

UNIVERSITY OF CAPE TOWN

Teaching and Learning Report



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1. Introduction ¹

2011 was a very significant year for teaching and learning at UCT. Mindful of the need to address the HEQC recommendation to strengthen arrangements for teaching and learning, the University restructured all of the committees in the academic cluster, and consolidated oversight for teaching and learning in the portfolio of one of the four Deputy Vice-Chancellors. UCT's decision to establish a Teaching and Learning Committee, and an additional seven sub-committees that from 2012 will report to the Teaching and Learning Committee, will go a long way to improving the academic governance of teaching and learning, and to ensuring greater commitment to promoting strategies for the development of teaching and learning in line with the University's overall mission. The newly- established Quality Assurance Committee, which is tasked with monitoring the implementation of the University's policies, systems, procedures, strategies and resources for the management of the quality of the core functions, including those of teaching and learning, will also play an important role in future efforts to coordinate the work of the eight committees in the academic cluster.

Greater commitment to underlining the importance of teaching and learning at UCT has also been signalled through a number of other, interrelated initiatives. These include the establishment of the Academic Teaching Rich Track, and increasing attention to teaching and learning as a criterion for promotion, including, in some faculties, the requirement that anyone seeking promotion must submit a reflective teaching portfolio. Most faculties are also concerned to pay more attention to the need for staff development through participation in the New Academic Practitioners Programme (NAPP) and other more informal structures. The use of senior staff as mentors has become increasingly common, while workshops aimed at promoting debates on issues of shared interest and the piloting of teaching innovations, have contributed substantially to the promotion of a culture of enquiry focused on improving teaching and learning. The importance of continuing professional development has also been identified as an important area for staff development in several faculties.

In addition to these interventions, UCT's increasing commitment to teaching and learning has encouraged a more focused attention to diverse modes of delivery and the use of technology as a tool for improving effective interaction and, by extension, student success. As the 2011 report demonstrates, there was an active interest in developing a range of teaching interventions, from solo command performances to highly interactive, peer-to-peer learning experiences. While in some contexts, the traditional model of lectures as content delivery has been retained for very compelling reasons, this practice has also been challenged by models that favour peer instruction and interactive teaching as alternatives. Other innovations include the promotion of active learning and problem solving tutorials and a growing interest in 'flipping' the classroom. The fact that diverse solutions are required to ensure student success is also evidenced by the provision of off-campus learning experience in, for example, the Science and Health Sciences Faculties, where students participate in programmes that require them to travel as far afield as Vredenburg, the De Hoop Nature Reserve, Elandsfontein near the West Coast Fossil Park, and Clanwilliam. In some cases, they even go off-shore, making use of small crafts or the Research Ships SA Agulhas and its successor, SA Agulhas II.

The importance of technology in shaping the future of teaching and learning is evidenced by several initiatives, such as the decision to provide wireless access throughout the campus, and in all residences; the initiation of the laptop project; and the rollout of the lecture-recording project. While these trends are

¹ DVC S Kloppe

in line with international practice, their importance in the UCT context is underscored by the pressing need to improve student success across all faculties. Among the many significant consequences of these developments is the fact that the lecture-recording project empowers students by affording them the opportunity to (re)view foundational lectures once they are better able to grasp the context of the material they are expected to study and master. Importantly, initial fears that technology-enhanced learning might discourage students from attending lectures have in most cases been misplaced.

Despite these and other interventions, poor success rates remained a major challenge, suggesting that there is no room for adopting a 'business as usual' approach to the teaching and learning enterprise. For example, the black vs white success rate differential in courses at the crucial 100-level remains unacceptably high (at 13 percentage points). Similarly the academic progress of first-time entering undergraduate cohorts remains starkly differentiated along racial lines: the five year cohort completion rate amongst white students in the 2007 entry cohort was 33 percentage points higher than that amongst black South African students. The lower completion rate amongst black students is to some extent attributable to the expansion of extended programmes, but slightly less than a third of the 2007 intake had been excluded on academic grounds by the end of 2011. The exclusion rate amongst successive black first-time entering cohorts has in fact worsened quite markedly over the five cohorts examined in the report, largely as a result of the substantial numbers of students excluded within EBE and Sciences, and to a lesser extent, in the Faculty of Law. The problematic success rates amongst black undergraduate students to a large extent negate the recent shifts in the demographic profile of the student body and, until these improve, the graduating class will continue to be a poor reflection of the incoming class. Examination of the academic progress of entering cohorts at the Master's and Doctoral levels suggests that there are also problems in relation to completion rates at the senior postgraduate level. Up to 31% of new Doctoral students and 27% of new Master's students drop out of UCT without completing their studies. The particularly high rate of non-completion amongst Health Sciences Master's students is expected to drop markedly now that the dissertation component of the MMed has become compulsory in order to practice as a specialist. There is, however, a broader need to understand the reasons for the high levels of drop out amongst both Master's and Doctoral students, with a view to putting in place appropriate interventions.

Against the background of these stark statistics, many faculties and departments have recognised the need to effect sweeping curriculum revisions. An excellent example is afforded by recent initiatives in EBE. Some faculties also identified other interventions, including the potentially transforming role of senior peer tutors; the importance of mentoring incoming students; and the need to address the emotional and social needs of students as part of an holistic approach to improving throughputs. As the experience of 2011 suggests, ongoing commitment to the alignment of curricula across cognate disciplines; to developmental work, inter-departmentally and within faculties, but also throughout the institution; and to the promotion of best practice through, for example, the newly-implemented annual Teaching and Learning Conference, is essential to the effective realisation of UCT's commitment to realising its goal of improving student success. Other interventions include the use of the third semester option, which was supported by earmarked funding from the DHET.

