SYNCHRONOUS AND ASYNCHRONOUS TEACHING OPTIONS FOR GEOGRAPHICALLY DISPERSED LEARNERS IN PUBLIC AFFAIRS

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ABSTRACT

The emergence of South Africa into the global sphere after years of isolation, as well as international political maneuverings, trade agreements and social exchanges, necessitate a re-consideration, and sometimes a re-design, of its political, economic developmental, social policies and in particular it's tertiary educational strategies. Therefore, the employment of state of the art instructional technologies, as instruments of development, justifies thorough scrutiny as well. The University of Pretoria acknowledges the importance of utilising information technology, by applying a flexible learning model in the procurement of its academic programmes. Recently web-based post-graduate support programmes were introduced with the aim of enhancing learners' information technology literacy skills whilst at the same time affording the convenience of pursuing their studies from remote locations. The redesigned programmes in particular, focuses on the specific needs of the adult learner, thus following the principles of an andragogical learning approach. This mode of distance education also allows learners to engage in international collaboratories, for example the KELP (Knowledge Exchange & Learning Partnerships-programme) and COTELCO (Collaboratory on Technology-Enhanced Learning Communities) initiatives.

INTRODUCTION

South Africa's re-inclusion into world affairs demands a re-orientation towards how Public Affairs and other management sciences are taught to adult learners. In this context, instructional methodologies incorporating synchronous and asynchronous options to teach post-graduate programmes (e.g. The Master of Public Administration

degree programme (MPA) and the PhD in Public Affairs degree programme), within the tertiary context, offer immense opportunities: National and international tertiary educational institutions could facilitate collaboratories for geographically dispersed learners, which could facilitate trans-continental fusion of academic teaching and research.

In this article current trends in instructional technology are briefly explored and reference is made of two collaboratories that are currently utilized by the School of Public Management and Administration to teach their Public Affairs programmes. These methodologies are presented as opportunities to enhance learners' management capacity within the scope of public affairs.

INTERNATIONAL TEACHING TRENDS IN INSTRUCTIONAL TECH-NOLOGY

In the United States of America a number of instructional technology-based programmes are currently running from tele-courses (including video-conferencing, video cassettes and cable and broadcast television) to fully-fledged on-line Internet programmes. Although tele-courses are technically speaking old technology, they still comprise a major method for delivering distance education. Enrollment in televised courses is continuously increasing throughout the United States. It is estimated that more learners follow tele-courses in the United States than Internet courses. In some cases, tele-course designers are rapidly including new technologies into their existing programmes. These include high-speed data networks, online-discussions and digital videodisks. Many tele-courses make use of the Internet to facilitate interactions between learners and facilitators. Faster Internet connections permit video to travel freely across computer networks; video segments created for tele-courses find their way into a variety of online courses (TAD Consortium, 2001).

Colleges throughout the world, conducting their business on a tele-course basis have been in existence for a number of years. The CBS-company has introduced its Sunrise Semester in 1957. The Sunrise Semester was broadcast during the early morning sessions before the regular programming commenced. This particular programme ran for 25 years. The British Open University has been offering tele-based programmes for nearly 30 years. In China the Central Radio and Television University has 1.5 million students enrolled for its different programmes.

In the United States of America, television is viewed as an evolutionary, rather than a revolutionary step in the growth of high technology distance education. It seems as if a number of tertiary institutions accept instructional technology as an important vehicle for transferring knowledge but are hesitant to discount the importance of traditional forms of knowledge transfer such as contact and paper-based tuition.

Essentially, tele-courses can be divided into two categories of models: *documentary* and *interactive.*

Documentary models focus on a series of documentary-style video-productions. Institutions that deliver these types of courses generally assign a facilitator to manage each course and to grade assignments and examinations. Tuition is typically similar to classroom-based courses except for the possibility of additional fees levied for videotape rental or other types of technology charges. In some cases the video segments are broadcast via cable or satellite networks whilst, in some cases, videotapes are made available in libraries or through mail-rental facilities (TAD Consortium, 2001).

In the case of the *interactive* models, some form of interactivity forms part of the course-work process. As an example, the University of Maine has one of the most extensive interactive tele-course programmes in the United States. The University offers hundreds of interactive tele-courses annually. During the 1997-1998 academic year to 2000-2001, tele-courses at the University of Maine increased from 216 to 269. Internet courses grew from 12 to 142 (TAD Consortium, 2001).

