

# **THE VALUE OF A MULTIMEDIA STUDENT LEARNING PLATFORM IN BUSINESS SCHOOL DISTANCE LEARNING**



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# ABSTRACT

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## THE VALUE OF A MULTIMEDIA STUDENT LEARNING PLATFORM IN BUSINESS SCHOOL DISTANCE LEARNING

L.C.H. FOURIE

*An increasing number of business schools are offering distance learning courses by using information technology like the World Wide Web, satellite broadcasts, video conferencing or multimedia.*

*The aim of this paper is to determine the value of a multimedia student learning platform for the support of remote MBA students of the Potchefstroom Business School. For this purpose an empirical study was done amongst 101 MBA multimedia platform users to evaluate the multimedia platform that is presently being used in the MBA programme.*

*Although the overall opinion of the respondents reflected that the platform is functional, it became apparent that most features are under-utilised, interaction is overall low and that students mainly study from printouts. It thus seems that although the multimedia platform creates a wonderful image of technological innovation and a cutting edge learning experience, it has at this moment not yet gained the status of an indispensable or essential aspect of business school distance learning.*

*The paper also expresses concern that due to low Internet connectivity, teledensity, electricity penetration and the availability of computer equipment, many business schools and universities do not really succeed to cross the digital divide in South Africa. A rethink of the commercialisation and commoditisation of higher education is necessary in an education hungry South Africa.*

*The paper concludes with recommendations regarding the use of technology and multimedia, technology policies, the value of the World Wide Web and the danger of predisposition-through-design.*

# THE VALUE OF A MULTIMEDIA STUDENT LEARNING PLATFORM IN BUSINESS SCHOOL DISTANCE LEARNING<sup>1</sup>

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## 1. INTRODUCTION

In accordance with the general educational trend, an increasing number of business schools are offering distance learning courses by using information technology like the Internet; World Wide Web; satellite broadcasts; audiographic, video, computer-based, and multimedia conferencing; sophisticated two-way interactive real-time virtual classrooms; multi-user object-oriented environments; or multimedia (Mittner, 1996:10; Biuk-Aghai, 1999:10-11; Britt *et al.*, 1999:134; Crous 1999a:40; Fourie, 1999:1; Saba, 1999c:4; Ivala, 2000:1; Jones & Rice, 2000:1). A world wide survey of business schools found that there was a growth from 19% (1995) to 51% (1996) of schools that make use of video teleconferencing in support of distance learning (Britt *et al.*, 1999:134).

This development contributed largely to the accessibility of business education, especially for the busy manager who cannot afford to be away from work for lengthy periods of time (Biuk-Aghai, 1999:10; Dietz, 1999:46). This reshaping of the traditional business school education model is mainly driven by forces such as convenience, economics, increasing costs, as well as an increase in the requirements and expectations of learners due to new emerging technologies (JISC, 1995:1-2; Britt *et al.*, 1999:134; Tait, 1999:1).

In line with general tendencies, the Potchefstroom Business School introduced distance learning for its MBA programme in 1997. Next to text based study guides, videos, pre-recorded presentations, e-mail, facilitators, group discussions, syndicate work, a multimedia CD-Rom option exists, which offers asynchronous electronic support for use on a stand-alone personal computer with communication links to the university.

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<sup>1</sup> This paper is an expansion of research originally done by Fourie and Bisschoff (1999) regarding the use of the multimedia platform at the Potchefstroom University for Christian Higher Education.

Initially Lotus Notes was used as the electronic student learning platform, but due to heavy licensing costs, infrastructure, learning curve, technical support problems, and high maintenance aspects, it was decided in 1998 to develop an in-house student learning platform based on Internet technology and protocols. This platform integrated digitised text, video, and graphics to present various elements of the course content.

However, as the United States of America secretary of education, Richard Wiley quite aptly said: “We are far enough along in the technological revolution and its application to learning that it is time for systematic review and analysis of what works best.” (as quoted by McNabb *et al.*, 1999:1). Now that the building and implementing of the technology infrastructure is over, it is time to evaluate the effectiveness of its use in distance education, which is very much in line with the world-wide drive toward improved quality in university education by making use of technology (Sosabowski *et al.*, 1998:193). The use of technology per se is not necessarily successful. Learners deserve materials that are useful, active and contribute to their learning process and eventual success (Saba, 1999b:1).

