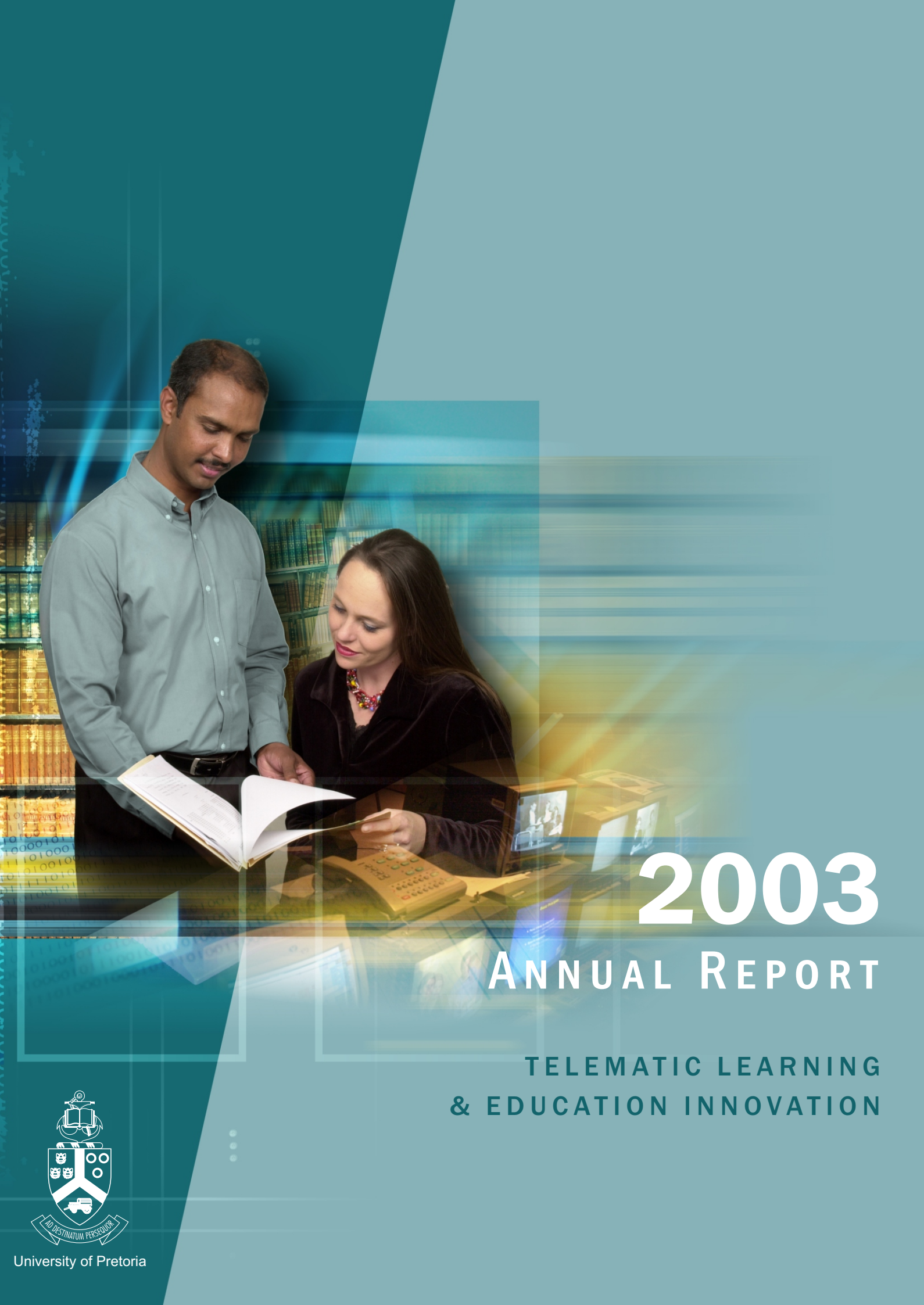


2003
Annual Report

TELEMATIC LEARNING & EDUCATION INNOVATION

University of Pretoria

Vision

To establish excellence in education at the University of Pretoria (UP).

Mission

The Department of Telematic Learning and Education Innovation (TLEI) takes the lead, facilitates and actively participates in actions aimed at education innovation, with a focus on establishing a flexible learning environment in order to address the educational needs of its clients.

Strategic Objectives for 2003 to 2005

- To occupy a leading position in terms of educational excellence (both TLEI and UP). This means that TLEI should contribute to the improved effectiveness and efficiency of activities associated with curriculum development, assessment and facilitation of learning in faculties; that educational excellence is promoted in the policy documents of the University and that senior decision-makers are influenced accordingly.
- To occupy a leading position in South Africa in terms of the use of information and communication technology in education. This implies continuous adaptation and renewal in terms of E-learning systems, educational technology and new media.
- To support undergraduate modules at UP by using appropriate information and communication technology - 100% of modules on the web with good learning facilitation (50% by 2005, 100% by 2007). The range of support may include other information and communication technologies (for example assessment, multimedia, administrative support, simulations, process models, etc.)
- To make all taught postgraduate programmes available to students in the web environment by 2005.
- To successfully apply appropriate E-learning systems in E- and M-learning environments- integrating relevant communication and delivery technologies, such as Internet Protocol (IP) conference, video-streaming and synchronous web software.
- To train UP staff in, inter alia, curriculum development, assessment, learning facilitation, E-learning facilitation and web-supported education.
- To supply appropriate educational technology in meeting venues, together with sufficient maintenance and effective support.
- To deliver quality support to off-campus students: tutor services, examination services and logistical services.
- To align and optimise support infrastructures in order to enable faculties to lower student attrition rates and raise graduation rates, taking into account the circumstances in faculties and the maintenance of standards.
- To extend the strategic positioning of TLEI by optimising TLEI as Department, our services and strategic value. This includes the communication of the impact TLEI has on the core business of the University.
- To accomplish continued organisational and system development within TLEI. This includes internal quality assurance and self-evaluation initiatives.
- To create a work environment within which TLEI human resources can effectively deliver services, are able to excel and to develop on a personal level.
- To further diversity within TLEI and reach diversity targets for 2006.
- To support strategic international initiatives in terms of consultation and training in education innovation, paying specific attention to Africa.
- To continually underpin and renew TLEI activities by targeted action research, keeping up with the latest international developments and tendencies.

Note: The above strategic objectives are being pursued in addition to the normal support service activities rendered by TLEI, such as educational consultation, instructional design, graphic, video and other related services.

CONTENTS

2003 In Review

Education Innovation

The University of Pretoria is devoted to quality education aimed at the enhancement of student learning. The environment in which the University operates, including the educational environment, is experiencing rapid changes. These changes are driven by many factors, including developments in information and communication technology [ICT] and the associated emergence of the knowledge and information society. Developments have led to new advances in electronic education and new educational paradigms such as flexible learning environments, which, in turn, have brought about entirely new ways of thinking about education. Examples are the emergence of student-centred and learning-centred approaches and flexible and outcomes-based learning.

The University of Pretoria continuously examines the basic nature of its educational provision as well as its educational paradigms and premises, including the changing roles and responsibilities of its academics and students. The University of Pretoria must understand the nature of the "University of the future" and ensure that it proactively creates that future. Like all innovative organisations, the University of Pretoria should continuously conduct research and development with regard to its own products and processes.

Innovation is one of the drivers of the University's strategy, which also applies to the educational environment. The University must maintain the momentum of this initiative to ensure that all aspects of the process of education innovation are continuously addressed. Educational productivity should increase, which in turn demands that educational processes become more effective and efficient. There should be clear improvements in the throughput, retention, graduation and dropout rates of all student cohorts. The challenge, as is the case in many innovation processes, is not only to invent, develop or identify better, cheaper and faster processes, but also to effect the diffusion and adoption of these processes by academics and students. Product innovation is equally important. It implies, for example, that there must be constant pressure for continuous improvement and renewal with regard to curricula and content, programmes and programme mixes, as well as delivery options.

Some Highlights of 2003:

- **Education induction programmes** were followed by approximately 600 new lecturers, junior lecturers, tutors and academic associates. In addition 291 academic staff members underwent training in assessment. Nearly 200 academic staff members attended courses in the UP Learning Management System [WebCT] and E-learning.
- **UP Learning Management System [WebCT].** Web support was provided to 21 200 students in 1 067 modules across a variety of programmes. WebCT 4.1 was implemented during December 2003. This version offers an improved user interface and functionality, including drag-and-drop transfer of files, an equation editor and spell checker.
- **New student online and lecturers online portal development.** The existing Virtual Campus was developed in Perl in 1998 and has since then continuously evolved to its current state. The system reached the end-of-life phase during 2003 and was not compatible with the new IT strategy set by the University. Therefore redesign and extension of the student and lecturer online environment were undertaken. The new service environment was deployed in December 2003. It enhances the existing functionality and brings the Virtual Campus in line with the IT-strategy of the University.
- **E-portfolio.** This project had its origin in the Faculty of Health Sciences, but will be developed in such a way that it has University-wide application. The e-portfolio will create a digital record of the learner's achievements. The portfolio will, in a nutshell, capture all the events which take place when assessing knowledge and performance. It includes the creation of assignments, scoring rubrics used in assessment, opportunities for the learner to submit work and provision of the final assessment by the lecturer.
- **Standardised student-training protocol.** The School of Dentistry is developing a standardised student training protocol for Patient Clinical Examination, Diagnosis and Treatment

Planning. Funding was obtained and an outside company contracted to develop this computerised system. By combining and employing the unique expertise, a product - the eCPCES - is being developed which will enhance the in-house implementation of the School's new curriculum. Development of this software is viewed as one of the strategic initiatives in the School of Dentistry. Successful implementation of the project will establish the school as one of the leaders in the field of innovative dental education. By the end of 2003 the development was entering its final stages and extensive user testing will commence in 2004.

- **Synchronous E-Learning.** There is a growing need for lecturers on campus to support their post-graduate students with synchronous software. Synchronous software enables tertiary education institutions to meet, teach, and train live online, regardless of geographic location, bandwidth, operating system, or physical disability. A pilot project was launched in 2003 as part of an international collaboration project. The aim of this project was to establish the possible usage of synchronous software to support international collaboration, communication between project team members and academic staff in collaboration activities.

- **Asynchronous video streaming of ITV broadcasts.** A pilot project was run jointly by the University and the Tshwane Metropolitan Municipality (Council). The interactive television broadcasts of the TeleTuks Schools Project were video-streamed to three participating schools via optical fibre and "last mile" wireless connections. The three pilot schools were in Atteridgeville, Mamelodi and Waverley. The schools were equipped with a suitable multimedia supporting PC, on which the streamed videos could be accessed at any time after the live broadcast.

- **Quality management system for E-education.** The E-education team provides support and training for academic staff with respect to the design and development of E-learning opportunities delivered via the Internet, or on stand-alone CD-ROMS. In October 2003 a formal Quality Management System was implemented for instructional design practitioners. A conscious decision was made not to seek ISO 9001 certification at this stage, but all components of the standard have been taken into account, so that the system will be adaptable to ISO 9001, should this be desired at a later stage.

- **Development of CD-ROMS.** Three projects were completed during 2003, including a support CD-ROM for students registered for WebCT courses. Two CD's were completed for the Health Sciences Faculty in the Departments of Dental Diagnostics and Röntgenology and Physiotherapy. One of the great challenges is to find ways of speeding up development processes. In this regard, a new product was acquired, namely TK3. This is a software application for creating virtual books and comes with several useful, pre-programmed tools for the end-user.

- **E-assessment.** Computer-supported assessment or testing increased during the year under review to more than 112 570 opportunities on the main campus, 12 350 opportunities at the Health Sciences and 1 980 opportunities at Onderstepoort. In this way, the principle of continuous assessment of students is applied without drastically increasing the administrative and skills load that accompanies it.

- **Mobile learning pilot project.** M-learning is a natural extension of E-learning and has the potential to make learning even more widely available and accessible than in existing E-learning environments. A pilot project was launched regarding the use of cellular phones and especially SMSs in three of the Faculty of Education's paper-based distance learning programmes. These three programmes: BEd [Hons], ACE [Education Management] and ACE [Special Education Needs], are offered to students in rural areas where there is little or no access to E-learning. Although less than 1% of the students have access to the Internet, more than 99% of them have mobile phones.

- **Framework for the evaluation of teaching quality.** A framework for the evaluation of teaching quality was developed. Seven generic teaching competencies were identified and criteria for each of these competencies formulated for the different appointment levels, from Junior Lecturer to Professor, as well as for Outstanding Performers.