Presently, the instructional technology debate in the United States concerns around how much support should be given to existing and popular tele-based programmes when there are obvious reasons to re-focus on Internet-based programmes. New high-speed computer networks create the opportunity for what is termed "tele-web" programmes. This form of instructional technology incorporates existing tele-course footage with inter-active assignments, WEB-resources and online discussion areas. In some tele-web programmes, video segments are still distributed via videotape (DVD or CD-ROM) rather than over the Internet. This is for practical reasons since video cannot yet be delivered clearly over standard modem connections. However, in the case of the Seattle Community College District, tele-course videos are broadcasting videos over a high-speed research network run by universities that are members of Internet2. These institutions are delivering the signals from their educational cable-television station over the Internet in three versions; one for modems, one for Internet2 and one for broadband connections such as Ethernet or digital subscriber lines.

An example of a Master's programme offered by the Indiana University on an online-basis is the Master of Science in Education-programme in Instructional Technology. This three-year programme is also referred to as the IST@IUB (Instructional Systems Technology @ Indiana University, Bloomington). The learners learn to develop and test processes, products and services that are ready for operational use in education and training settings. The aim is to prepare graduates who will assume design and/or development roles in public or private agencies and institutions involved in one or more aspects of instructional technology. The Master of Science in Education in Instructional Systems Technology is a 40-credit-hour programme, which requires a bachelor's degree from an accredited institution as an entry requirement. In addition, prospective learners

are required to demonstrate that they have basic computer competence on either Mackintosh or DOS/Windows computer systems in the following areas: operating systems, word processing, graphics, a general theoretical understanding of how computers work, electronic mail, file transfer, information retrieval, scanning and WEB-publishing. The prospective learners should also have consistent access to hardware and software that could support the level of complexity associated with pursuing this online programme (Bowling. Interview. 16/08/2000). The argument is put forward that similar programmes within the purview of Public Affairs and other management sciences, could be effectively conducted on the basis of this model. The web-based programme is designed to afford distance learners the following:

- a project-based curriculum with an emphasis on collaborative work and the appropriate integration of technology into all facets of professional practice;

- contextual learning through solving real problems inside and outside the classroom; and

- integration of all major skills and concepts

In lieu of the above, as managers, learners should benefit from this approach as collaborative work (between individuals who may be geographically dispersed), solving real problems and gaining experience in integrating skills and concepts in management practice, is what the modern management environment demands.

CURRENT INSTRUCTIONAL TECHNOLOGIES AT THE UNIVERSITY OF PRETORIA

The University of Pretoria has developed a new educational model based on a philosophy of life-long learning. This establishes the need for active-continual self-improvement. The model is based on the principle of flexibility in order to create the option for life-long learning on the part of the learner. The educational model (see Figure 1, *infra*) employed by the University of Pretoria could be illustrated as a matrix system with four main quadrants each of which reflects a particular flexible learning option depending on the practicality of conducting the particular programme in this mode and the needs and circumstances of the respective learners. According to the Telematics-section at the University of Pretoria, the objective is to create flexible learning options for learners in terms of the following:
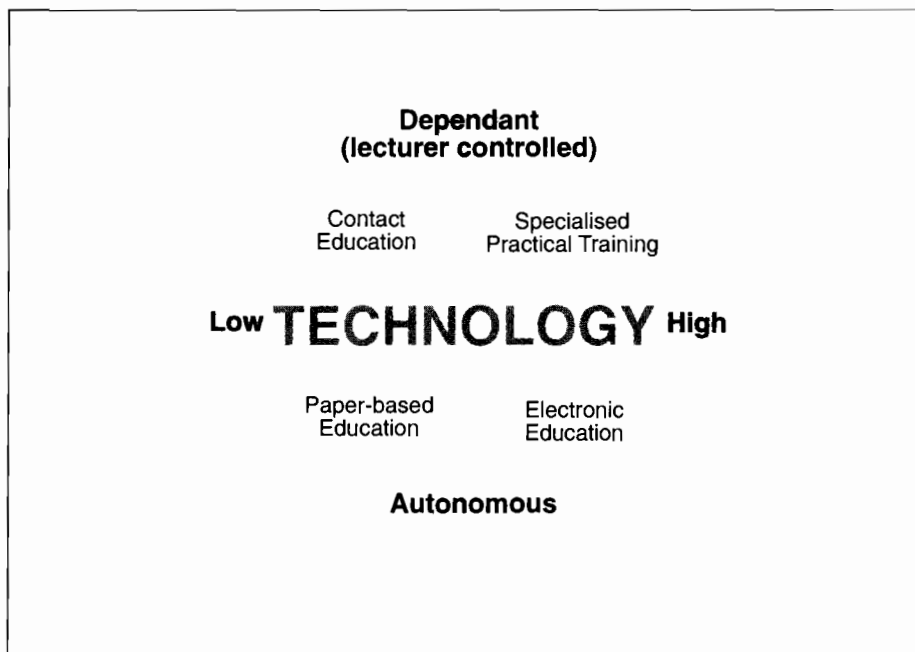
- entrance to and exit from various learning programmes
- modes in which teaching takes place
- programme compilation
- evaluation methods