The aim of this paper is therefore is to determine the value, functionality, and viability of the multimedia student learning platform for the support of remote MBA students of the Potchefstroom Business School. Hopefully this research will assist business schools in the planning of their programmes and integration of technology.

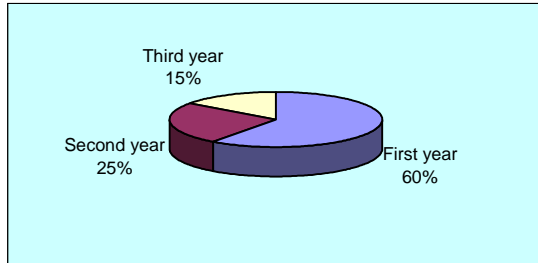
## **2. METHODOLOGY**

To determine the value of the multimedia student learning platform, an empirical study was done amongst a total population of 101 MBA multimedia platform users to evaluate the multimedia platform that is presently being used in the MBA programme. Only 101 out of total 870 MBA students selected the multimedia option (Basson *et al.*, 1999:10).

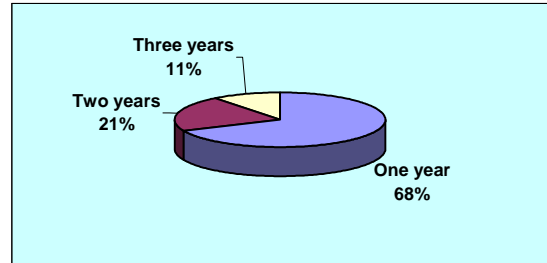
After the compilation of a questionnaire consisting of 21 questions, a total of 101 questionnaires were faxed to multimedia platform users. Despite continuous telephonic and fax follow up, only 24 questionnaires were received back, which represents a response rate of 23.76%.

### 3. DEMOGRAPHICS

The demographics can be summarised as follows:

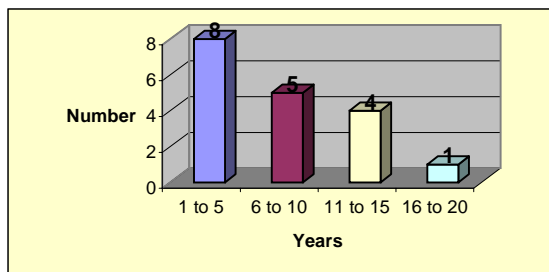


**Figure 1: Study year**

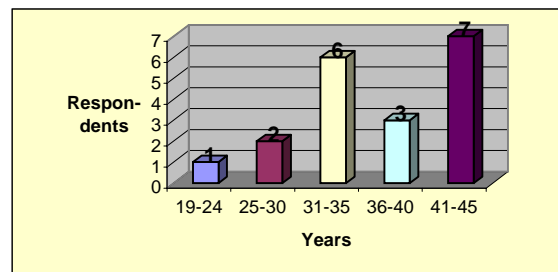


**Figure 2: Years of platform usage**

- From figure 1 it can be seen that 60% were first years, 25% second year, and 15% third year, which is generally in accordance with the overall MBA demographics, except that the first year percentage is somewhat higher, while the other two figures are lower.
- Figure 2 shows that 68% of the students have been using the platform for one year, 21% for two years, and 11% for three years, which indicates a diminishing trend.



**Figure 3: Computer experience**



**Figure 4: Age**

- From figure 3 it is evident that 44.4% had one to five years of computer experience, 27.8% six to ten years, 22.2% eleven to fifteen years, and 5.6% sixteen to twenty years.
- Figure 4 indicates that 36.8% of respondents were between 41 and 45 years old, 31.6% between 31 and 35, 15.8% between 36 and 40, 10.5% between 25 and 30, and 5.3% between 19 and 24.
- 46.1% of respondents are from middle management level, 30.8% from the top level, and 23.1% from junior level.

