that their own as well as several other studies have shown that entrepreneurial training programs have a positive impact on participant's subsequent performance in new ventures because students will temper their general optimism and inflated expectations when they become aware of the realities and challenges of venture initiation.

As was demonstrated above, there is more than enough evidence that the training of future entrepreneurs can take place in a blended e-learning environment. It will allow for students to

get to grips with the theory and also to get their hands dirty with a business plan. Introducing this module at the Cape Technikon and incorporating it with the current curriculum was the challenge of the first batch of lecturers adopting the entrepreneurship module. The model used is to have a self-sustained general module available to all students on a Content and Learner Management System where the lecturer can adapt the course to specific needs and to ensure that other entrepreneurial activities and existing curriculum will be enriched. This module can then be accessed through the Internet or Intranet and it can be customised as part of another course, or as a standalone credit-bearing module. The assessment can be tailored according to the needs of the lecturer.

The first design of the entrepreneurship module was introduced in 2003 and 2660 students were introduced to a course on entrepreneurship. This module was incorporated within 15 courses in the faculties of Applied Sciences, Management, Engineering and Education. The results and evaluation of the outcomes of this module is currently under way. The second version of this module is now under development and will be adapted to the needs of lecturers and students for implementation in 2004.

The quality of this programme, can only be determined through assessment and local findings can find support from authors such as Morgan and O'Reilly[9] who, when looking at different definitions of assessment, have found in different definitions of assessment a couple of significant common themes:

!	Assessment is a human activity, involving interactions aimed at seeking to understand what learners have achieved.
!	The primary purpose of assessment is to increase learners' learning and development, rather than simply to grade or rank learners performance without first assessing it, but it is implied that grading is a secondary activity to the primary goal of helping learners to diagnose problems and improve the quality of their subsequent learning.

The quality of the learning process must also be evaluated through assessment strategies. Some of the evaluation activities available and utilised within the electronic module are:

I. Smit, Cape Technikon.

! **Teamwork and collaborative assessment tasks**. Until the emergence of the Internet and the World Wide Web, the concept of teamwork and collaborative assessment in open and distance contexts had been restricted to those situations where an on-campus, residential or community-based component was to facilitate.

! **Online dialogue and debate**. With freedom from any synchronous demands of communication, e-mail or conference-style discussion can allow a learner the time for deeper reflection, critique and analysis before contributing to online dialogue. Seminars, small group discussions, small working groups (problem solving, research projects, etc), team presentations/moderating by learners, peer learning groups (including co-authorship of assignments) and research assistance were the best methods to apply.

! **Simulations and role plays**, are representations of real-life contexts in which scenarios are developed either by individual learners or by learners in response to others. There has been little or no exploration of this in traditional distance education, but the blended e-learning module allows for this.

! **Problem solving.** Online problem-based scenarios are delivered either as multimedia and text-based components prepared in advance, or through the facilitation of a problem-solving communication processes. Assessment methods include problem scenarios or simulated events which unfold during the course with increasing levels of complexity.

! **Online testing.** A new opportunity brought about by online technologies is the capacity for learners to undertake assessment at home or at the institution in their own time, rather than in invigilated examination rooms. Quizzes with immediate feedback on completion are used for assessment and the progress is based on successful completion of core sections of the course.

! **Critical thinking and making judgements**. Reports require information to be represented cohesively, highlighting issues and problems, together with recommended solutions or actions. This feature can be used in assignments to be submitted electronically and the lecturer will read, evaluate and give individual feedback.

! **Accessing and managing information**. The focus is usually upon the process and methods of accessing and managing information, rather than an end product.

I. Smit, Cape Technikon.

! **Demonstrating knowledge and understanding**. This broad ability is often assessed in companion with other activities of a higher order such as critical thinking and problem solving. Demonstrating knowledge is often not viewed as an end in itself, unless it is applied or critically examined. Skills developed within this category include identifying, describing, relating, recalling and reporting. The end product, namely a business plan can be used to conclude the course. This is used depending on the level where this entrepreneurship module is introduced in the curriculum.

! **Communication**. Written and visual communication is assessed at a distance through submitted written material such as *reports, journals and essays*. Although the emphasis is usually upon content, marks and feedback are usually awarded for logic of argument, linking of ideas, correct use of genre, clarity of expression, presentation and layout.