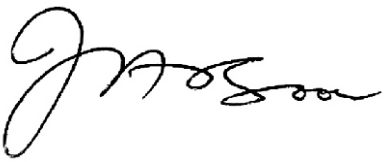
- **Action research and development.** In collaboration with other academic role players the following projects have been addressed:
  - student attrition and throughput rates in the different faculties;
  - student feedback including post graduate students;
  - on-line student feedback surveys and
  - new educational media and technologies.

- **Educational Technology.** Technology plays an important part in the University's new strategy to educate the innovation generation. Lecture halls were upgraded and equipped with fixed data projectors and more than 50 portable projectors were provided to Departments. During 2003, 69 hours of videoconferencing were provided, 122 hours of UP academic modules were broadcast and 233 hours of studio productions were made.

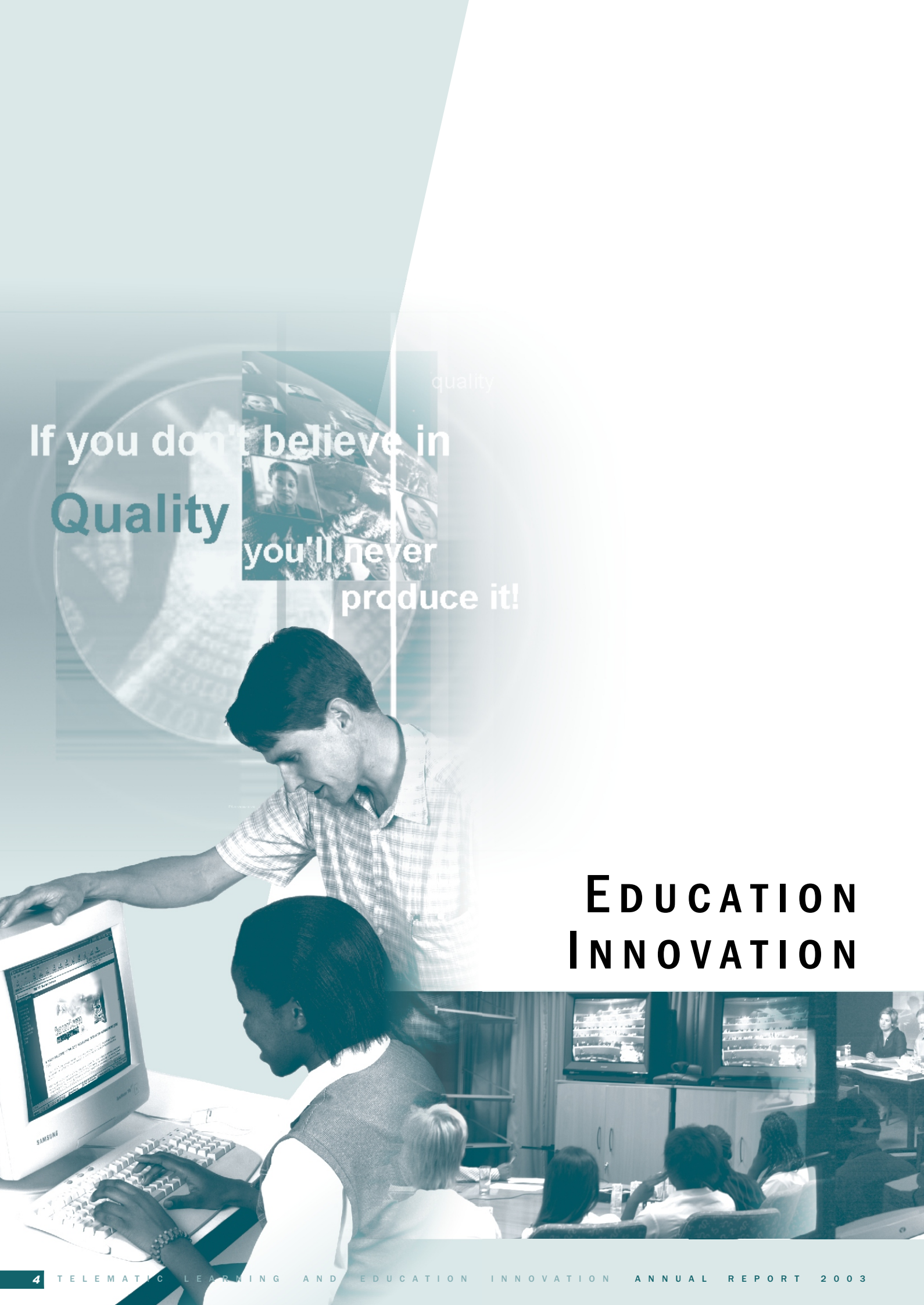
- **Partnerships with external providers.** A significant number of 21 158 students have graduated up to December 2003 from these partnership programmes. Support structures and services were introduced during 2003 to improve the success rate of pipeline students as far as possible.

- **Student support.** Student support was provided in a number of ways:
  - Television productions of 319 hours in total were broadcast.
  - Service points for interactive television broadcasts, video facilities, tests and examinations were provided.
  - Off-campus examinations were arranged for about 2 200 students.

- **Community Service through the TeleTuks Schools Project.** The Schools Project is a community-based project and a free service offered to secondary schools. This project not only aims to assist learners in gaining University entrance by improving their matric results, but also hopes to accustom them to the use of technology as part of their learning. During 2003, more than 3 700 learners at 104 schools benefitted from this project and a total of 176 hours were broadcast. The project is funded through donations and sponsorships and therefore relies on the support of corporate businesses. The success of the Schools Project depends greatly on the commitment of and co-operation between stakeholders. During 2003, negotiations with the Gauteng Department of Education led to 16 new schools joining the project. The University of Pretoria regularly evaluates the project and its value for the education and learning experiences of learners and found the project to be highly beneficial.



Prof J A Boon
7 May 2004



EDUCATION INNOVATION

The University of Pretoria is devoted to quality education aimed at the enhancement of student learning. Changes in the teaching and learning environment over the past few years, together with developments in the field of information and communication technology (ICT), have transformed the education environment. The University of Pretoria strives to be a leader in higher education that is recognised internationally for academic excellence. Establishing education excellence at UP is the driving force behind the Department of Telematic Learning and Education Innovation. The strategic foci of TLEI are education innovation, E-education and educational technology. The vision is accomplished through its mission of leading, facilitating and participating actively in actions aimed at education innovation, focused on the establishment of flexible learning environments.

New Educational Approaches

The University of the Future - in terms of its educational approach - will differ radically from the universities we know. The focus is shifting from teaching and the transfer of knowledge, to learning and the facilitation of learning processes, supported by appropriate educational ICT. Learning communities will freely tap into dynamic global knowledge and participate in learning projects that focus on the development of skills, such as problem solving and the reconfiguration of knowledge instead of the traditional mastering of subject content.

Universities are constantly being subjected to renewal because of:

- technological and social changes;
- new educational approaches;
- an increase in the importance of open and flexible learning;
- the digitisation of information and communication media;
- commercialisation and globalisation of higher education and
- the pursuit of quality.

Education Innovation takes into consideration the impact of technology and the flexible needs of learners, making the student the central focus in the design and development of learning opportunities. This approach allows the student to study either full-time or part-time, wherever he/she chooses, through the innovative integration of contact tuition and electronic education. The lecturer is the leader in the learning process: the coach, the mentor who creates stimulating learning environments within which learning can thrive.

- **Higher education should be flexible.** UP has risen to this challenge of transformation. Its new educational approach is based on a technology-enhanced flexible learning (telematic education) paradigm. This approach takes international trends in education innovation into account, while addressing the needs of a developing Southern Africa through appropriate technology-enhanced delivery systems.
  - E-learning is provided via the worldwide web (WWW) and through the appropriate integration of various information and communication technologies such as interactive multimedia, computer-based assessment, interactive television and video-conferencing and modern educational technology in classrooms.
  - Education innovation takes shape through various projects and initiatives based on change management principles and aimed at a constant renewal of educational processes such as curriculation, the facilitation of learning and assessment practices.
- **Quality pledge.** The Department of Telematic Learning and Education Innovation undertakes to implement its mission in a manner that takes into account the needs, knowledge, skills and attitudes of its clients, namely academic staff and students as well as external clients and stakeholders.

The Department is committed to the delivery of services, products and systems that embrace the principles of:

- fitness for purpose;
- client satisfaction;
- cost effectiveness;
- defined standards;
- negotiated time frames and
- continuous improvement of the Department's processes and functions.

EDUCATIONAL CONSULTANCY

Educational Consultancy supports the University's academic staff members (full time and part time) in their efforts to pursue excellence in all aspects of teaching and learning. Educational consultants work with individual staff members and departments to improve the quality of teaching and learning throughout the University.

SERVICES

Educational consultants perform a range of activities and services. They:

- provide a campus-wide consultation service addressing the needs of lecturers, departments and faculties within a flexible learning environment;
- facilitate academic programme development aimed at establishing international competitiveness;
- facilitate the development of quality teaching practices by lecturers, departments and faculties and
- evaluate teaching practices, learning materials and documentation at the request of lecturers in an effort to promote educational quality.

The educational research activities include:

- researching best practices which inform the cutting edge of international teaching trends;
- disseminating relevant information with respect to flexible learning opportunities and
- conducting applied research associated with specific education projects.

Training involves:

- developing and implementing relevant training programmes, to enable academics to create and maintain a flexible learning environment for students;
- promoting academic development (curriculum development, teaching and learning development);
- presenting education induction programmes for newly appointed lecturers and junior academic staff members;
- assisting in the training of tutors and teaching assistants in faculties and
- presenting an assessment training programme for lecturers.

EDUCATION INNOVATION PLANS

A University-wide Working Committee for Education Innovation drives education innovation in the various faculties. This committee comprises education innovation managers that have been appointed in each faculty, supported by the educational consultants. All faculties devise education innovation plans to suit their respective needs and resources. Education innovation managers have received training in change management and are actively involved in the implementation of various innovation plans.

EDUCATION INNOVATION AWARDS

The University of Pretoria promotes teaching quality and values teaching performance. Exceptional educational achievements are recognised by annually awarding two prestigious Chancellor Awards for Excellence in Teaching.

The Department of Telematic Learning and Education Innovation bi-ennially presents Education Innovation Awards to individual lecturers or groups of lecturers within the University. These prestigious awards recognise the University's academics for their exceptional contributions in the field of education innovation.

EDUCATION INDUCTION PROGRAMME

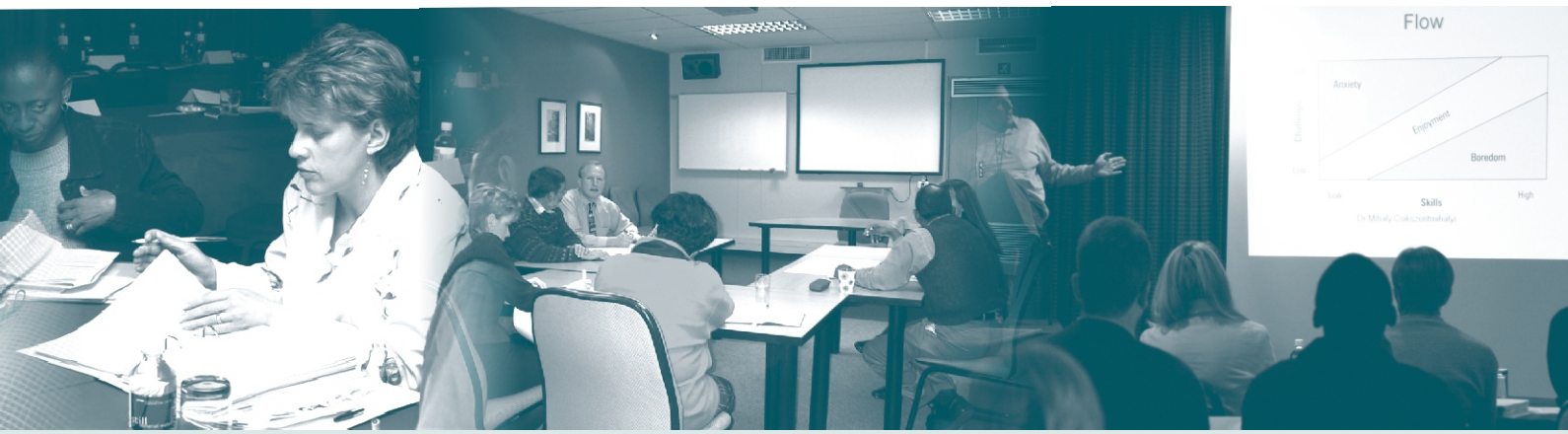
The Department of Telematic Learning and Education Innovation presents regular education induction programmes to newly appointed permanent lecturers. The programme introduces participants to the theory and skills relating to teaching responsibilities in higher education, as defined by the University of Pretoria. The programme is aligned with the National Standards for Higher Education.