## 4. RESULTS OF THE SURVEY

### 4.1 Purposes

The purposes for which the multimedia platform is mostly used by users, are ranked according to importance in the following table:

**Table 1: Purposes of multimedia usage**

| PURPOSE                                    | NUMBER<br>N=24 | PERCENTAGE |
|--|----------------|------------|
| Study material                             | 20             | 83.33      |
| Videos                                     | 18             | 75.00      |
| Internet communication                     | 14             | 58.33      |
| Screening FAQ's                            | 12             | 50.00      |
| Communication with CUM's                   | 11             | 45.83      |
| Communication with TLS administration      | 10             | 41.66      |
| Fellow student communication               | 10             | 41.66      |
| Communication with syndicate group members | 8              | 33.33      |
| Newsgroup participation                    | 8              | 33.33      |
| Debate participation                       | 8              | 33.33      |
| Do not use it at all                       | 5              | 20.83      |

From the above table it is evident that the majority of platform users used the platform predominantly for non-participative activities like reading the study guide (83.33%) and viewing videos (75%). Participative activities like communication with syndicate group members, newsgroup participation and debate participation were ranked quite low (33.33%). The fact that 20.83% indicated that they do not use the platform at all, is alarming and can according to the respondents mainly be attributed to installation difficulty, little interaction, time consuming activities, e-mail address errors, a faulty CD, and the absence of an Internet connection.

The overall emphasis on the learning and communication aspects is also evident from respondents' indication of the positive attributes of the multimedia platform, namely learning support (37.5%) and good communication possibilities (25%), which were ranked the highest. The most important downsides of the multimedia platform as indicated by respondents were the problem of functionality (25%), newsgroups and other features that were under-utilised by users

(12.5%), and the absence of an electronic integration with the rest of the course for example examinations (12.5%).

#### 4.2 Communication features

Because of the importance of communication with faculty and fellow students, the study tried to determine the level of communication feature usage. The communication features mostly used on the multimedia platform are presented in order of importance in the following table:

**Table 2: Communication features used**

| FEATURE                            | NUMBER<br>N=22 | PERCENTAGE |
|------------------------------------|----------------|------------|
| Questions and answers              | 9              | 40.91      |
| Frequently asked questions (FAQ's) | 9              | 40.91      |
| Newsgroups                         | 9              | 40.91      |
| E-mail                             | 9              | 40.91      |
| Debates                            | 8              | 36.36      |
| Student news                       | 7              | 31.82      |
| Syndicate group members            | 6              | 27.27      |
| Do not use communication feature   | 6              | 27.27      |

Although the overall usage of the communication features was relatively low, it is obvious from the above table that debate participation, consulting of student news and announcements, and communication with syndicate members are extremely low (33.33-27.27%). According to respondents the apparent lack of use of the communication feature can mainly be attributed the lack of interaction.

#### 4.3 Usage of courseware or study material

To further determine the way in which learners were using the courseware a question was asked with regard to printout and screen study. The way in which the platform users use the courseware, is summarised in table 3:

**Table 3: Courseware usage**

| <b>METHOD</b>                                      | <b>NUMBER<br/>N=22</b> | <b>PERCENTAGE</b> |
|--|------------------------|-------------------|
| Make a printout and study from the computer screen | 11                     | 50.00             |
| Do not use feature                                 | 5                      | 22.73             |
| Make a print-out of material and use only that     | 4                      | 18.18             |
| Study directly from computer screen                | 2                      | 9.09              |

It is alarming that only 9.09% of respondents were using the courseware in the way it was meant to be used, namely by studying from the screen. The major reasons given by respondents for making a printout of the study material were the need for continuous access for example during power failures, study group meetings and exams (6 respondents), and the unfamiliar and difficult medium to study from (5 respondents). On the positive side two respondents indicated that studying directly from the screen is valuable, mainly because of the useful search facility of Acrobat.

#### **4.4 Interaction**

Due the importance of interaction for the success of the course, the interaction of respondents with the various participants on the multimedia platform was evaluated. The result is listed in the following table:



**Table 4: Interaction with participants**

| <b>PARTICIPANT INTERACTION</b> | <b>EFFEC-TIVE</b> | <b>AVERAGE</b> | <b>UNSATIS-FACTORY</b> | <b>NON-EXISTENT</b> | <b>NOT APPLI-CABLE</b> |
|--------------------------------|-------------------|----------------|------------------------|---------------------|------------------------|
| Fellow students                | 5 (22.73%)        | 4 (18.18%)     | 3 (13.64%)             | 5 (22.73%)          | 5 (22.73%)             |
| CUM's (Lecturers)              | 4 (18.18%)        | 6 (27.27%)     | 3 (13.64%)             | 2 (09.09%)          | 7 (31.82%)             |
| Syndicate members              | 7 (31.82%)        | 3 (13.64%)     | 1 (04.55%)             | 6 (27.27%)          | 5 (22.73%)             |
| TLS Administration             | 8 (36.36%)        | 4 (18.18%)     | 4 (18.18%)             | 2 (09.09%)          | 5 (22.73%)             |
| Newsgroups                     | 2 (09.09%)        | 3 (13.64%)     | 5 (22.73%)             | 7 (31.82%)          | 5 (22.73%)             |

**N = 22**

Overall the effectiveness of the interaction with other participants was relatively low, with the interaction with telematic learning systems administration the highest (54.55%) and newsgroup interaction the lowest (22.73%).