The early adoption of this training module follows the international trend at other Universities. Breen Bergin [10] looked at educational obstacles to the building of an enterprise culture when educating entrepreneurs in Australia. The Karpin report found that the Australian community did not support an enterprise culture and found evidence that Australians needed a better-developed entrepreneurial spirit through education and training. Investigating the attitudes of academics, they found that few academics believed that small business and entrepreneurship should be taught as compulsory subjects. With regard to content small business was a popular subject focus at the undergraduate level and almost half of the subjects taught dealt with management issues and 25% dealt with small business accounting and finance. On the post graduate level the focus was on innovation and new venture formation.

The barriers to success in this research relates well with our experience on introducing entrepreneurship training to all students in their general period of study at the Cape Technikon, namely:
! lack of teaching staff in small business and/or entrepreneurship
! low department priority
! interested teaching staff were otherwise committed

I. Smit, Cape Technikon.

Conclusion

We would like to think that all students will leave the institution with a fair knowledge of entrepreneurship to enable them to:

! Open access to the business world.

! Ensuring that all graduates are equipped with the skills and competencies necessary to function in the modern society, in particular, computer literacy, information management, communication and analytical skills.

The view is to allow this program to develop to the stage where it can be made available to secondary schools and where necessary, training needs can be targeted when these learners join tertiary education institutions.

The program must also allow for a development of a culture of lifelong learning. Entrepreneurship is also a lifelong learning process. (Ashmore [11])

Stage 1: **Basics**: In the primary grades, students should experience various facets of business ownership by understanding the basics of our economy, career opportunities and the need to master basic skills to be successful in a free marker economy.

Stage 2: **Competency awareness**: Students must learn to speak the language of business and see the business from the business owner's view. Some competencies may form part of another subject, related to entrepreneurship and small business.

Stage 3: **Creative applications**: Students should take time to explore business ideas and a variety of ways to plan the business to encourage them to create unique business ideas in a business plan.

Stage 4: **Startup**: There may need to be time for students to put ideas in practice. At this time programmes must be in place to give assistance to students to gain experience in the business world whilst supported by the institution. The faculty of business programme of business incubation in the e-business centre and students from the faculty of engineering doing a product design for industrial use are working examples within the Cape Technikon.

I. Smit, Cape Technikon.

Stage 5:   **Growth**: Often business owners do not seek help until it is almost too late. The establishment of a Technology Station at the Technikon will ensure that quality support from qualified lecturers is available on a consultancy basis to ensure that retraining and support remains available. At this stage the same e-learning entrepreneurship module is available as a standalone module for practising entrepreneurs to improve their skills. The level of interaction is enhanced to allow for the level of business.

References

[1]   Ewing Marion Kauffman Foundation, Updated Findings - Youth and Entrepreneurship, http://www.entre-ed.org/_entre/tweens.htm

[2]   Reksten L, (2000), *"Using Technology to Increase Student Learning"*, Corwin Press, Inc. A Sage Publications Company, California.

[3]   Belanger F, Jordan D (2000), "*Evaluation and Implementation of Distance Learning: Technologies, Tools and Techniques*", Idea Group Publishing.

[4]   Abbey B (2000), "*Instructional and Cognitive Impacts of Web-Based Education*", Idea Group Publishing Hershey USA – London UK.

[5]   Brown S (ed.), (1997) "*Open and Distance Learning: Case Studies from Industry and Education*", Kogan Page.

[6]   Ely, D P and Plomp, T, (1989) "*The Promise of Educational Technology: a Reassessment in Computers and the Human Context* ", T Forrester (ed.), Blackwell, Oxford.

[7]   Heterick B, Twigg C, (2001), *Food for Thought,* The Learning MarketSpace, http://www.center.rpi.edu/LForum/LdfLM.html

[8]   Ehrlich S B et al, (2003), "*The Impact of Entrepreneurship Training Programs on an Individual's Entrepreneurial Self-Efficacy"*, The Entrepreneurial Management Center, San Diego State University, http://www.babson.edu/entrep/fer/XXXVII/XXXVIIB/html/xxxvii-b.htm

[9]   Morgan C, O'Reilly M, (1999), "*Assessing Open and Distance Learners*", The Open University, Kogan Page.

[10]   Breen J, Bergin S, (2003), "*Educating Entrepreneurs: Looking at Universities*", Small

        Business Research Unit at Victoria University of Technology,

        http://www.cpaonline.com.au/fs_library_op6.htm

[11]   Ashmore C, (2003), "*Five stages of Lifelong learning*", Consortium of Entrepreneurship
        Education, http://www.entre-ed.org/_entre/5-stages.htm

I. Smit, Cape Technikon.