TRAINING OF TUTORS, JUNIOR LECTURERS, TEACHING ASSISTANTS AND ACADEMIC CO-WORKERS

The educational consultants play an important role in the training of junior staff members in the faculties in terms of educational skills. Training and support are provided within faculties by education consultants to prepare junior staff for their responsibilities as learning facilitators.

ASSESSMENT PROGRAMME

A new initiative from 2003 is the presentation of campus-wide training programmes in assessment practice. The overall principles of assessment and the role of assessment in establishing deep learning and higher order thinking are examined. The programme is developed according to the framework laid down by the South African Qualifications Authority (SAQA) for accreditation purposes.



E - EDUCATION

The core focus of e-education is the skillful and appropriate integration of various information and communication technologies, including the worldwide web (WWW), interactive multimedia delivered on CD-Rom and computer-assisted assessment.

Instructional Design

The Department follows a team approach to instructional design. Together with the Department's educational consultants and academic staff members in the faculties, the instructional designers decide on the combination of instructional methodologies to be used within the flexible learning model. Once a project has been approved, a team is constituted which is made up of a project leader (normally the programme co-ordinator), project manager, lecturer (subject matter expert), instructional designer, educational consultant, information specialist, graphic designer and other media experts. The instructional designer then designs, develops and delivers a range of learning materials, utilising the most effective media and technologies for the specific learning purpose.

A formal Quality Management System (QMS) is in place for practitioners in TLEI. Procedures form the backbone of the online QMS and are available as downloadable documents in the system, together with links to relevant supporting documents. A QMS framework provides an interactive site map of the online system, enabling users to view the entire process and to make use of hyperlinks to navigate among the various procedures and supporting documents.

The system will be implemented and evaluated during 2004, after team members have had the opportunity of using it in practice. Quality Management philosophy includes continuous improvement of processes and products, as well as measuring client satisfaction. Client satisfaction (of students and lecturers) is measured by means of regular Web Experience surveys and interviews.

Web-supported learning

Online learning via the Internet is one of the modes of delivery used, where appropriate, in a flexible learning model. Traditional face-to-face classroom sessions are combined with online interaction, communication, learning facilitation and assessment activities. The philosophy is to use the Internet to optimise and support student learning. The University implemented WebCT as a Learning Management System and continues to support its expansion.

There are two foci with regard to preparing academic staff to teach in the online learning environment. One focus is to equip them to use technology. A basic one-day training course provides information about and practice in the basics of using WebCT. Optional intermediate and advanced courses are available to equip lecturers to become designers and, in so doing, enable them to take full control of the development and maintenance of their online courses.

The other focus is to equip academic staff in online learning facilitation. The emphasis is on the pedagogy of teaching online. A new course to address this was developed late in 2003 and consists of both online and face-to-face teaching strategies.

Student training and orientation is necessary to enable students to take full advantage of their online learning opportunities. E-education offers two-hour student training sessions in online learning in which the new role of the online student is discussed and hands-on practice in accessing and using online courses is provided.

E-education provides a Student Support CD-Rom, which includes interactive demonstrations on how to access the campus portal. It also includes user manuals and handouts for the UP Learning Management System, free downloads and student-friendly information about the library, computer laboratories and other facilities on campus.

In the interests of quality assurance and customer satisfaction, E-education administers two online student feedback surveys at the end of each semester:

- The Experience Survey probes the quality of the overall web-supported learning experience in terms of technical support and student satisfaction (or frustration) with online learning.
- The Module Specific Survey investigates course-specific features such as the quality of interaction with lecturers and fellow students in a particular module.

This feedback is disseminated to management, project leaders and lecturers to reinforce the importance of student views, needs and experiences and to enable lecturers to continuously improve their practice of web-supported learning.

Multimedia

Within the UP context, multimedia refers to the use of many different media (sound, graphics and animation, for example) within one programme to achieve a specific outcome. Such a programme is traditionally designed as a stand-alone programme distributed to students on CD-Rom. The content is usually a specific topic within a course or module and the multimedia product supplements and complements other modes of teaching.

The E-education team is experienced in developing different types of multimedia, including tutorials, simulations, case studies and collections of resources (usually visual). The aim is to make each programme as interactive as possible and to engage the user in active learning.

Multimedia is an option to consider when:

- the content is visually rich;
- video and sound enhance understanding and the achievement of specific outcomes;
- use of the computer for simulations and mathematical computation supports learning;
- individual feedback and interaction with the content is important;
- individual differences with regard to learning styles are important and
- repetition and practice are necessary to master content.

Because there are still many students at UP who do not have access to the web from home, the delivery of course material on CD-Rom remains a necessity. Limitations with regard to bandwidth have also led to the continued widespread use of CD-Rom, especially in instances where the content includes images, sound and video.

The E-education team has developed a number of different multimedia titles since 1997. These are increasingly being marketed and sold to other universities and groups, both nationally and internationally. The team approach with a wide diversity of specialists has made it possible to develop award-winning multimedia of a high standard.

E-testing

The University of Pretoria implemented E-testing during 1993. Since then E-testing has become an integral part of the assessment strategies of many academic departments. Well-equipped computer laboratories are available on the main campus, the Prinshof campus (Health Sciences), Onderstepoort (Veterinary Science) and the Groenkloof campus (Education).

Lecturers incorporate E-testing as part of their assessment strategy because it saves marking time, while allowing large groups of students to be tested regularly. Marks are available as soon as the student completes the test and lecturers receive statistics on the questions to assist them in revising their tests regularly and improving the quality of assessment. The students are positive about this method of assessment, mainly because they receive the results and feedback immediately and because marking is objective.

The current software runs on an outdated platform. A new web-based system is being developed according to the requirements set by UP.

TLEI services on the satellite campuses

The process of decentralising TLEI services to the Prinshof and Onderstepoort campuses, which started in 2002, was completed during 2003. It is now possible for TLEI to provide core services on a decentralized basis. There is a team of 13 TLEI personnel at the Prinshof campus (Faculty of Health Sciences) and 4 personnel members at the Onderstepoort (Veterinary Science) campus. Some support, currently limited to Educational Technology services, is also provided on the Groenkloof (Education) campus.

Where possible, this decentralization tries to ensure that TLEI personnel who are located at the Main campus travel to the satellite campus in order to provide additional services, rather than requiring academic personnel to travel to the service point. There are two outcomes of this decentralisation. Firstly, there is greater awareness of the services provided by TLEI and there has been a steady increase in requests for various services not previously utilized by the personnel on the satellite campuses. Secondly, TLEI is aware of the appreciation of personnel who no longer have to travel in order to access our services. We will remain committed to looking for ways to increase client satisfaction in order to achieve educational excellence at UP.

Project Office

A project management methodology is used for managing and directing the development services of E-education. A dedicated project office supports these project management processes. The Project Office is primarily responsible for all correspondence related to projects, the maintenance of the management information system and the electronic backup of all courseware.

The development of a management information system has made it possible to compile a wide variety of reports providing information about the different projects. The information is distributed to project leaders, deans of faculties and UP management, but any staff member interested in obtaining information about a specific project may approach the Project Office for a report. Information obtained from this system enables E-education to conduct strategic planning for the continued use of technology at UP.

Highlights in the Graphics, Video and Photography sections

The graphics, video and photography departments continue to provide specialised services to all the departments at the University. Graphic services include the design of pamphlets, brochures, advertisements, exhibition material, electronic presentations, posters, transparencies and slide shows, as well as the layout of reports and publications. Assistance with the provision of graphics for web sites, presentations, animations and course material, as well as the production of graphics for multimedia and WebCT courses is also provided.

Photographs are used for instructional, research and promotional purposes and range from photographs of scientific equipment and specimens to portraiture. Digital photography is also done, which is used for both web and multimedia programmes. Key services offered include studio and location photography, copying of artwork, illustrations and books, duplication of slides, computer-generated slides, macro photography, stereo microscope photography, scanning of slides and photographs (digitising) and writing them to CD, manipulation and restoration of photographs, film processing (slides, colour and black and white negatives), and production of photo-quality A4 and A3 prints on various grades and weights of paper.

The formats include 35mm and 120 slides and negatives, in colour and black and white and digital images (Nikon D1) at 300dpi in *.tiff or *.jpg format.

Audio-visual services include video production, tape duplication services and the conversion of video to electronic format (MPEG), as well as the provision of sound recording and editing services.

Services involved in a typical video production include script writing, filming, editing (video and audio) and duplicating the final product. Typical examples of where these services might be needed include promotional videos (product or service), information videos, educational videos and the filming of events.

Tape duplication services include making multiple VHS copies from VHS, DV, DVCam, Betamax, Video8, Hi-8, Betacam and U-matic, as well as conversions from NTSC VHS to PAL VHS and from PAL to NTSC. Multiple copies from audio cassettes are also made. Conversions of video to MPEG include the digitisation of video footage for use in multimedia programmes, PowerPoint presentations and for the web.

Sound recording and editing services cover general sound recording, voice recording, the recording of audio onto CD, transferring LP records onto CD and the writing of all recordings to CD.

Advances in technology make it possible to include increasingly sophisticated multimedia (video, sound, animation, digital photographs, complex graphic images) in learning material provided to students. This provides another dimension to the work undertaken by these departments. During 2003 TLEI was able to replace some of the very old equipment at Onderstepoort and the Prinshof campus. This included the purchase of a sophisticated slide scanner which can manage high volume, high quality digitisation, and new video editing equipment.

Educational Technology Support Services

Services include satellite television broadcasts, video-conferencing, audio-visual rentals and the purchase and repair of audio-visual equipment.

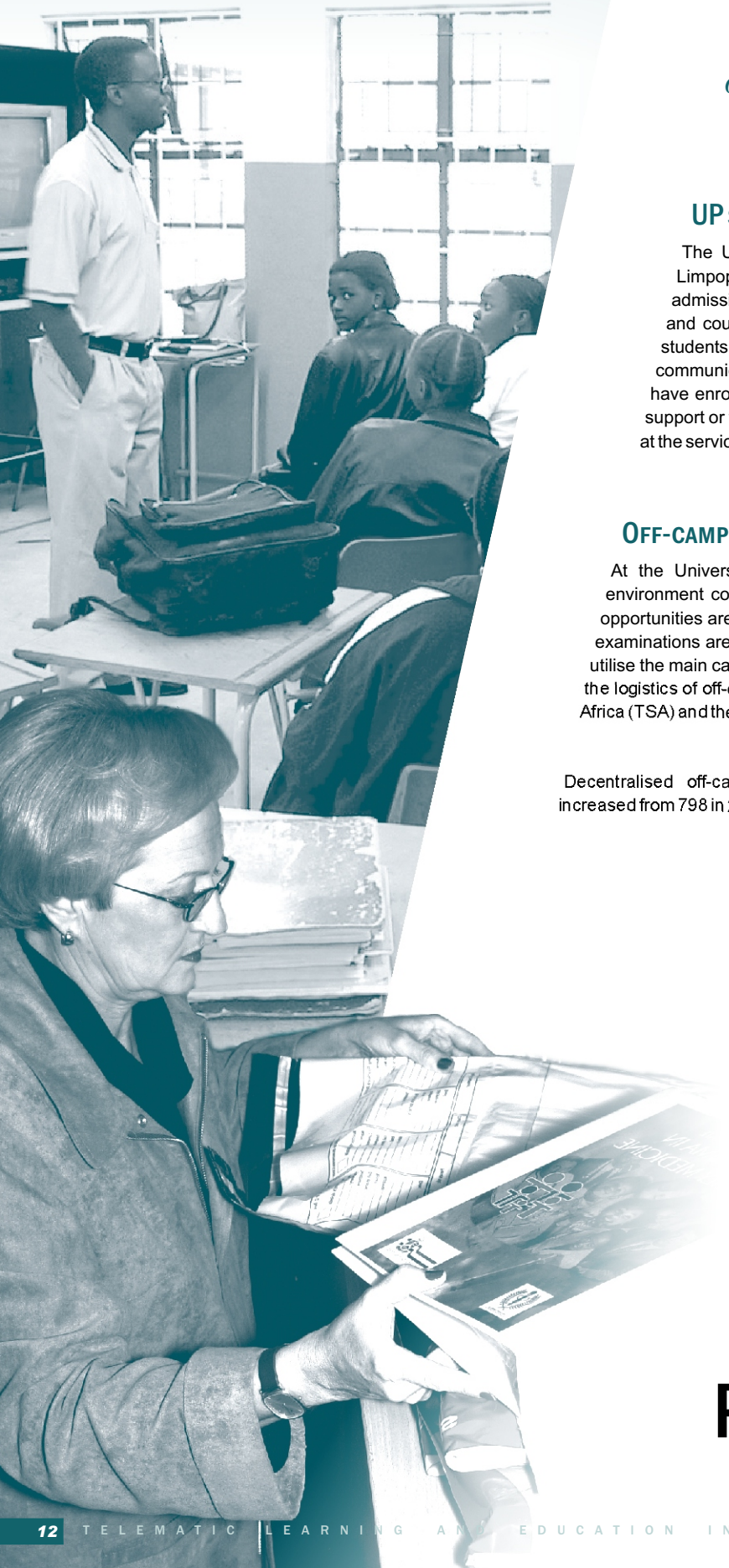
Satellite television broadcasts are used extensively to reach a large number of students in Sub-Saharan Africa. The footprint of the satellite beam reaches all over South Africa and includes countries such as Zimbabwe, Mozambique, Botswana and Namibia.