#### **4.5 Value addition**

Respondents indicated the value that they believe is added by the multimedia platform. Their responses are presented in the next table.

**Table 5: Substantiality of value added by the multimedia platform**

| <b>VALUE ADDED</b> | <b>NUMBER<br/>N=22</b> | <b>PERCENT<br/>AGE</b> |
|--------------------|------------------------|------------------------|
| Very substantial   | 3                      | 14.28%                 |
| Substantial        | 8                      | 38.09%                 |
| Somewhat           | 3                      | 14.28%                 |
| Little             | 5                      | 23.80%                 |
| Very little        | 2                      | 9.52%                  |

**Not applicable = 1**

From the above table it can be gathered that 52.38% of the respondents felt that the student learning platform added value to their learning experience. Quite alarming is that 33.33% indicated that the platform added little or very little value.

In the light of the above it is peculiar that a total of 17 respondents (80.95%) indicated that they would choose the multimedia option again. Only one reason for choosing the multimedia again was given, namely that Video CD's are easier to pause and rewind than tapes. The most important reason given by respondents for not choosing the multimedia option again was that hardcopies are better to study from and to write exams (4 respondents).

#### 4.6 Improvements to the multimedia platform

Learners were asked to indicate the shortcomings of the platform and to suggest possible improvements. The major improvements to the multimedia platform recommended by respondents were:

- ✓ Additional study material to download from the Internet;
- ✓ More practical examples of real life problems;
- ✓ Linkages to web pages relevant to studies;
- ✓ Textbooks in electronic format;
- ✓ Assignment results available on web page;
- ✓ Past exam papers available on Internet; and
- ✓ Greater participation of Course Unit Managers in newsgroups.

#### 4.7 Overall opinion

At the end of the questionnaire, respondents were asked to give their overall opinion of the multimedia platform. The results can be found in table 6.

**Table 6: Opinion of the multimedia platform**

| OPINION               | NUMBER<br>N=21 | PERCENTAGE |
|-----------------------|----------------|------------|
| Very functional       | 3              | 14.28%     |
| Functional            | 12             | 57.15%     |
| No opinion            | 6              | 28.57%     |
| Not functional        | 0              | 0.00%      |
| Not functional at all | 0              | 0.00%      |

Of the respondents, 71.43% regarded the platform as functional or very functional. According to respondents the functionality is greatly influenced by service, slow student adoption due to time constraints or lack of computer literacy, communication activity, expensive Internet access, and continuous hardware upgrades.

## **5. CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Platform**

The multimedia platform was evaluated by respondents as fast and relatively easy to operate with a modern look and feel. The overall opinion of the respondents is mainly that the platform is functional. Although quite a few suggestions regarding improvements or aspects not functioning were made, the platform seems to be accepted.

### **5.2 Usage**

From the study it became apparent that students are mainly using the platform for the viewing of study material and videos, and to a lesser extent for the communication features. It is alarming that 20.83% are not using the platform at all. Despite the natural decrease in student numbers toward the third year, there is a diminishing trend in platform usage as well.

Saba (1999a:1-2) aptly pointed out the importance of debate and newsgroup participation for the success of online learning. However, the usage of the participative communication features was relatively low with debate participation, consulting of student news and announcements, and communication with syndicate members all between 33.33 and 27.27%.

It further became evident that most features are under-utilised (e.g. compare downsides), interaction is overall low and that students mainly study from printouts. Although most users are first year students with relatively little computer experience and it can thus be assumed that there may be an increase in the overall familiarity and usage of the platform, the aim of the platform to assist in the overall learning process, was not met. Further investigation will in the light of the low usage certainly prove that the platform is not cost-effective and that the return on investment of the project will have to be revisited.