- time and place of study and
- the time-scale and pace at which learning occurs.

The delivery of the programmes involves modern communication techniques incorporated into instructional technologies. It integrates the following instructional methodologies:

- Contact tuition

- Paper based distance education and

- Electronic education through technology-driven learning packages by utilising interactive multimedia, virtual campus technology that integrates with other technologies e.g. the internet and an interactive television teaching and video conferencing.

Figure 1: The Educational Model employed by the University of Pretoria

**Dependant
(lecturer controlled)**

Contact   Specialised
Education   Practical Training

Low TECHNOLOGY High

Paper-based   Electronic
Education   Education

Autonomous

With acknowledgement to: Department of Telematic Learning and Education Innovation, University of Pretoria for this representation

In a practical context, the two left quadrants constitute educational modes designed for typically the younger learner, or learners who have had little or no exposure to modern

technology (i.e computer, internet facilities), or learners situated in a rural environment with no access to main-campus educational structures. In this case, paper based distance education is chosen as a primary educational mode (left lower quadrant). As a secondary educational mode, a low level technology could be included if circumstances permit. An example would be the use of television, videos or even tele-conferencing at nearby learning centres in the rural environment, to supplement the syllabus contents. If facilities are available contact education (left upper quadrant) could be provided (as also on the main campus at particularly the undergraduate level) with the inclusion of low-level technology if necessary.

The two opposite quadrants (at the right side) imply an educational mode, which includes high technology. An example would be an adult learning group who are computer literate and have access to the Internet. Such learners would study fairly independently, with minimum guidance from the facilitator, using multimedia packages available on CD-ROM, or the latter in conjunction with WEB-based programmes (see right lower quadrant). The upper right quadrant, if chosen as a primary educational mode would imply the use of high technology and more lecturer control. An example to this extent would be the advanced learner (i.e. final year medical students) who has to make use of state-of-the-art laboratory equipment under close supervision of the medical professor. This educational mode could also include the use of a tele-conferencing facility whereby expertise from abroad participates during a practical laboratory session.

Naturally, there are a number of decision-making factors that play a role in the development of the flexible learning environment, but the determining decision-making factors are the needs and possibilities of the target group (the learners) and the specific nature and possibilities of the particular subject.

Figure 2: A Flexible Learning Model
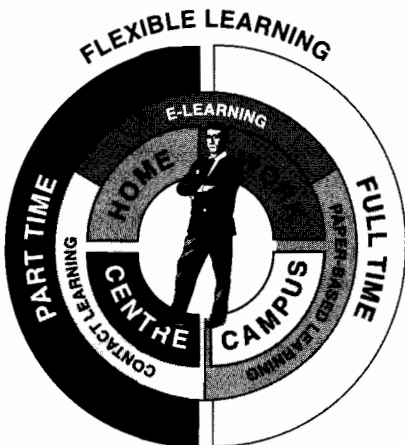
With acknowledgement to: Department of Telematic Learning and Education Innovation, University of Pretoria for this representation

The education model allows for a learner/learning-centered approach to education. The lecturer is no longer seen as the primary source of knowledge and *teaching* does not relate to the *transfer of content/knowledge* but to *learning facilitation*. The emphasis is therefore on the learning activity and learning process, with the lecturer *facilitating* learning.