Video conferencing is becoming more and more popular for meetings with people at universities abroad and for job interviews. It is also used regularly for oral PhD examinations.

All departments within the University can rent audio-visual equipment. Equipment includes data projectors, digital cameras, slide projectors, cassette tape recorders and portable sound systems and the maintenance thereof. A One-stop Service has been introduced to streamline our services and support to University staff. Lecturers are now able to direct all enquiries and requests for educational technology services and support to one telephone number or use the e-mail address of the One-stop Service. The One-stop Service also handles any broken or malfunctioning equipment. The purchase of audio-visual equipment for the University is centralised to ensure uniformity according to norms and standards and to obtain the best possible price.

A new Research and Development (R&D) function for educational technology was introduced in 2003. This function focuses on research with regard to new educational media and technologies. International trends are monitored and new technologies are tested, piloted and evaluated for their value to and application in teaching and learning. Extensive research has been done on new technology platforms (including synchronous software) to deliver lectures to students world-wide.

Educational technology support and maintenance received a huge boost in 2003 when four student assistants were appointed at the main Campus and one at the medical campus to assist lecturers with educational technology and to improve the response time to act on problems experienced by lecturers.



The University of Pretoria has established service points to provide access to information, administrative services, test and examination opportunities for off-campus students.

UP SERVICE POINTS

The University of Pretoria operates service points in Mpumalanga, Limpopo and the North-West province. Students can enquire about admission criteria, application and enrolment procedures, fee structures and course content. Each service point has a facilitator and registered students can rely on academic support via telephonic and Internet communication with lecturers and fellow students. Where several students have enrolled from the same area, it may be possible to arrange for tutor support or to form study groups. Examinations and tests may also be written at the service point.

OFF-CAMPUS EXAMINATIONS

At the University of Pretoria, innovation and flexibility within the learning environment combine to lead the way forward. Examinations and assessment opportunities are a key element in the students' learning experience. Off-campus examinations are offered for national or international students who are unable to utilise the main campus. In view of closer partnerships between tertiary institutions, the logistics of off-campus examinations are co-managed with the Technikon South Africa (TSA) and the University of South Africa (Unisa).

Decentralised off-campus examinations (both national and international) have increased from 798 in 2000 to 1 274 in 2002 and to 2 191 in 2003.

OFF-CAMPUS SUPPORT AND PARTNERSHIPS

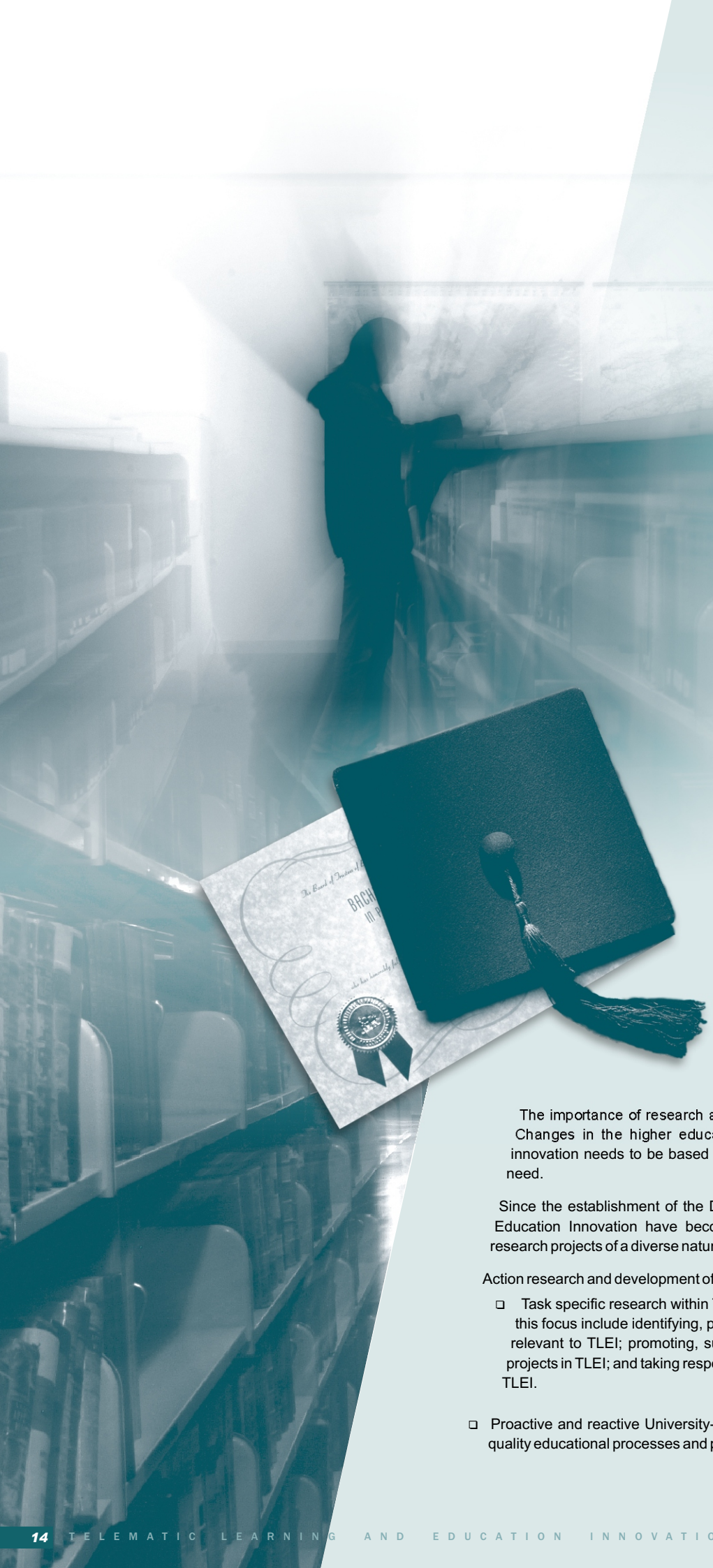
COMMUNITY SERVICE

In an endeavour to address some of the educational needs of the country, the University of Pretoria has entered the challenging field of Interactive TeleTeaching, through which the TeleTuks Schools Project was initiated. With this venture, UP became the first South African institution of higher education to tangibly demonstrate its commitment to making quality education accessible to the broader South African community.

The TeleTuks Schools Project is a community-based project - a free service offered to secondary schools. This project aims not only to assist learners in gaining University entrance by improving their matriculation results, but also hopes to accustom them to the use of technology as part of their learning experience.

The purpose of the TeleTuks Schools Project is to offer supplementary programmes presented by excellent educators who are specialists in their fields. It supports schools with quality education in the more difficult aspects of the subjects that are offered. The project is currently aimed at senior learners (Grade 11 and 12) and covers Mathematics, Physical Science, Biology, English, Geography, Accounting and School Guidance (career and subject guidance as well as life skills). Broadcasts are offered to schools in Gauteng, Limpopo, North-West and Mpumalanga.

The University provides the infrastructure for training, equipment and personnel to enable presenters of the programmes to broadcast lessons to the participating schools. The project is funded through donations and sponsorships and relies on the support of corporate businesses. Interactive television has proved to be a medium with great potential for outreach purposes. The University regularly evaluates the project and its value in the education and learning experiences of the learners and has found the project to be highly beneficial with incredible effects on learning outcomes.



Action Research

The importance of research and development in higher education is evident. Changes in the higher education environment and the fact that education innovation needs to be based on educational research, have emphasised this need.

Since the establishment of the Department, the staff of Telematic Learning and Education Innovation have become increasingly involved in education-related research projects of a diverse nature.

Action research and development offers two opportunities:

- Task specific research within TLEI - internal activities that typically form part of this focus include identifying, prioritising and co-ordinating focal research areas relevant to TLEI; promoting, supporting, facilitating and coordinating research projects in TLEI; and taking responsibility for special research projects on behalf of TLEI.

- Proactive and reactive University-wide action research aimed at the promotion of quality educational processes and products.

2003 Projects and Reports

Education Innovation

Framework for the evaluation of teaching quality

Staff of TLEI researched national and international practices with regard to the evaluation of teaching in higher education institutions. Some of these members formed part of a UP Task Team working on the revision of the University's guidelines and criteria for the appointment and promotion of academic staff members.

TLEI staff on the Task Team developed a comprehensive framework for the evaluation of teaching. Seven generic teaching competencies were identified and criteria for each of these competencies were formulated for each of the appointment levels, from Junior Lecturer to Professor, as well as for Outstanding Performers. Distinctions between the different post levels are viewed within the context of a post-level continuum: from junior lecturer to professor, rather than being viewed as separable discrete levels. The continuum and the required competencies increase in terms of depth, complexity, creativity and innovation.

Self-evaluation and peer review form the basis of the evaluation of both the research and teaching functions of academic staff members. Evaluation of teaching by students provides an additional dimension to the latter.

E-learning

Upgrading to integrated campus portals

The Department of Telematic Learning and Education Innovation (TLEI) launched the new version of WebCT, version 4, during a function in the Sanlam Auditorium on 13 November 2003. WebCT is the Learning Management System (LMS) used at the University of Pretoria for the preparation and presentation of electronic learning environments. The new version offers increased functionality, including drag-and-drop transfer of files, an equation editor, a spell checker and an improved user interface.

During the past two years, the upgrading of the Virtual Campus has been in progress, including additional functionalities and streamlined access to Student Online Services (SOS) and Lecturers Online (LOL). The graphic interface of these services was updated to reflect the corporate image of the 'Innovation Generation'. The intention of the upgrades is to integrate these services into the broader IT infrastructure of the University.

The new Student Online Services and Lecturers Online were demonstrated at the launch in November. Many comments and suggestions from lecturers were discussed and queries were resolved. The new portals were implemented in January 2004.

Multimedia highlights

The demand for courses in the online environment, as well as for new multimedia products continues. Three multimedia projects were completed during 2003, including a new support CD-ROM for students registered for WebCT-supported courses, containing information which can be useful to any UP student. The look and feel of this CD-ROM was re-designed to portray the new 'Innovation Generation' branding of the University. During 2003 the design team continued to work on several large multimedia projects which are underway, and which should be completed during 2004. There are currently 14 projects in development.

One of the great challenges is to find ways to speed up the development process, and in this regard a new product, named TK3 was acquired by TLEI. TK3 is a software application used for creating virtual books and includes several pre-programmed, useful tools for the end-user. It has been enthusiastically and effectively used in projects where there is a need to provide learning material which is primarily text-based in digital format. With the use of this application, the TLEI team was able to halve the development time in some projects.

E-portfolio

This project had its origin in the Faculty of Health Sciences, but will be made available for University-wide application. The E-portfolio will create a digital record of the learner's achievements. The portfolio will, in a nutshell, capture all the events which take place when assessing knowledge and performance. It includes the creation of assignments, scoring rubrics used in assessment, opportunities for the learner to submit work and provision of the final assessment by the lecturer. A unique feature of this system will be the ability to break assignments down into small sections, allocate marks for each section and then later create a profile of the learner's performance relating to this particular aspect, for example communication skills, over a period of time. Learners will be able to submit both text-based and graphic material into the portfolio. This system does not replace the assessment done by means of computer-based tests which are currently taken using Question Designer. The analysis of the requirements was completed this year and development will start on the system itself during 2004.

eCPCES (Electronic Comprehensive Patient Care and Education System)

Over the last few years the School of Dentistry has developed its own version of a standardized student training protocol for Patient Clinical Examination, Diagnosis and Treatment Planning. Towards the end of 2000, the Department of Restorative Dentistry started exploring the possibility of developing a computerised version of this training protocol. Funding was obtained and an outside company, ExACT Dental Software, contracted to develop this computerised system. By combining and employing the unique expertise of the Department of Restorative Dentistry, Telematic Learning and Education Innovation and ExACT, a product, the eCPES, is being developed which will enhance the in-house implementation of the School's new curriculum. Development of this software is viewed as one of the strategic initiatives in the School of Dentistry. Successful implementation of the project will establish the school as one of the leaders in the field of innovative dental education. By the end of 2003 the development was entering its final stages and extensive user testing will commence in 2004.