The low usage of the student learning platform can possibly be attributed to three reasons:

- The acceptability of a platform is directly related to the richness of the information it conveys (Salmon & Giles, 1997:4). Although modern in look and feel, the platform was mainly an electronic replica of the text based study guide, with communication features added. To be more successful the content will have to be enriched with typical multimedia and hypertext links throughout the electronic study guide.
- A major problem is that only 101 out of 870 students (11.61%) have opted for the multimedia student learning platform. To be successful, the electronic support platform will have to be integrated into the overall delivery planning in a more meaningful way (Wilson & Whitelock, 1998; Jones & Rice, 2000:7). There is a large amount of evidence worldwide that if left as an optional possibility, communication opportunities for participation in interactive discussions and debates do not result in educational impact. Integration will certainly imply overcoming the accessibility problem, reworking of learning material and assignment approaches (Collis, 1997). However, to present the electronic support platform only as an option will certainly lead to little use as is supported by the above empirical study. Under these circumstances, the multimedia student learning platform will not be a cost-effective method to the educational institution.
- The study also pointed out that faculty involvement in debates and newsgroups were relatively low and as such a contributing factor to the low usage of the platform. The real problem, however, is that with the commoditisation of distance learning and increased usage of technology, the resultant high number of students per faculty member inevitably also means an extension of working time and intensification of work as faculty struggle at all hours of the day and night to stay on top of the technology and respond, via chat rooms, virtual office hours, and e-mail to learners (Noble, 1998:6-7). Faculty just do not have enough time to actively participate.

### **5.3 Value**

Despite the indication of users that problems do exist with the usage of the platform, most of them did feel that the value added by the platform is substantial. It seems that although the multimedia platform creates a wonderful image of technological innovation and a cutting edge

learning experience, it is at this moment very much a nice to have and not yet essential to the learning experience. However, it remains a mystery that 80.59% of students indicated that they would again opt for the multimedia option.

#### 5.4 Crossing the digital divide

Distance learning has the capabilities of furthering socio-economic change. If the adoption of new technology and the development of a sufficient infrastructure will lead to socio-economic changes and bridge the great divide in South Africa, remains to be seen. It is certainly true that using educational technology can lower the costs of education in some instances. However, business schools will have to be careful to focus on the lowering of costs instead of on long-term development of technological competence and overall responsibility in the South African context.

The use of “nice-to-have” technology inevitably brings to mind the interesting conversation from Lewis Carroll’s *Alice in Wonderland* (p. 72):

*“Take some more tea,” the March Hare said to Alice, very earnestly. “I’ve had nothing yet,” Alice replied in an offended tone, “so I can’t take more.” “You mean you can’t take less,” said the Hatter. “It’s very easy to take **more** than nothing.”*

Unequal access to education is a growing concern in the international community. Technology in MBA distance learning will probably not solve this problem in South Africa, but rather increase the divide in a country where Internet connectivity (1:65) and even standard telephone (9.5%) and electricity penetration remains unacceptably low (Butcher, 1998). New technologies often tend to reinforce the notion that they entrench this divide rather than demonstrating practical solutions to the problem of marginalized communities. This is because, in general, they depend on learners having access to the necessary facilities at home or work, rather than being based on an assumption that learners’ circumstances might prevent them from having access to any facilities (Butcher, 1998). Although offering a rich educational experience, most of the technology presently in use in distance learning requires special hardware and high speed, high bandwidth communication networks and are thus affordable only to a very small fraction of the population in South Africa (Salmon & Giles, 1999). Even a simple multimedia electronic student learning platform requires specialised equipment not available to the majority of South Africans

as is evident from the study that only 11.61% opted for the multimedia student learning platform. The important role that computer equipment expenses play is further evident from the study in that 62.5% of respondents were still using fairly old Pentium I processors and an average of 60.3% indicated that they are not willing to spend money on additional hardware to enhance screen resolution, improve the speed of the platform or increase communication speed.

To thus believe that “the digital world will help in providing distance learning opportunities for anyone, at any time, at anywhere in the world” (Ivala, 2000:1) or even that “technology has become the great equalizer among companies and countries” (Badawy, 1998:94) is naïve and positivistic to say the least.