Providing different educational modes as depicted in Figure 1 *supra*, learners now have the choice to study full-time or part-time, be it at home, work or at learning centres, or at the main campus of the University of Pretoria. Modes of learning could include contact learning, electronic learning, or paper-based learning. A flexible learning environment, based on the unique needs and preferences of the student, is thus created as illustrated in Figure 2 *supra*.

OPPORTUNITIES FOR INTERNATIONAL ON-LINE COLLABORATION

A current strategic thrust at the University of Pretoria is to explore and further develop new educational models together with national and international partner institutions. In this context post-graduate programmes were specifically earmarked, to be delivered by using instructional technologies.

Subsequently, two programmes of note were introduced by the School of Public Management and Administration: Firstly, a USAID initiative termed the *Knowledge Exchange and Learning Partnerships-programme* (KELP) and *secondly*, the *Collaboratory on Technology-Enhanced Learning Communities* (COTELCO) were instrumental in establishing a telematic education programme with international partner institutions to facilitate international collaboratories.

Towards the end of 1999, an agreement was signed which made the School of Public Management and Administration at the University of Pretoria a partner in KELP. The School of Public Management and Administration was selected as the lead institution for the South African section of KELP. Being the lead institution implied, *inter alia*, the redesign of curricular programmes into a web-based format as well, and the development of CD-ROMs that could be shared not only with other African universities, but also in interaction with the lead universities in the United States of America.

The primary goal of KELP is the promotion, use and integration of instructional technology in the research and learning of public affairs. The objectives of KELP are, in summary, to catalyze major improvements in African post-secondary institutions through the integration of modern information, communication, and knowledge technologies into the research, teaching and learning processes, and to increase the flow of knowledge and experience between centres of learning in Africa and the United States of America.

KELP was operationalised by research through means of web research, literature research and undertaking study trips to selected universities in the United States of America, which could be regarded as leaders in view of their achievements in the fields of either instructional technology or Public Affairs teaching. The objective of the research was to investigate and to gain exposure to instructional technology as well as subject related matter in the fields of, *inter alia*, Policy Management, International Management and Administration and Environmental Management and Development. The above fields were identified for their relevance and particular applicability in assisting to support South Africa's current re-entry into world affairs.

In considering future research co-operation between the School of Public Management and Administration (SPMA) at the University of Pretoria, and the University of Michigan (School of Information, and the Center for Afro-American and African Studies, USA) the *Global Graduate Seminar on Globalization and the Information Society*, conducted by means of the COTELCO-network, was also explored in the SPMA's quest to procure international collaboratories for post-graduate purposes (cf. http://www.cotelco.net/ GGS/GIS/2002/). COTELCO was established in 1999 by Professor Derrick L. Cogburn at the University of Michigan School of Information and Center for Afroamerican and African Studies.

The Global Graduate Seminar is an advanced, interdisciplinary course that focuses on the social, political, economic, and technological aspects of globalisation and the Information Society and also covers information systems and international communications policies. The Seminar also creates a highly-interactive distributed collaborative learning environment that can help prepare students for effective participation in globally distributed knowledge work and complex, cross-national virtual teams. COTELCO brings together students from the University of Michigan with those from other leading universities in the United States and South Africa.

COTELCO is supported by the W.K. Kellogg Foundation, the Alliance for Community Technology (ACT), Microsoft Research (MSR), the United Nations Scientific, Educational, and Cultural Organization (UNESCO), the Collaboratory for Research on Electronic Work (CREW), and in part by the National Science Foundation (NSF). COTELCO is designed to facilitate globally-distributed collaborative learning and research that enhances an understanding of the factors contributing to successful distributed knowledge work and collaborative learning between developed and developing countries (e.g., sense of groupness, impact of communications medium and task, and team member characteristics). The project also explores the social factors influencing cohesiveness, productivity and effectiveness (e.g., trust, status, legitimacy, and equity) of global virtual teams. Using a suite of commercially available and open-source web-based collaboration tools (the COTELCO Collaboration Suite), COTELCO brings together academic staff and students from the University of Michigan, with those at the American University and Howard University in the United States and the University of Pretoria, University of the

Witwatersrand and the University of Fort Hare, in South Africa, to develop and conduct collaborative research, share data, and engage in distributed weekly research team meetings (http://www.cotelco.net/GGS/GIS/2002/).