M-learning pilot project

Mobile learning (M-learning) is a natural extension of E-learning and has the potential to make learning even more widely available and accessible than in existing E-learning environments. The role that communication and interaction play in the learning process is a critical success factor. It is within this context that M-learning can contribute to the quality of education. It offers opportunities to optimise interaction between lecturers and learners, among learners and among members of COPs (communities of practice). Wireless and mobile technologies also make it possible to provide learning opportunities to learners that are either without infrastructure for access (for example rural learners) or continually on the move (for example business professionals).

A pilot project was launched regarding the use of cellular phones and especially SMSs, in three of the Faculty of Education's paper-based distance learning programmes. These three programmes: BEd (Hons), ACE (Education Management) and ACE (Special Education Needs), are offered to students in rural areas where there is little or no access to E-learning. Although less than 1 % of the students have access to the Internet, more than 99% of them own mobile phones. Bulk SMS is used to communicate and support

these rural distance learners in their studies.

During the first few months of use, the advantages and successes have already been significant:

- In response to a reminder to register for contact sessions, 58% of the learners registered before the closing date, compared to the normal expected percentage of below 40%.
- In response to a reminder of the contact session dates, 95% of the learners that registered for the contact sessions, attended.
- Learners respond en masse and almost immediately to information provided in SMS messages.

From a quality and financial point of view, successes in this project are also significant:

- Using print media and the postal service to distribute the necessary information to learners would have been more than 20 times the cost of bulk SMSs.
- The SMSs provide immediate and JIT (just-in-time) information, while the mailed information would have taken between 3 and 18 days (depending on the remoteness of the learner) to reach all the learners.

Lessons learned from this project led to the establishment of some important premises for M-learning in Africa which can be summarised as follows:

- M-learning is a supportive mode of education and not a primary mode of education.
- M-learning provides flexibilities for various learning styles and lifestyles.
- The most appropriate mobile device for learners in Africa is a mobile phone.
- Possibilities and latest developments in mobile technologies must be tested against practicality, usability and cost-effectiveness.
- The use of multimedia on mobile phones must be tested against the envisaged learning outcomes.
- The major focus of M-learning should be more on communication and interaction than on content.

This pilot project provides an example of how mobile technologies may be successfully used to provide learning support to rural distance learning students in Africa, especially because these students do not have access to the internet. Few people thought that E-learning would have an impact in rural areas. The infrastructure is sometimes so poor in these areas that the nearest post office can be more than 60 kilometres away. M-learning has brought E-learning to the rural communities of Africa- to learners that we, only a few years ago, never imagined could be E-learners. Africa is leapfrogging from an unwired, minimal E-learning infrastructure to a wireless M-learning infrastructure.

Synchronous software

There is a growing need for lecturers on campus to support postgraduate students with synchronous software. Synchronous software enables tertiary educational institutions to meet, teach, and train live online, regardless of geographic location, bandwidth, operating system, or physical disability.

By facilitating dialogue, collaboration, and personal sharing, synchronous software, in conjunction with WebCT's course tools, establishes a sense of community and connection among distance students not otherwise possible in an asynchronous online environment. Live interactive classes complement (and in many ways simulate) an actual classroom, as students are able to interact with lecturers and peers, whether in a campus computer lab, off-campus residence, or office. By utilizing synchronous software, TLEI hopes to enable postgraduate students to access and participate in their academic programmes from anywhere, anytime, while eliminating commuting, avoiding residency requirements and saving costs by using virtual libraries.

TLEI is currently evaluating synchronous software packages. An evaluation committee was formed to evaluate locally supported synchronous software and to present recommendations to TLEI's Management Committee. The evaluation committee includes personnel from certain academic departments, TLEI and IT. The following software packages were evaluated:

- Centra
- Interwise
- HorizonLive.

After an initial evaluation, the committee plans to launch a pilot project on campus to evaluate not only the software but also to look at the academic value, the return on investment, as well as the integration of such software into the University's existing IT infrastructure.

A pilot international collaboration project was launched in 2003. The aim of this project was to establish the possible usage of synchronous software to support international collaboration, to support communication between project team members and to support academic staff in collaborative activities. It is evident that synchronous software can support international collaboration in many ways and even save costs.

The evaluation of synchronous software will continue in 2004.

Asynchronous video streaming of ITV broadcasts

TLEI and the Tshwane Metropolitan Municipality jointly ran a pilot project to asynchronously video stream ITV broadcasts. The interactive television broadcasts of the TeleTuks Schools Project (run by TLEI), were video streamed to three participating schools via optical fibre and “last mile” wireless connections. The three pilot schools were in Atteridgeville, Mamelodi and Waverley. The schools were equipped with suitable multimedia supporting personal computers on which the streamed videos could be accessed at any time after the streamed broadcast.

Technically, the project was a huge success. The ITV broadcasts were video-streamed, asynchronously, to the three participating pilot schools, whereafter the video could be successfully accessed by these schools.

From an educational point of view, the project was however not as successful. The reason was that the pupils and teachers prefer watching live ITV broadcasts, rather than an asynchronous broadcast at a later stage. The video-streamed broadcasts also do not allow for live interaction with the presenter and other participating schools, as would be possible during a live transmission.

Action Research & Development

Intradepartmental co-ordination of research activities

Action research and development has become a household activity in TLEI. Some 34 projects are registered, of which at least 30 are active. These projects are either directed towards the development of TLEI related functions, processes and products, or aimed at institutional development.

The year 2003 was characterised by an evolving awareness of the strategic importance of study success. This was amplified by changes in the state subsidy formula for the financing of higher education. What were originally considered as stand-alone action research projects, gradually migrated towards each other to form the key elements of a coherent strategic plan to address study success of the University's primary client, namely its student body. This led to strategic collaboration between TLEI and other key role players, such as The Bureau for Institutional Research & Planning, Business Management, the Client Service Centre, and the Student Support Services. Research in several TLEI focus areas benefitted from this collaboration.

Student attrition and graduation

Several independent research projects focussing on student attrition and graduation rates were initiated during 2003. These studies drill down into institutional data with the view of developing attrition and graduation profiles for a number of faculties, schools, academic departments, programmes and modules. Faculties that participated in these studies included Humanities (Psychology), Theology, Law, Natural & Agricultural Sciences (BSc Biological Sciences), and the School of Engineering (Mechanical and Aeronautical Engineering).

A financial model to analyse the cost of student attrition using the historical subsidy formula, was developed and applied to attrition figures of the Dept of Mechanical and Aeronautical Engineering.

Towards an assessment policy

Following the draft institutional education policy developed in 2002, a shift in emphasis towards assessment saw the emergence of several draft discussion documents. These focused on general assessment issues, for example, an audit of the assessment regulations, rules and guidelines, mark allocation within the OBE framework, the effect on students' study patterns, and open book assessment. Discussion of these documents led to the appointment of a committee of vice rectors with the responsibility of drafting a framework within which student assessment at UP will be managed in future.

Student feedback on the quality of education

Research in this area was focused on two areas, namely an evaluation of the performance of the current student feedback questionnaire (contact setting), and the addition of feedback on the quality of practical training.

- Although a number of questionnaire items where identified as inadequate, the investigation into the integrity and properties of the instrument demonstrated a high level of reliability. This was ascribed to both the large sample, and respondents' consistent high scoring of all items. These findings led to a second analysis of a smaller and differently stratified sample. The results of this research will lead to the adaptation of the current instrument, with the view to its implementation during the second semester of 2004.
- The context specific nature of practical work in different disciplines prompted a shift from the design of a generic feedback instrument, towards context specific instruments in order to elicit useful feedback. Several projects, were initiated across a number of academic departments in Natural and Agricultural Sciences, Theology and Economic and Management Sciences.

Enhancing the quality of practical training

This initiative is considered as a positive spin-off from action research on student feedback on practical training. Several projects in at least four faculties have been initiated: Theology, Law (Process Law), Natural & Agricultural Sciences (Biochemistry, Chemistry and Physics), and Economic and Management Sciences, amongst others.

Academic development

The establishment of an institutional 'Community of Practice' in Academic Development was characterised by a slow, but significant start during 2003. Role players shared information, strategies and successes in their respective faculties.

International Collaboration

International competitiveness is one of the University's important strategic drivers. Interaction and collaboration at international level is therefore strongly encouraged. In this respect, TLEI is involved in a number of projects aimed at providing technical and educational support to the international academic community.

Imperial College, London

A scholarship programme and Partnership development project: Imperial College London (UK) Distance Learning Programme (ICL-DLP), Wye campus and the Department of Agricultural Economics, Extension and Rural Development (LEVLO), University of Pretoria.

In December 2002, ICL-DLP signed an agreement with the Commonwealth Scholarship Commission (CSC) to provide Commonwealth scholarships by distance learning to eligible students. The agreement was based upon a proposal submitted to the CSC by ICL-DLP in January 2002. Under the terms of the agreement, students from Commonwealth countries within the Southern Africa Development Community (SADC) were invited to apply for full scholarships to study an MSc offered by distance learning. The proposal also included partnership development arrangements with UP to provide local support to the Scholarship programme.

Before the completion of the agreement in 2002, various informal and formal activities were carried out by the project team, to put systems in place that would enable Commonwealth students from SADC to be recruited for the scholarships. These activities included:

- The announcement of the partnership between ICL-DLP and LEVLO at the Pan Commonwealth Forum on Open Learning in Durban in August 2002. Members of the CSC and Association of Commonwealth Universities (ACU) and representatives from the ICL-DLP and UP were present.
- Materials for marketing the scholarship scheme and strategies for advertising within the SADC region were developed and identified, in conjunction with LEVLO and TLEI.

During the first year (2002) ICL-DLP, in collaboration with LEVLO and TLEI, completed the marketing for the distance learning scholarships as well as the administrative process of application processing and student selection. A large number of applications were received and reviewed. The CSC met in December 2002 and 23 scholarships were awarded.

The design and development of an online portal using open source software and the evaluation of the use of synchronous software to support the partnership development was done by TLEI, as part of our agreement with LEVLO.

- The portal serves as an entry point to the existing Learning Management Systems (LMS) used by the participating institutions for academic collaboration. The portal offers various tools to facilitate communication between project team members and lecturers of the participating institutions.

- A pilot project was launched in order to establish the possible usage of synchronous software to support communication between project team members, to extend the use of the portal and to evaluate the possible implementation of such software. This software supports international collaboration towards furthering the CSC's aims of funding scholarships and developing strong international partnerships.

In order to sustain partnership development, the partners drew up a vision, mission and strategy document in 2003. The document outlines how activities of the partners need to be resourced and scheduled for future collaboration. These partnership development activities are based on the premise that the future for high quality education relevant to SADC will be through pooling academic resources. The partners envision an accessible, and truly international joint-study programme that reflects cultural diversity, builds capacity, and enables students to learn and apply knowledge in their workplace in order to address and solve development problems.

The partners acknowledge the existence of stumbling blocks and have agreed to find solutions. If solutions can be found, a two-way flow of students, staff and academic research results will be the desired result.

University of Bergen, Norway

The goal of the Norwegian Council for Higher Education's Programme for Development Research and Education (NUFU) is to further competence in research and higher education in developing countries. The University of Bergen, Norway, involved six universities in southern Africa in this project: the University of Namibia, the University of Botswana, the University of Zimbabwe, the University of Zululand, Universidade Pedagogica (Maputo, Mozambique) and the University of Pretoria (Faculty of Education and Department of Telematic Learning and Education Innovation).