It is common knowledge that the growing interest of traditionally face-to-face higher education institutions in distance education methods is often a strategy for coping with dwindling finances. Almost all universities in the country, as well as many technikons, are exploring how to make use of distance education methods to open access to cost-effective education (Butcher, 1998; Crous, 1999b:48; Fourie, 1999:1). What is disquieting is that it is quite possible that the major drive in South Africa behind the present emphasis on distance learning and the widespread usage of technology may be a camouflaged commercialisation of higher education due to diminishing governmental subsidies and not necessarily pedagogical quality (compare Greyling 1999:1; Van Zyl, 2000:39). In this instance technology transformation is but a vehicle or even a disguise, and not really aimed at bridging the ever-growing divide. The present transferral of education from state to business can be compared with the transferral of education many years ago from church to state. This situation is, however, not unique to South Africa as is evident from the disturbing 1998 events at UCLA and York University (Noble, 1998:1-2).

In South Africa with our limited resources, we will have to carefully rethink the commoditisation of the educational function of higher education institutions, where courses are transformed into courseware, and instruction into technological platforms that can be sold in the prospective and highly competitive student market (compare Wild, 1995:23). A fashionably forward-looking image at the eventual expense of learners just to satisfy or impress commercial partners cannot be afforded in an education hungry South Africa. This trend can certainly lead to higher education and in particular business or MBA studies becoming the exclusive preserve of the privileged, available only to the rich and powerful. The present transformation process, which is very much based on business process reengineering (BPR) principles, should rather

focus on the uniqueness of higher education with regard to character, governance, not-for-profit nature, and scope. Maybe enterprise process engineering (EPE) focussing on an across-the-board paradigm shift with regard to innovation, as well as an engineering of the process and objectives, would be a better methodology (Tait, 1999:1).

To focus on the not-for-profit nature of education is particularly difficult in the case of a MBA programme, where the needs of business have to be considered and close relationships with business need to be cultivated (Badawy, 1998:101). Delivery to a dynamic and competitive market will therefore certainly remain a principal area for innovation, even more than content (Wild, 1995:18). However, when deciding on the means of delivery, business schools will have to take the current digital divide into consideration and focus on improving the business quality through education.

## **5.5 Recommendations**

Based on the empirical study and the above-mentioned conclusions and concerns, the following recommendations with regard to improving the value of an electronic multimedia student learning platform can be made:

1. To be effective technology should be linked closely with core learning and instructional outcomes. Within the present framework of limited higher education funding and masses of people that do not have access to high technology, there is certainly no room for nice-to-haves or the belief that technology is the panacea for everything. Technology on a MBA level will have to focus on the development of higher-order thinking and collaboration skills, otherwise it will be nothing more than a “high-tech chalk” gimmick.
2. Many educational multimedia developments replicate what can be done by other means, often with little or no perceptible added value. A multimedia student learning platform should achieve real engagement by learners with the subject of study, meaningful tasks, discourse, and reflection. (Devine, 1998).
3. Educational institutions should be clear about their profile and priorities with respect to delivery and participation options, as a hybrid of models will escalate the costs of quality

education and increase the risk of failure. A hybrid of models and several course options cannot be cost effective.

4. The use of technology in the MBA programme should be evaluated regularly to determine the effectiveness and to make sound decisions for continual improvement.
5. Policies that govern technology usage at business schools should be transformed regularly as technology changes. It became evident from the study that because computer based examinations are not available, most students made printouts of the text on the CD-Rom, thus thwarting the original intention of the student learning platform.
6. The success of a multimedia support platform depends to a great extent on collaboration. MBA programme co-ordinators will have to see that students and course unit managers actively participate in debates and newsgroups. Due to the high student-lecturer ratio this may imply additional assistance to faculty, rather than the present focus on administrative support.
7. Multimedia support platforms should adopt a dynamic architecture in the present information-rich environment. Due to the abundance of content around us, support platforms should rather include effective management tools like measuring prior knowledge, tracking, and audit trails, development of learning contracts, providing feedback, and meta-cognitive tools to allow for variation in distance learning. Maybe we have focused in our design of multimedia platforms too much on choosing, chunking, sequencing, producing, and presenting content for a hypothetical learner audience, in stead of helping the learner to find content that is relevant to his/her level of knowledge and understanding of the course.
8. The World Wide Web is hailed by many as one of the most significant advances in teaching technology since the invention of blackboards and chalk. Due to the many advantages of Web based learning and indications that this tool will become a standard in distance learning, it is recommended that the possibility of dynamic Web based learning be researched as an alternative to a static multimedia learning platform (Ivala, 1999). Widespread use of interactive Web-based courses in business schools is still very distant in South Africa. World wide only 31% of business schools offer Web-based courses. The small figure is mainly due to the requisite degree of technological infrastructure (Britt *et al.*, 1999:139). However, the