The approach is to use synchronous and asynchronous learning techniques to break the boundaries of space, time and distance. Using a geographically-distributed computer supported collaborative learning (CSCL) model the seminar employs a suite of web-based tools to create a globally networked collaborative learning environment. Participants in the seminar are immersed in key selections of the relevant literature and engage in a range of synchronous and asynchronous activities designed to foster a deeper theoretical and critical understanding of the issues covered. The primary objectives of this seminar are to:

- become familiar with and critique the recent literature and debates on the Information Age, globalization, state autonomy and the role of information and communications technologies (ICTs) in development

- develop a better understanding of the structure of the world-system, the global economy, and the mechanisms-including international regimes-that "govern" the global economy within an anarchic world-system

- develop an enhanced understanding of the technologies underlying information and communications systems, R&D approaches, and technology management

- develop an appreciation for the challenges and opportunities of international, interdisciplinary, collaborative research by participating in global virtual research teams with students from three other universities

- develop research, analytic, writing, technology and presentation skills through col-laborative research, report writing, role-playing and class presentations (http://www.cotelco.net/GGS/GIS/2002/).

Eight Masters and PhD Candidates from SPMA participated during February – April 2002 in the second semi-module of the above-mentioned Seminar. Although this participation is seen as a pilot project, it is planned to further develop curricula to align with existing graduate courses offered at SPMA, which could in the near future be conducted in col-laboration with universities abroad, using synchronous and asynchronous teaching tools.

ASSESSING THE SCHOOL OF PUBLIC MANAGEMENT AND ADMINISTRATION'S MPA AND PHD PROGRAMMES

T he School of Public Management and Administration embarked on an exercise to assess the appropriateness of its traditional instructional methodologies, especially seen against the backdrop of new technologies and the demand being placed on its students within the context of current economic and management realities. As part of this process, the demand side for skilled human resources in the market place was taken into account. Currently, Government faces numerous challenges to improve the overall capacity of its work-force through appropriate training programmes. In this context, appropriate training programmes refer not only to a process of functional managerial skills enhancement, but also appropriateness as far as convenient, efficient and effective instructional design of programmes are concerned.

In total, South Africa has near 1,2 million public officials and consequently a serious need for public officials to be professionally equipped in public affairs skills. Currently, as far as academic Public Affairs training programmes in South Africa are concerned, a large number of potential learners (prospective and existing civil servants) are geographically speaking unable to pursue their studies. Although distance-learning options do exist (e.g. UNISA) these, for various reasons do not meet with the requirements and/or expectations of the potential learners. These problems could effectively be addressed firstly, by applying the principles of the flexible learning model, and secondly, concomitant information and communication technology skills can be taught to Public Affairs students.

South African post-graduate education programmes are generally focussed on adult in-service students and thus are based on an andragogical teaching approach. This approach deals with the art and science of helping adults learn, which is quite different from teaching non-adults – called pedagogy (White, April 2000: 70). Andragogy relies extensively on the experience of the learner and their interaction with the environment. Modern andragogical thought incorporates also the interconnectedness of a set of beliefs about learners that is deeply rooted in the humanism of Maslow and McGregor. Humanism influences andragogy by emphasising goal setting by learners, while stressing the role of self-esteem and self-actualisation, underscoring self-directed learning possibilites. This occurs whilst taking cognisance of the unique characteristics and experiences of adults (White, April 2000: 71).

However, implementing the andragogical approach suggests a more loosely controlled teaching approach whereby students manage more of the learning process themselves. Practically, this approach calls for instruction to focus more on process and less on content. This may occur by for instance, allowing them to select differing learning strategies or methods (White, April 2000: 71). The andragogical model asserts that several issues be considered in formal learning, *viz*:

- allowing learners to know why something is important to learn;
- showing learners how to direct themselves through information; and
- relating the topic to the learners' experiences.

The instructor performs the role of facilitator or resource rather than process driver. Strategies such as case studies, role-playing, simulations and self-evaluation are useful in applying the andragogical approach (White, April 2000:72). In this regard, the tenets of the education model (flexible learning) followed by the University of Pretoria as referred to in a previous paragraph, in conjunction with the andragogic approach created a unique opportunity for the restructuring of post-graduate programmes at the School of Public Management and Administration.