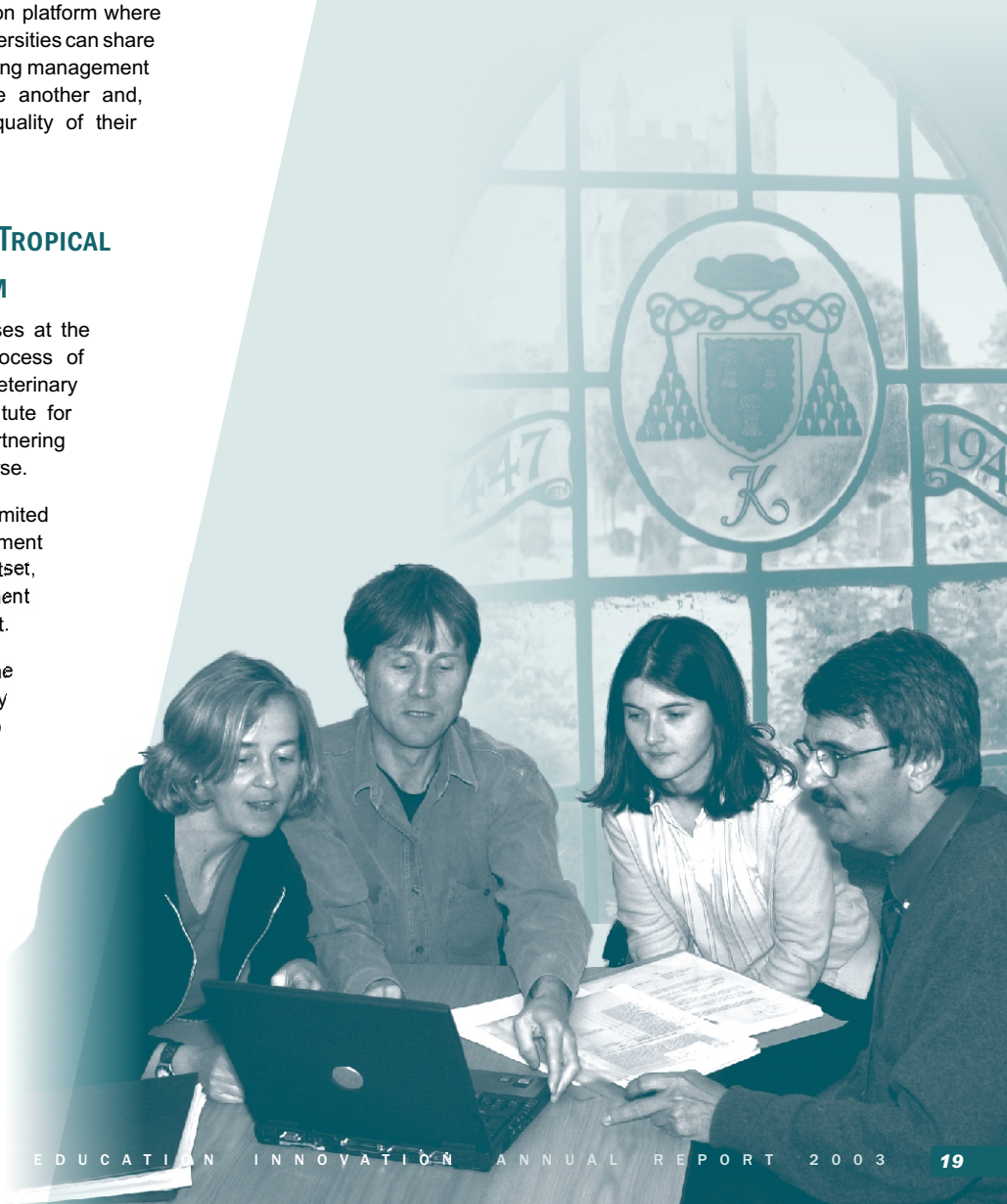
The aim of this project is to provide a discussion platform where doctoral students from the abovementioned universities can share ideas on their studies. By using the LUVIT learning management system, students can communicate with one another and, through co-operative learning, improve the quality of their studies.

The Prince Leopold Institute for Tropical Medicine (ITM), Antwerp, Belgium

The Department of Veterinary Tropical Diseases at the Faculty of Veterinary Sciences is in the process of developing a new postgraduate programme in Veterinary Tropical Diseases. The Prince Leopold Institute for Tropical Medicine (ITM), Antwerp, Belgium is partnering with UP to develop selected modules for this course.

This will primarily be an online program with limited contact. TLEI has been involved in the development of this new programme from the very outset, providing assistance with curriculum development and design of the electronic learning environment.

TLEI has offered several training courses for the team developing this new programme. Initially three academic staff members from ITM came to South Africa to attend some of TLEI's standard training courses. This led to an invitation from ITM to train a wider group of ITM staff in Belgium. In November 2003 two TLEI staff members were sponsored to go to ITM in Antwerp, Belgium, where they presented two training courses, namely the Facilitation of E-Learning course and an advanced WebCT designers course. Twenty two lecturers attended the first course and eight completed the second one.



External Clients

De Beers Mining Skills training

Internationally, De Beers Mining is synonymous with quality and success. TLEI has been granted an opportunity to assist De Beers in maintaining this good reputation.

Diamonds are mostly found in a soft rock type called Kimberlite, which often forms a pipe perpendicular to the surface. This differs greatly from the hard, gold reef type of rock that most miners are familiar with. De Beers, forerunners in the South African diamond mining industry, has used an underground extraction method, which, explained in simple terms, means accessing the Kimberlite rock from beneath and systematically breaking (or caving) away the rock - from below. In this way, extraction takes place only at one level and blasting is limited to the breaking off of big sections, once the cave is formed. This technique is known as block caving.

During 2003 De Beers realised that the niche-specific knowledge and expertise required for block caving was not sufficiently and explicitly captured. Furthermore, miners coming from other mining industries did not cope well in the block caving scenario and required training. The average age of experienced De Beers employees with sufficient knowledge of the specific techniques is higher than 54, which means that they are nearing retirement. It was decided to start a Block Cave school to address the potential consequences of this (less than ideal) situation.

TLEI was approached by DeBeers to assist in the design of a system to collect, filter and sequence the applicable competencies and design a curriculum for the Block Cave school. Third party vendors assisted in writing the applicable unit standards that will be registered on the NQF.

The process included sharing didactic principles with De Beers and also resulted in a number of TLEI personnel members undergoing some basic diamond mining training on site. A number of action research interventions were done in an effort to ensure that learning is facilitated according to the various levels of expertise required by De Beers. The project is continuing and looks very promising.

International Conference Presentations

- Fresen, J.W. (2003). *Caught in the Web of Quality.* The State of Education: Quantity, Quality and Outcomes. Oxford, United Kingdom.
- Le Roux, I., & Richter, S. (2003). *A collaborative e-learning project between South Africa and Sweden. The South African Perspective*. Online Educa. Berlin, Germany.
- Lotriet, M., & Volschenk, G. (2003*) Taking UP university teaching.* Poster presented at the EARLI Conference. Padova, Italy.
- Steyn, A.B. (2003). *Factors influencing the success of technology enhanced learning initiative uptake.* Second International Conference on Multimedia and Information & Communication Technologies in Education. Badajoz, Spain.
- Strehler, A., & Eksteen, C.A. (2003). *Designing for early release of interactive multimedia: the value of early end user testing and evaluation in designing interactive multimedia*. Slice of Life. Philidelphia, USA.

Workshops Presented Internationally

- Le Roux, I., & Strehler, A. (2003). *Managing E-learning environments in Higher Education.* Online Educa. Berlin, Germany.
- Strehler, A., & Drysdale, E. (2003). *Facilitation of E- Learning.* The Prince Leopold Institute for Tropical Medicine. Antwerp, Belgium.

National Conference Presentations

- Delport, R., Cronje, J.C., Engelbrecht, J.C., & Harding, A.F. (2003). *Computer-mediated communication in pre-graduate mathematics courses.* ALARPM 6th & PAR 10th World Congress . University of Pretoria, South Africa.
- Delport, R., Ubbink, J.B., & Vermaak, W.J.H. (2003). *OBE and postgraduate Chemical Pathology courses: Does an Outcomes Based Education approach make sense?* 43rd Annual Congress of The Federation of South African Societies of Pathology. Johannesburg, South Africa.
- Fresen, J.W. (2003). *Demonstration of Quality Management System.* National Quality Day, Technikon South Africa.
- Lotriet, M., & Volschenk, G. (2003). Teaching teaching without teaching teaching. ALARPM 6th & PAR 10th World Congress. University of Pretoria, South Africa.
- Naidoo, N.A. (2003). *Mentored academic writing for Higher Education in South Africa.* SAARDHE 13th Biennial Conference. Stellenbosch, South Africa.
- Selahle, P., Oberprieler, E., De Jager, C., & Delport, R. (2003). *Effects of a relevant environmental mixture of known endocrine disrupting substances on transgenerational effects in rats*. Faculty Day of Health Sciences, University of Pretoria.
- Selahle, P., Oberprieler, E., De Jager, C., Delport, R., & Bornman, M.S. (2003). *Interactive effects of a relevant environmental mixture of known endocrine disrupting substances on fertility parameters in male rats.* Faculty Day of Health Sciences, University of Pretoria.

Conferences Attended

- South African Association of Health Educationalists [SAAHE] - Cape Town, South Africa (Strehler, A; Pickworth, GE)
- Gartner Symposium/Itspo Africa 2003 - Cape Town, South Africa (Boon, JA; Le Roux, I)
- The Colleges of Medicines of South Africa [CMSA] - Cape Town, South Africa (Pickworth, GE)
- Design Indaba 6 - Cape Town, South Africa (Hoffmann, ME)
- NRF Online Publishing Seminar - Pretoria, South Africa (Fresen, JW)
- Online Educa 2003 - Berlin, Germany (Drysdale, E; Strehler, A; le Roux, I)

- Corporate Wisdom: Using e-learning and Knowledge Management for Competitive Advantage - Johannesburg, South Africa (Strehler, A; Boon, JA)
- Eurotaac 2003 - Friedrichshafen, Germany (Jordaan, AJJ)
- IEEE Conference on Advanced Learning Technologies - Athens, Greece (Brown, TH)
- Intellectual Leadership and the African Information Society Initiative: What Role for Africa's Academic Community? - Addis Ababa, Ethiopia (Boon, JA)

Visits To International Universities / Institutions

- Universitat Oberta de Catalunya, Barcelona, Spain - To meet with the senior staff of this leading virtual university and to establish working relationships with them. To have discussions with Edu Lab which is the counterpart for UP's Department of TLEI. To discuss burning issues with the staff members of the UOC (Brown, TH)
- Guinti Interactive Labs, Sestri Levante, Italy - To meet with the senior staff of this leading mutlimedia development company and to establish working relationships with them. To have discussions with the World-wide coordinator of the MobiLearn Project. To see a demonstration of and discuss the Learn eXact Software Package which is regarded as the global leading LCMS and LMS (Brown, TH)
- Imperial College London Distance Learning Prgramme, Wye, United Kingdom - Follow up visit as part of TLEI support to the international collaboration between the Department of Agricultural Economics, Extension and Rural Development (LEVLO) of the University of Pretoria and Imperial College London Distance Learning Programme, Wye (Jordaan, AJJ)
- University of Western Cape, Cape Town, South Africa - To investigate open source LMS development (Jordaan, AJJ, le Roux, I, Roux, D J)
- University of Stellenbosch, Cape Town, South Africa - To discuss E-learning deployment and development (Jordaan, AJJ, le Roux, I, Roux, D J)
- University of Cape Town, Cape Town, South Africa - To discuss E-learning deployment development (Jordaan, AJJ, le Roux, I, Roux, D J)
- University of Stellenbosch, Cape Town, South Africa - To exchange information with Prof Tobie de Coning on the following matters: The use of technology in education and particularly in continued education. Education innovation. Web-based education. Programmes for distance students. (Boon, JA)
- World International Gymnaestrada, Lisbon, Portugal - To film the World Gymnaestrada in Portugal (du Plessis, AF)
- University of Utrecht, Utrecht, The Netherlands - To investigate the use of the Vista edition of WebCT (Strehler, A)
- University of Dortmund, Dortmund, Germany - Collaboration and E-competence (Strehler, A, Drysdale, E, le Roux, I)
- Prince Leopold Institute for Tropical Medicine, Antwerp, Belgium - Courses presented in WebCT and the facilitation of E-learning (Strehler, A & Drysdale, E)
- Institute for Animal Health, Woking, United Kingdom - To gain insight into the Institute's TAPPS programme (Training and Accreditation Programme for Postgraduate Supervisors). To assess the viability of establishing a similar solution at UP with the view to addressing the current levels in postgraduate supervision (du Plessis, GI)

Publications

- Boon, J.A., & Meyer, H.W.J. (2003). *Provision of agricultural information for development on grassroots level in rural universities: a case study on crossing communication boundaries*. Libri, 2.
- Boon, J.A., & Du Plessis, M. (2003). *The role of knowledge management in eBusiness and customer relationship management*. International Journal of Information Management.
- Fresen J.W., Pretorius G.J., & Marx, A.S. (2003). *Public Administration: Getting hooked on e-learning*. South African Journal of Education, 38 (3.1): 192-205.
- Hoogendijk, C.F., Scholtz, C.L., Pimstone, S.M., Ehrenborg, E., Kastelein, J.J., Defesche, J.C., Thiart, R., du Plessis, L., de Villiers, J.N., Zaahl, M.G., Delport, R., Rubinsztein, D.C., Raffel, L.J., Grim, C.E., Mediene-Benchekor, S., Amouyel, P., Brousseau, T., Steyn, K., Lombard, C.J., Hayden, M.R., & Kotze, M.J. (2003). Allelic variation in the promoter region of the LDL receptor gene: analysis of an African-specific variant in the FP2 cis-acting regulatory element. *Mol Cell Probes,* 17(4):175-81.
- Joubert, J.W., & Steyn, A.B. (2003). *Operationalising operations research.* Published conference proceedings, UICEE.
- Naidoo, N.A. (2003). *Mentored academic writing for higher education in South Africa.* South African Journal of Higher Education, 17 (3).
- Riezler, R., Ubbink, J.B., Delport, R., Bester, M.J., & Vermaak, W.J.H. (2003). Variability of post-methionine load plasma homocycsteine assays. *Clinica Chimica Acta,* 330: 111-119.