high cost of sufficient bandwidth remains a problem. Hopefully the Internet 2 initiative, based on new protocols and upgraded backbones, as well as the multi-media Asynchronous Transfer Mode (ATM) network technology and low-orbiting satellites, will alleviate the situation (JISC, 1995:5-6; Biuk-Aghai, 1999:11). Unfortunately this will only come at considerable cost. The solution for South Africa probably rather lies in the usage of interactive synchronous distance learning that utilises narrow (slow) Internet connections as is being used by the University of Macau. The successful usage of the current bandwidth constraints is overcome by using replicated databases, prefetching, text chat tools, and speech synthesis (Biuk-Aghai, 1999:11-17).

9. Any distance learning programme involving the use of technology, will have to avoid the danger of predisposition-through-design, as has been seen in the classic example of Robert Moses's New York City beach bridges which were too low to allow passage of busses, thus keeping the poorer people away from the beachfront while at the same time welcoming the more affluent, newly mobile (car-owning) middle class in the 1930s. The design itself, rather than the hardware of bridge decks, roads, and beach access points, defined what could later be done with the system once it had been built and put into use. (Kerr, 1995). The use of technology in business education in South Africa may create such a predisposition-through-design and should be carefully studied before implementation. To possibly overcome the problem of the availability of technology, the possibility of creating delocalised computer laboratories certainly warrants further investigation.

## **5.6 Conclusion**

Two major issues were touched on in this paper, namely the importance of the correct design of a multimedia platform, and the obligation to constantly keep the crossing of the great divide in South Africa in mind when implementing technology in business education. The use of technology is valuable and can greatly enhance the learning experience in business studies. However, the unique situation in South Africa with so many people that do not have access to computer equipment, telecommunications or the Internet, certainly warrants a rethinking of the usage of technology in business school distance learning. Otherwise technology like the multimedia student learning platform will remain the underused and expensive privilege of the rich.

# BIBLIOGRAPHY

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- BASSON, J.F., BISSCHOFF, A. & FOURIE, L.C.H. 1999.** Ondersoek na die gehalte van telematiese MBA aansoekers vir 1999. Potchefstroom: PBS. 14 p.
- BADAWY, M.K. 1998.** Technology management education: Alternative models. *California Management Review*, 40(4):94-116. Summer.
- BISSCHOFF, A. & FOURIE, L.C.H. 1999.** A survey of telematic student learning platform usage. Potchefstroom: PBS/TLS. 14 p.
- BIUK-AGHAI, R.P. 1999.** Supporting distance education over the Internet. *Educational Media International*, 36(1):10-18. March.
- BRITT, J.A., FISHER, D.M. & LEVINE, G.R. 1999.** Business school distance learning resources and uses: 1997-1998 academic year. (In Moore, D.L. & Fullerton, S. eds. Contemporary business readings. Ypsilanti: Academy of Business Administration. p. 133-140).
- BUTCHER, N. 1998.** The possibilities and pitfalls of harnessing ICTs to accelerate social development: A South African perspective. SAIDE: Johannesburg. April. Available on the Internet: <http://www.saide.org.za/butcher1/unrisd.htm> [Date of use: 14 April 2000].
- COLLIS, B.** (collis@edte.utwente.nl) **1997.** Educational materials and approach in distance learning. [E-mail to:] Bohle, W. (CT/CTIT) Nov. 30.
- CROUS, I. 1999a.** Dié onderrigmetode groei. *Finansies & Tegniek*, :40. Aug. 13.
- CROUS, I. 1999b.** Telematiese onderrig laat getalle groei. *Finansies & Tegniek*, :48. Aug. 13.
- DEVINE, J. 1998.** Multimedia and the Internet making a real difference? *European journal of open & distant learning*. Available on the Internet: <http://www1.nks.no/eurodl/shoen/Devine.html> [Date of use: 15 April 2000].
- DIETZ, J. 1999.** The relevance of executive MBA programs as related to student expectations, satisfaction, and the needs of sponsoring companies. *Journal of the academy of business administration*, 4(1):46-58. Spring.
- FOURIE, L.C.H. 1999.** The World Wide Web as instrument for competitive intelligence in a tertiary educational environment, *South African Journal of Information Management*, 1(2/3). Sept./Dec. Available on the Internet: [http://general.rau.ac.za/infosci/raujournal/peer-reviewed/peer\\_reviews\\_fourie.htm](http://general.rau.ac.za/infosci/raujournal/peer-reviewed/peer_reviews_fourie.htm) [Date of use: 15 April 2000].
- GREYLING, C. 1999.** The changing education environment in S.A. Johannesburg: ABSA. 10 p.
- IVALA, E. 1999.** The Internet and distance education. (Paper presented at the 1st national NADEOSA conference, 11-13 August 1999. Available on the Internet: <http://www.saide.org.za/nadeosa/conference1999/ivala.htm> [Date of use: 14 April 2000].