The motivation for restructuring the post-graduate programme content, to be conducted telematically, is as follows:

Firstly, the MPA/PhD learner profile was andragogical and thus compatible to the telematics approach followed by the University of Pretoria. *Secondly*, contact tuition as the traditional method of education and training, does not allow the necessary flexibility for learners who are geographically far removed or even physically incapable of attending classes. The University of Pretoria, however, continues to offer contact tuition options for learners who favour this option in a number of innovative ways:

- after-hours classes
- lectures and specialised training in blocks consisting of a number of weeks per year and
- tutor support in particular programmes.

Thirdly, paper-based teaching is the traditional mode of distance teaching and has thus far been the most widely used form in this regard. However, the problem with paper-based teaching methodology within a southern African context, is that mail services tend to be unpredictable, untrustworthy and learners may not have access to a dedicated mailbox. According to Du Pisani (Interview. 26/06/2001), the turnaround time associated with the paper-based teaching methodology is unacceptably slow.

Fourthly, satellite television education opens the possibilities for delivering distance education to various locations simultaneously in the immediate southern Africa area. The University of Pretoria has a dedicated satellite footprint extending into the southern part of Zambia. An extended footprint extending into Uganda is envisaged for the foreseeable future (Van der Merwe. Interview. 21/05/2003). The disadvantage associated with this technology is the relative cost involved in actively engaging therein. Another disadvantage is that the recipient location should have access to the necessary, quite expensive, equipment. These factors are quite inhibitive since it will essentially exclude individual learners from following this option. As a mass education option for various audiences in

different locations, however, satellite television does seem to provide the answer (Du Pisani. Interview. 28/06/2001).

Fifthly, an attractive option for delivering education and training for distance learners is video-conferencing. Video-conferencing is an interactive form of delivering education and training to individuals and groups (the most probable audience, given the efficiency factor). From a cost-benefit point of view, this option is less expensive than the satellite television but is dependent on the availability of an ISDN linkage. Within South Africa's bigger cities such linkage is available but across the country's boundaries, ISDN availability is very limited.

The technology of web teaching requires access to particular, yet relatively inexpensive equipment, e.g. computer and Internet connectivity. In addition, a normal telephone line is required. Within most of southern Africa this form of distance education appears to be an option. There are currently approximately 14 million installed telephone lines in Africa and the number of main lines in Africa are growing by 10% per annum. In South Africa, tele-density is currently in excess of 5.5 million. The South African telecommunications company, Telkom, is focusing on expanding and servicing rural areas by, for instance, installing DCET wireless telephone technology, which is quicker, easier and less expensive to install than conventional wired telephone infrastructure. Unfortunately telephone call costs are high in Africa and this may be an inhibiting factor in some instances as far as Internet subscription is concerned. Telkom is currently offering its clients a prepaid telephone option called the Prepaid-Phone, which is a world-first service, which operates with a fixed line dial-tone phone. In addition, cellular technology is also available to address the deficiencies associated with lacking land line facilities (Du Pisani. Interview. 28/06/2001 and Van der Merwe. Interview. 21/05/2003).

PRACTICAL CONSIDERATIONS FOR A WEB-BASED PROGRAMME

Designing a Web-based course, which would incorporate the needs and aspirations of the MPA/PhD programme participant, and which incorporates the environmental circumstances unique to the adult learner in South Africa, imply that a number of factors should be taken into account:

- the geographical location of the learner
- the level of computer literacy of the learner
- the availability of computer facilities at home
- the "band width" of current South African telephone lines
- the knowledge of computer software, which support Web-programmes, of the facilitator and andragogical learner
- the volume of knowledge to be included in Web-based courses for post-graduate purposes.

As already indicated in a previous paragraph, Web-based programmes for the andragogical learner profile appears to be most feasible despite geographical constraints. Although computer literacy levels of prospective MPA/PhD candidates are in some cases low, additional computer courses are provided by the University of Pretoria to address this problem. Unfortunately not all students have access to computer facilities at home and should the introduction of a web-based course be considered, the existing mode of instruction (contact education) should not be discontinued. It should thus be optional for students to register for either the Web-based programme or the normal contact sessions, until practice indicates a swing towards the Web-based programme.