Visitors to TLEI

- Abdenour, S, Mr: CDTA Allgiers, Algeria
- Aberra, H, Dr: Ethiopian Civil Service College, Distance Learning, Ethiopia
- Bancus, L, Me: World Bank, USA
- Bartlett, P, Dr: De Beers, South Africa
- Beebe, M A, Ms: Washington State University, USA
- Bisschoff, A, Ms: Potchefstroom University for CHE, Department of Telematic Learning Services, South Africa
- Bohman, D, Ms: Blekinge Institute of Technology, Department of Health, Science and Mathematics, Sweden
- Bradshaw, Y, Prof: University of Memphis, USA
- Broere, I, Prof: Rand Afrikaans University, Centre for Distance Education, South Africa

- Brown, A, Me: Wits, Centre for Learning, Teaching and Development, South Africa
- Buetschi, G, Dr: European Public Relations Education and Research Association, Distance Educaiton, Switzerland
- Chia, R T, Prof: Asian Institute of Management, Philippines
- Collins, T, Mr: WebCT, United Kingdom
- Crook, C, Me: Transformation Africa, United Kingdom
- Dechan, D J, Mr: Centra Software, Ireland
- Eastmond, N, Dr: Utah State University, Department Faculty Support, USA
- Fullan, M, Dr: Toronto University, Ontario Institute for Studies in Education, Canada
- Gadir, H A, Prof: Odense University, Sudan
- Geary, B, Dr: Birkbeck College, United Kingdom
- Gibb, A, Prof: Enterprise Development, United Kingdom
- Gijbels, D, Prof: Maastricht University, The Netherlands
- Gregson, J, Mr: Imperial College London (Wye campus), Distance Learning Programme, United Kingdom
- Grist, J, Mr: SAICA, South Africa
- Grulke, W, Mr: Future World, The Global Business and Technology Think Tank, South Africa
- Hatem, H, Mr: CDTA Allgiers, Algeria
- Jansen van Vuuren, C, Me: Potchefstroom University for CHE, AS, South Africa
- Johnson, T, Prof: Brigham Young University, Department Faculty Support, USA
- Korynski, P, Mr: Open Society Institute, USA
- Kruger, M, Dr: Rand Afrikaans University, Centre for Teaching, Learning and Assessment, South Africa
- Laijen, L, Ms: Free University of Amsterdam, The Netherlands
- Le Roux, K, Mr: Potchefstroom University for CHE, AS, South Africa
- le Roux, AI, Prof: Unisa, Bureau for Learning Development, South Africa
- Lesejane, J, Mr: SAICA, South Africa
- Light, G, Mr: Searle Centre for Teaching, Department of Research, USA
- Lillejord, S, Dr: University of Bergen, Faculty of Psychology and Education, Norway
- Lotter, A, Me: Potchefstroom University for CHE, ITB, South Africa
- Massanari, RM, Prof: Wayne State University, Detroit, Center for Healthcare Effectiveness Research, USA
- Moosa, R, Ms: Wits, Academic Planning and QA Officer, South Africa
- Murray, L, Ms: Wits, Academic Planning Office, South Africa
- Ndlovu, LR, Prof: National University of Science and Technology [NUST], Academic Research and Consultancy, Zimbabwe
- Nzama, B, Dr: University of Fort Hare, South Africa
- O'Conner Chandler, E, Ms: University of Chicago, Center for Teaching and Learning, USA
- Olson, G, Prof: University of Michigan, Dean for Research School of Information, USA
- Pengilly, R, Mr: Rand Afrikaans University, Information Technology, South Africa
- Pettersson, O, Prof: Blekinge Institute of Technology, Vice Rector, Sweden
- Potgieter, K, Me: SAICA, South Africa
- Pretorius, B, Mr: Potchefstroom University for CHE, ITB, South Africa
- Rikers, J, Prof: Open University of the Netherlands, International Relations, The Netherlands
- Rosbender, M, Ms: Free University of Amsterdam, The Netherlands
- Rushing, W, Prof: University of Memphis, USA
- Sanders, D, Prof: New Jersey City University, USA
- Santho, G, Mr: Learn Leadership Academy, Lesotho
- Sedibe, E, Dr: Technikon Free State, Dean, Faculty of Humanities, South Africa
- Sekyi, E T, Mr: University of Cape Coast, Department of Arts and Social Sciences Education, Ghana
- Shylendra, H S, Prof: Rural Management Anand, India
- Somerville, I, Mr: SAICA, South Africa
- Srinivasan, R, Prof: Indian Institute of Management, India
- Sriram, M S, Prof: Indian Institute of Management, India
- Van Cranenbroek, J, Prof: Eindhoven University for Innovation, Department International Studies, The Netherlands
- Van der Westhuizen, LJ, Dr: University of the Orange Free State, Centre for Higher Education Studies and Development, South Africa
- Van Dijken, E, Me: Potchefstroom University for CHE, ITB, South Africa
- Vorster, D D, Prof: Rand Afrikaans University, Vice Rector: Education and Information Systems, South Africa
- Watson, I, Mr: De Beers, South Africa
- Zastrocky, M, Mr: Gartner, Vice President and Research Director, USA
- Zawacki, O, Mr: University of Oldenburg, Centre for Distance Education, Germany
- Zulu, N, Ms: Wits, QA Co-ordinator, South Africa

Training Provided

Course/Workshop	Times presented	Total participants	Number of participants per faculty									
			EDU	E&MS	HS	HUM	EBIT	LAW	N&AS	THEO	VET	OTHER
WebCT High Impact	14	123	12	22	31	21	10	3	6		17	1
WebCT Intermediate	3	20	3	1	8	3	3		1		1	
Web Page Design for WebCT	3	23	4	2	7	2	4	1	1		2	
WebCT Designer	1	8	2	1	2	1	1		1			
Education Induction (for newly appointed lecturers)	3	114	4	20	18	12	31	3	15		9	2
Innovil (Education Induction for novice CIL lecturers)	4	62										
Education Induction for assistant/junior lecturers	15	237			62	34	34	25	82			
Assessment	12	49				49						
Objective assessment	6	50			39			11				
Rubrics and feedback	1	24			24							
Portfolios and rubrics	2	17			17							
Outcomes-based Education	1	6			6							
Student-centered teaching	1	9			9							
Improving your lecturing skills	2	21			21							
E-learning options	1	34					34					
What is Education Innovation	1	17			17							
Training for postgraduate students	2	140			140							
Study guides	4	32	19						13			
	Total	**986**	**44**	**46**	**401**	**122**	**117**	**43**	**119**	**0**	**29**	**3**

Modules in WebCT 2003

Undergraduate UP modules:	391
Postgraduate UP modules:	675
CE at UP:	5
Number of students with access to WebCT:	21 200
Number of personnel with access to WebCT:	802
Number of departments involved:	86

Departments with WebCT modules

- Academic Development Centre
- Accounting
- Afrikaans
- Agriculture, Economics, Extension and Rural Development
- Anatomy
- Animal and Wildlife Sciences
- Architecture
- Biochemistry
- Biokinetics, Sport and Leisure Sciences
- Botany
- Business Management
- CAAC
- CE@UP
- Centre for Environment Studies
- Centre for Science, Mathematics and Technology Education
- Chemical Engineering
- Chemistry
- Church History and Church Policy
- Civil and Biosystems Engineering
- Community Dentistry
- Community Health
- Companion Animal Clinical Studies
- Computer Science
- Consumer Science
- Curriculum Studies
- Earth Sciences
- Economics
- Education Management and Policy Studies
- Electrical, Electronic and Computer Engineering
- Engineering and Technology Management
- Family Medicine
- Food Sciences
- Forensic Medicine
- Genetics

- Geography, Geoinformatics and Meteorology
- GIBS
- Graduate School of Business
- Human Resources Management
- Industrial and Systems Engineering
- Informatics
- Information Science
- Legal History, Comparative Law and Jurisprudence
- Marketing and Communication Management
- Mathematics and Applied Mathematics
- Mechanical and Aeronautical Engineering
- Mercantile and Labour Law
- Mining Engineering
- Music
- Nursing Science
- Oral Pathology and Oral Biology
- Philosophy
- Physics
- Physiology
- Physiotherapy
- Plant Production and Soil Science
- Political Sciences
- Production Animal Studies
- Psychiatry
- Psychology
- Quantity Surveying and Construction Management
- Radiography
- School for Public Management and Administration
- School for Teacher Training
- School of Engineering
- School of Health Systems and Public Health
- School of Teacher Training, Maths, Science
- Social Work
- Statistics
- Theology
- Telematic Learning and Education Innovation
- Tourism Management
- Town and Regional Planning
- Veterinary Anatomical Pathology
- Veterinary Tropical Diseases
- Visual Arts

Computer-based testing

		2003
Number of tests created	Main Campus	175
	Health Sciences	126
	Onderstepoort	21
		322
Tests completed by students	Main Campus	112 571
	Health Sciences	12 356
	Onderstepoort	1 980
		126 907
Number of departments/groups	Main Campus	20
	Health Sciences	21
	Onderstepoort	5
		46

Multimedia Projects - Completed in 2003

Department	Title	Project Leader	Instructional Designer/s
TLEI	Student - CDROM	Mrs Jill Fresen	Johan Slabbert Liana Venter Gaby Pretorius
Dental Diagnostics and Röntgenology	Curiosities and Potential Misdiagnoses in Dental Radiology	Prof B Buch	Johan Slabbert Dr E Mostert
Centre for Business and Professional Ethics	Corruption Prevention	Dr M Painter - Morland	Alta Marx Detken Scheepers

Multimedia Projects In development in 2003

Department	Title	Project Leader	Instructional Designer/s
Quantity Surveying and Construction Management	Basic Building Construction	Mr Johan de Beer	Dolf Jordaan
Physiology	Stress and Psychoneuro-immunology	Prof R Viljoen	Henriette Wolmarans Gaby Pretorius
Ear, Nose and Throat	Ear, Nose and Throat	Prof AM Mulder / Dr JHL Kock	Liana Venter
Physiotherapy	Movement	Mrs E Korkie	Anne Strehler
Occupational Therapy	Hand Therapy	Ms C van Velze	Detken Scheepers
Paediatrics	The Normal Child	Prof M Kruger	Anne Strehler
Paediatrics	The Sick Child	Prof M Kruger	Anne Strehler
Family Medicine	Infectious Diseases	Dr W Snyman / Prof J Blitz	Anne Strehler
Family Medicine	Practice Management	Dr Marx / Prof J Blitz	Henriette Wolmarans
Family Medicine	Geriatrics	Dr Brits / Prof J Blitz	Erika de Bruyn
Family Medicine	Family Oriented Patient Care	Dr M van Rooyen / Prof J Blitz	Henriette Wolmarans
Family Medicine	Philosophy and Principles	Dr van Rooyen / Prof J Blitz	Erika de Bruyn
Family Medicine	Psychiatry	Dr Lalloo / Prof J Blitz	Henriette Wolmarans

Schools Participating in the Teletuks Schools Project

Gauteng

Alexander Career Directed
Amogelang Sec Sch
Cornerstone College
CR Swart Secondary Sch
DH Peta
Flavius Mareka
Gatang Comprehensive Sch
Geluksdal
Hlomphanang Sen Sec
Holy Trinity
Jafta Mahlangu
Makhosini Sec Sch
Memezemo Sec Sch
Phelindaba Sec Sch
Prestige College
Ratanda Sec Sch
Reitumenste Sec Sch
Ribane Laka Sec Sch
Rondebult Sec Sch
Saulsridge Sec Sch
Vlakfontein Technical College

Limpopo

Bakenberg High Sch
Baropodi Community Sch
Bokamoso Sec Sch
EDL Rampola
Giyani High
Hoxani College
Hudson Ntsanwisi Sec
Lebowakgomo Commercial
Leolo High School
Lephadimisha Sec Sch
Mabogopedi Sec Sch
Mahwibitswane High
Makilele Sec Sch
Malamulele
Maphokwane Sec Sch
Mapulaneng College
Maths, Science & Techn Educ (MASTEC)
Matladi High Sch
Matome Malatje Sec Sch
Mbilwi Sec Sch
ME Makgato Sec
Mmatsela Sec Sch
Mmiditsi Sec Sch
Modjadji Community
Modubatse High Sch
Mokome a Mabula High
Mokopane College
Morakalebole Sec Sch
Mphezulu
Nape a Ngwato
Naphuno College of Education
Nkateko
Orhovelani
Phagameng High Sch
Phala High
Phatametsane Senior Sec
Phehelelo Sec Sch
Relson Tshinanne
Sekhukhune College
Soetfontein Community
Tabudi Sec Sch
Thsaululo Learning Centre
Tshimane College
Vend College of Education