- JISC (Joint Information Systems Committee). 1995.** Exploiting information systems in higher education: An issues paper. Available on the Internet: [http://www.jisc.ac.uk/pub/r4\\_95.html](http://www.jisc.ac.uk/pub/r4_95.html) [Date of use: 29 March 2000].
- JONES, N.B. & RICE, M. 2000.** Can web-based knowledge sharing tools improve the learning process in an MBA consulting class? *T.H.E. journal*, April. Available on the Internet: <http://www.thejournal.com/magazine/vault/A2786.cfm> [Date of use: 15 April 2000].
- KERR, S.T. 1995.** Toward a sociology of educational technology. (*In Handbook of research on educational technology*). Available on the Internet: <http://faculty.washington.edu/stkerr/ethb94.htm> [Date of use: 14 April 2000].
- McNABB, M., HAWKES, M., & ROUK, Ü. 1999.** Critical issues in evaluating the effectiveness of technology. Available on the Internet: <http://www.ed.gov/Technology/Tech/Conf/1999/confsum.htm> [Date of use: 29 March 2000].
- MITTNER, M. 1996.** Andy Andrews – nuwe visie vir sakeskole. *Finansies & tegniek*, :10-11. Oct. 11.
- NOBLE, D.F. 1998.** Digital diploma mills: The automation of higher education. *Firstmonday: Peer-reviewed journal on the Internet*, 3(1). Available on the Internet: [http://www.firstmonday.dk/issues/issuier\\_1/noble/](http://www.firstmonday.dk/issues/issuier_1/noble/) [Date of use: 29 March 2000].
- SABA, F. 1999a.** Helping students learn online: Learning how to learn. Available on the Internet: <http://www.distance-educator.com/der/help.htm> [Date of use: 29 March 2000].
- SABA, F. 1999b.** Architecture of dynamic distance instructional and learning systems. Available on the Internet: <http://www.distance-educator.com/der/architecture.htm> [Date of use: 29 March 2000].
- SABA, F. 1999c.** The death of distance and the rise of the network society. Available on the Internet: <http://www.distance-educator.com/der/death.htm> [Date of use: 29 March 2000].
- SALMON, G. & GILES, K. 1997.** Training virtual management teachers. *European journal of open & distance learning*. Available on the Internet: <http://www.nks.no/eurodl/shoen/salmon/virtual.html> [Date of use: 1 April 1998].
- SALMON, G. & GILES, K. 1999.** Creating and implementing successful online learning environments: A practitioner perspective. *European journal of open & distance learning*. Available on the Internet: <http://www1.nks.no/eurodl/shoen/salmon2/index.html> [Date of use: 15 April 2000].
- SOSABOWSKI, M.H., HERSON, K. & LLOYD, A.W. 1998.** Enhancing first-year undergraduate chemistry teaching and learning quality – application of intranet-based resources. *South African journal for chemistry*, 51(4):193-199.
- TAIT, F. 1999.** Enterprise process engineering: A template tailored for higher education. *Cause/Effect: A practitioner's journal about managing and using information resources on college and university campuses*, 22(1). Available on the Internet: <http://www.educause.edu/ir/library/html/cem9919.html> [Date of use: 29 March 2000].
- VAN ZYL, J. 2000.** Wat voorlê vir tersiêre inderrig. *Finansies & Tegniek*, :38-39. Jan. 7.
- WILD, R. 1995.** The business school in a busy world. *Management decision*, 33(9):17-23.

**WILSON, T. & WHITELOCK, D. 1998.** Changing roles: Comparing face to face and on-line teaching in the light of new technologies. *European journal of open & distant learning*. Available on the Internet: <http://www1.nks.no/eurodl/shoen/wilson.html> [Date of use: 15 April 2000].