In the practical design of a Web-based programme the volume of knowledge, or the subject content, is a determining factor when decisions need to be taken on the mode of delivery of information. Thus, should the bulk of the information be available on the Web, or should the web programme only outline the course and guide the learner to obtain and manage subject contents in his/her own time? In the latter context, the bulk of the information could be made available on CD-ROM so as to save on "down load time" due to the relative "small band width" of telephone lines in South Africa, if compared with the bandwidth of similar facilities in the United States of America. Web links to important and relevant "web sites" should also be included so as to provide the learner with maximum exposure.

In designing a MPA/PhD Web-based courses, it is anticipated that the following composition of multi-media, CD-ROM, paper based information and contact education could apply, as illustrated in Figure 3.

Figure 3: Hypothetical illustration of the composition of a Web-based Programme
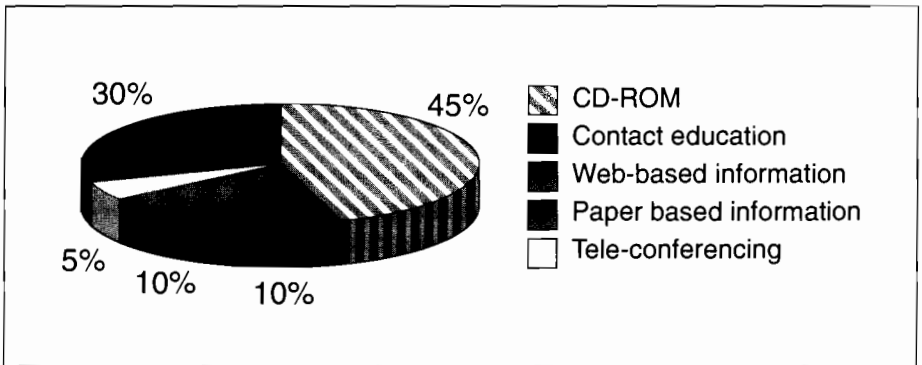
According to Figure 3, and due to large volume of information on Public Affairs not necessarily available on the Internet, or available at the University's library, almost 45% of information could be made available on CD-ROM, which will serve as an extension of the multi-media package. The latter would include numerous Web links to Web sites of major international organisations and agencies worldwide. Ten percent (10%) of the information could be paper based, which will include research on current and relevant literature available in libraries; ten percent (10%) could be contact education; five percent (5%) could be tele-conferencing (either synchronous or asynchronous) with participating academics abroad as part of the KELP and COTELCO initiatives, and thirty percent (30%) Web-based information (e.g. the instruction manual, course and literature outlines, dates for assignments and web links). A separate URL should be created for such a Web site, which can only be accessed if a participant has registered for the course.

The University of Pretoria currently uses WEBCT as a platform or "tool" to manage and support Web-based courses. One to two day courses are offered for facilitators and participants to acquaint themselves with WEBCT in order to effectively utilise the advantages of the programme. WEBCT, *inter alia*, provides not only facilities to enable the responsible lecturer to manage the group and all the relevant information, but also provides participants and facilitators with bulletin boards, conversation groups, white boards and a separate e-mail option. The design of the programmes are such that it is user friendly so as to maximise the effectiveness and benefits of Web-based courses in Public Affairs.

CONCLUSION

The re-emergence of South Africa into the new world order signified the imperative that a new approach towards Public Affairs education and training should be sought. Public managers should be afforded in-depth training and professional development in matters of public affairs and they should be able to benchmark their own functioning against international practice. Decisions taken locally may bear implications for South Africa internationally. In addition, technology is the driving force behind globalisation and international public affairs.

These developments created an opportunity to introduce MPA/PhD candidates to such technology through means of education and training programme delivery. Instructional technologies serve another purpose as well in that they accommodate geographically dispersed learners through a flexible learning model to education and training to which they may otherwise not have had access. As South African universities are increasingly becoming more popular destinations for foreign, especially African, students, the aspect of physical access and accommodation is brought to the fore.

With the aid of the KELP and COTELCO initiatives and through means of instructional technology, significant numbers of such students could potentially be accommodated with limited necessity for physical attendance of programmes. The result being that large numbers of not only South African, but also African students may receive opportunities to be educated and trained in matters concerning public affairs, which could capacitate them to contribute to their respective countries' development and internationalisation. Therefore, making extensive use of state of the art technologies to teach Public Affairs (or any other management programme) is arguably an effective way to strengthening managerial capacity in South Africa.

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