Mpumalanga

Beestepan Agricultural High
Boleu High School
Dan Kutumela
Dlomodlomo Sec Sch
Jacob Mdluli Sec
Kopanong Sec Sch
Mphanama Comprehensive
Seidet Centre
Silamba High
Sofunda Sec Sch

North West

Bokamoso Sec Sch
Holy Trinity (Winterveldt)
Mabopane High
Makgetse High Sch
Maths, Science, Commerce & Technoloy (MASCCOM)
PHL Moraka High Sch
Ratshepo
Rustenburg Education College
Sekhululekile High School
Sekitla High School
Tshepagalang Sec Sch

TLEI - Staff 2004

TLEI Executive

Name	Position	Telephone	E-mail
BOON J A Prof [Hans]	*Director*	+27 12 420 4112	jaboon@up.ac.za
LE ROUX A [Annemarie]	*Senior Secretary*	+27 12 420 2080	annemarie.leroux@up.ac.za
BROWN T H Dr [Tom]	*Deputy Director*	+27 12 420 3884	tom.brown@up.ac.za
JACOBS L [Laetitia]	*Secretary*	+27 12 420 3466	laetitia.jacobs@up.ac.za
LE ROUX I [Irene]	*Deputy Director*	+27 12 420 3664	irene.leroux@up.ac.za
VICTOR D [Dorette]	*Adm Assistant*	+27 12 420 2681	dorette.victor@up.ac.za

Operational Office

McCABE L M [Magda]	*Adm assistant*	+27 12 420 2564	magda.mccabe@.up.ac.za
DE WAAL H E [Elize]	*Administrative Officer*	+27 12 420 3869	elize.dewaal@.up.ac.za

Action Research and Development

DU PLESSIS G I Dr [Gerhard]	*Specialist : Action R&D*	+27 12 420 3323	gerhard.duplessis@up.ac.za
BORNMAN J [Jeanette]	*Snr Admin Control Officer*	+27 12 420 3787	jeanette.bornman@up.ac.za

Educational Support Team: Education, Humanities, Law and Theology

JORISSEN H W Dr [Willem]	*Head: E-learning and Education Consultation*	+27 12 420 2568	willem.jorissen@up.ac.za
FRESEN J [Jill]	*Project Manager*	+27 12 420 4626	jill.fresen@up.ac.za
GOSSMANN C [Carol]	*Education Consultant*	+27 12 420 5176	carol.gossmann@up.ac.za
LOTRIET M [Marena]	*Snr Education Consultant*	+27 12 420 4748	marena.lotriet@up.ac.za
RAMMUPUDU J [Jackie]	*Instructional designer*	+27 12 420 4377	jaqouline.rammupudu@up.ac.za
VENTER L [Liana]	*Instructional designer*	+27 12 420 2131	liana.venter@up.ac.za
VOLSCHENK G [Gail]	*Snr Education Consultant*	+27 12 420 3621	gail.volschenk@up.ac.za

Educational Support Team: EBIT, Natural and Agricultural Sciences, Economic and Management Sciences and GSB

HAUPT S [Sanet]	*Head: E-learning and Education Consultation*	+27 12 420 4285	rhena.delport@up.ac.za
DELPORT R Dr [Rhena]	*Snr Education Consultant*	+27 12 420 3500	rhena.delport@up.ac.za
DRYSDALE E [Estelle]	*Instructional designer*	+27 12 345 6364	estelle.drysdale@up.ac.za
JACOBS G [Gretchen]	*Instructional designer*	+27 12 420 4378	gretchen.jacobs@up.ac.za
JORDAAN AJJ [Dolf]	*Project Manager*	+27 12 420 3721	dolf.jordaan@up.ac.za
MARX A [Alta]	*Instructional designer*	+27 12 420 4121	alta.marx@up.ac.za
NAIDOO A [Ari]	*Snr Education Consultant*	+27 12 420 3768	ari.naidoo@up.ac.za
PRETORIUS G [Gaby]	*Instructional designer*	+27 12 420 4301	gaby.pretorius@up.ac.za
SLABBERT [Johan]	*Instructional designer*	+27 12 420 3825	johan.slabbert@up.ac.za
STEYN A B Dr [Dolf]	*Chief Education Consultant*	+27 12 420 3870	dolf.steyn@up.ac.za

Educational Support Team: Health Sciences and Veterinary Science

STREHLER A [Anne]	*Head: E-learning and Education Consultation*	+27 12 354 1575	anne.strehler@up.ac.za
DANNHEIMER S [Sigi]	*Graphic Artist*	+27 12 354 1836	sigi.dannheim@up.ac.za
DE BRUYN E [Erika]	*Instructional designer*	+27 12 354 2267	erika.debruyn@up.ac.za
HEFER, R [Rika]	*Section Head: Graphics*	+27 12 354 1959	rika.hefer@up.ac.za
KRUGER K [Karen]	*Adm Assistant*	+27 12 354 2395	karen.kruger@up.ac.za
MAYHEW E [Estelle]	*Graphic Artist*	+27 12 529 8097	estelle.mayhew@up.ac.za
MOSTERT E Dr [El-Marie]	*Project Manager*	+27 12 529 8251	el-marie.mostert@up.ac.za
PICKWORTH G E Dr [Glynis]	*Chief Education Consultant*	+27 12 354 1909	glynis.pickworth@up.ac.za
SCHEEPERS D [Detken]	*Instructional designer*	+27 12 354 1762	detken.scheepers@up.ac.za
VAN BLERK H [Hannalie]	*Graphic Artist*	+27 12 354 2219	hannalie.vanblerk@up.ac.za
VAN DYK A [Anton]	*Video Producer*	+27 12 354 1852	anton.vandyk@up.ac.za
VERMEULEN C A [Charmaine]	*Senior Photographer*	+27 12 529 8062	charmaine.vermeulen@up.ac.za
REYBURN DB [Duncan]	*Graphic Artist*	+27 12 529 8097	duncan.reyburn@up.ac.za
WOLMARANS H [Henriëtte]	*Instructional designer*	+27 12 808 3516	henriette.wolmarans@up.ac.za

Graphic and Photographic Services

Name	Position	Telephone	E-mail
ZIMMERMAN K D [Kim]	*Graphic Specialist*	+27 12 420 3932	kim.zimmerman@up.ac.za
WILSON J D [Jenni]	*Graphic Artist*	+27 12 420 4260	jenny.wilson@up.ac.za
VAN DEN HEEVER C C [Ina]	*Graphic Artist*	+27 12 420 4264	ina.vandenheever@up.ac.za
VOLKER S D [Sharon]	*DTP Layout artist*	+27 12 420 3826	sharon.volker@up.ac.za
DANNHEIMER S [Sigi]	*Graphic Artist*	+27 12 354 2395	sigi.dannheim@up.ac.za
HEFER, R [Rika]	*Section Head: Graphics*	+27 12 354 2395	rika.hefer@up.ac.za
MAYHEW E [Estelle]	*Graphic Artist*	+27 12 529 8097	estelle.mayhew@up.ac.za
VAN BLERK H [Hannalie]	*Graphic Artist*	+27 12 354 2395	hannalie.vanblerk@up.ac.za
REYBURN DB [Duncan]	*Graphic Artist*	+27 12 529 8097	duncan.reyburn@up.ac.za
ZULU, M [Mavis]	*Special Worker*	+27 12 529 8097	
MOLONEY M L [Melita]	*Senior Photographer*	+27 12 420 2651	melita.moloney@up.ac.za
VERMEULEN C A [Charmaine]	*Senior Photographer*	+27 12 529 8062	charmaine.vermeulen@up.ac.za

Video Services

DU PLESSIS A F [André]	*Video producer*	+27 12 420 4031	adupless@postino.up.ac.za
POND S J [Stephanie]	*Video director*	+27 12 420 2270	spond@postino.up.ac.za
VAN DYK A [Anton]	*Video Producer*	+27 12 354 1575	anton.vandyk@up.ac.za

Schools Project, Logistics, Off-campus Support and Partnerships

JORISSEN H W Dr [Willem]	*Head: Logistics and Partnerships*	+27 12 420 2568	willem.jorissen@up.ac.za
BOTES MW [Ina]	*Admin Assistant*	+27 13 690 2325	ina.botes@up.ac.za
HOLWORTHY L [Lillith]	*Snr Admin Officer: TeleHelp & Off-camous exams*	+27 12 420 2678	lillith.holworthy@up.ac.za
MODJADJI H [Hettie]	*Special worker*	+27 12 420 4747	hettie.modjaji@up.ac.za
NDLOVU F [Faith]	*Project Manager: Schools Project*	+27 12 420 5177	faith.ndlovu@up.ac.za
SIEBERT F[Francis]	*Admin Assistant*	+27 12 420 4431	francis.siebert@up.ac.za

Education Technology

DU PISANI L A [Almero]	*Head: Educational Technology*	+27 12 420 3779	almero.dupisani@up.ac.za
FREYSEN J B Dr [Johan]	*Chief Education Consultant*	+27 12 420 4625	johan.freysen@up.ac.za
GREYLING W [Willie]	*Technical officer*	+27 12 420 4029	willie.greyling@up.ac.za
RABIE S [Samantha]	*One stop service*	+27 12 420 2898	samantha.rabie@up.ac.za
MABOEA S S [Samuel]	*Assistant: A/V equipment*	+27 12 420 4288	
MAREMA J [Jacob]	*Technical asst-Mamelodi campus*	+27 12 842 3558	marma-@marlin.vista.up.ac.za
SELOANE N [Nicholas]	*Supervisor:Loan section*	+27 12 354 2392	
TSIANE L R [Robert]	*Supervisor: Loan Section*	+27 12 420 2650	robert.tsiane@up.ac.za
VAN DER MERWE J H Mr [Hennie]	*Studio manager: ITE*	+27 12 420 3722	hennie.vandermerwe@up.ac.za
WIECHERS A J [Adriaan]	*Technology Co-ordinator*	+27 12 420 5531	adriaan.wiechers@up.ac.za
RALIPHADA PL [Lance]	*Electronic Technician*	+27 12 420 4446	lance.raliphada@up.ac.za

Support Staff

SEDIBE M N Mrs [Martha]	*Assistant*	+27 12 420 3807
ZULU, M [Mavis]	*Special Worker*	+27 12 529 8097

Student Scholarships

Name	Position
Beukes A P [mr]	*Broadcasting*
Bleeker N A [mr]	*WebCT*
De Wet M [mr]	*Broadcasting*
Engelbrecht J A [mr]	*Broadcasting*
Goosen A [ms]	*Quest*
Kandie W C [ms]	*Education Consultation*
Maluleke R R [mr]	*Education Technology Assistant*
Masenya M F [ms]	*Temporary*
Matshaba K A [mr]	*Programmer*
Mogashana B [mr]	*WebCT*
Mohlapamafsi M E [mr]	*Education Technology Assistant*
Muller J F [mr]	*Programmer*
Naudé V [ms]	*Broadcasting*
Nkosi S Z [mr]	*WebCT*
Phalane J M [mr]	*Education Technology Assistant*
Phele M K [mr]	*WebCT*
Potgieter L [ms]	*Education Consultation*
Raletjene M M [mr]	*WebCT*
Rannzida N E [mr]	*Education Technology Assistant*
Stegmann A M [ms]	*Education Consultation*
Van der Gryp E R [ms]	*Broadcasting*
Van der Walt C [ms]	*Research assistant*
Van der Walt E [ms]	*Education Consultation*
Van der Wath M E [ms]	*Testing*
Van Dyk N [ms]	*Broadcasting*

Compiled by: Irene le Roux
Production co-ordination: Alta Marx
Design and layout: Kim Zimmerman
Photographer: Melita Moloney
Printing: Vision Print

Contact details:
Department of Telematic Learning and Education Innovation
Education Law Building R3-58.3
Lynnwood Road, Pretoria
0002, South Africa

Tel: +27 (0) 12 420-2678
Fax: +27 (0) 12 420-4054
E-mail: jaboon@up.ac.za
www.up.ac.za/telematic

UNIVERSITY OF PRETORIA

University of Pretoria Lynnwood Road Pretoria 0002

Tel: +27 12 420- 4111 Fax: +27 12 420-4555

Website: http://www.up.ac.za

Publication date: 1 August 2004