The DHET's decision in 2011 to introduce earmarked funding in the form of Teaching Development grants had the important effect of forcing tertiary institutions in South Africa to develop a more self-reflexive approach to interventions designed to improve teaching and learning. UCT's Centre for Higher Education Development responded to this challenge by proposing five initiatives aimed at improving graduate rates. Two of these initiatives focused on improving throughputs at the undergraduate and postgraduate levels, while the remaining three sought to enhance the effectiveness of teaching to contribute to this aim, and to the promotion of appropriate graduate attributes. Three awards were made to promote collaborative approaches to enhancing the teaching and learning environment in Commerce

(Accounting). Science (Statistical Sciences), and Health Sciences (EDU), and 17 awards were made for Teaching grants, some of which involved the purchase of equipment such as tablets for innovation in classroom teaching, and the development of online or web-based teaching resources.

It seems likely that the DHET will continue to use earmarked funding to shape the teaching and learning strategies of South Africa's tertiary institutions into the foreseeable future. The potential impact of this intervention presents a number of challenges with no guarantees of predictable outcomes. But the decision to implement the practice of providing earmarked funding also affords opportunities for rethinking and even reinventing options for improving throughputs, and for producing graduates who are both resourceful and capable of responding creatively to the realities of the worlds they are likely to encounter once they leave the comparatively safe environment of the university. Efforts to ensure student success by developing curricula that will improve their ability to handle uncertainty, think strategically and adapt to the continually changing demands of the workplace contribute significantly to UCT's reputation for providing highly competitive degree programmes that are not only relevant, but that have also been benchmarked both locally and internationally.

As the contributions on research-led curricula demonstrate, faculties are increasingly concerned to adopt more reflexive approaches to teaching practice. In most cases, this has led to enormously time-consuming debates aimed at developing new curricula. But, it is also clear from this report that there are very diverse understandings of what it means to promote research-led curricula. Some faculties and departments have focused on research that aims to ensure student success including, for example, the use of action research to address the impact of prior school practices on the inability of students to grasp fundamental principles and concepts. Others have reflected on the role of research-enhanced teaching, such as the inclusion of recent research findings in undergraduate courses. Regardless of how diverse these approaches and foci are, it is clear that the relationship between teaching and research at UCT is not only dynamic, but has also become increasingly productive. In future, all faculties will hopefully give greater attention to extending research opportunities for senior undergraduate students.

2. Major university-wide initiatives designed to improve the quality of teaching and learning at UCT that took place in 2011

2.1 Restructuring of committees in the Teaching and Learning Area²

UCT's Self-Review Portfolio prepared for the Higher Education Quality Committee's (HEQC's) Audit in 2005 noted that UCT's devolved approach to teaching and learning quality depends on faculty arrangements to ensure compliance with various institutional policies related to teaching and learning. However, the HEQC's Audit report noted that the Self-Review Portfolio was silent about dedicated high-level leadership and oversight for teaching and the articulation of such oversight with the Deans' responsibilities in relation to teaching and learning. The Audit Report accordingly urged the "University to address issues of academic governance in Teaching and Learning in an effort to find an appropriate balance between devolution and management accountability" (HEQC 2006). The report also commented on the fact that faculties have different arrangements to assure quality and different approaches to the support and development of quality teaching, differences which may carry possible quality compromises. Hence UCT was urged to consider strengthening its arrangements for the teaching and learning function, taking into account the roles and capacities of the responsible DVC, the Deans and Heads of Departments, and the need expressed by the institution to achieve a more effective articulation of the relevant academic management structures (HEQC, 2006).

² Contributed by Ms J Favish

In response to the Audit Report, UCT developed a University Quality Improvement Plan (UNIQUIP). This plan included objectives aimed at strengthening the academic governance of teaching and learning, and establishing a Teaching and Learning Committee to deal with first level qualifications, reporting to Senate and mirroring, insofar as was thought appropriate, the University Research Committee. It also included a commitment to conducting a review of Senate Committees with a view to streamlining them.

In 2009, the portfolios of the Deputy Vice-Chancellors were reviewed and oversight of teaching and learning was consolidated into one portfolio.

In 2010 Prof Beall initiated a review of the committees in the academic arena. In addition to the concerns raised in UCT's audit report about the need for UCT to strengthen the academic governance of teaching and learning, she was concerned about the multiple structures in the academic cluster with no clear mechanism for coordinating the work of the committees in the cluster. She established a task team reporting to the Quality Assurance Working Group to generate proposals for restructuring the committees. A/Prof Yeld continued to oversee the restructuring process after she was appointed as the Acting Deputy Vice-chancellor responsible for Teaching and Learning. After much iteration the proposals for restructuring all of the committees in the academic cluster were approved by Senate in November 2011, except for the proposals related to the proposed Teaching Awards sub-committees.

The purpose of the Teaching and Learning Committee is to develop and promote strategy for the development of teaching and learning, thus contributing to the University's overall mission. Specifically, the Teaching and Learning Committee will advise and make recommendations to Senate and/or other University bodies on:

- All matters related to teaching and learning with a focus on undergraduate and all taught postgraduate programmes
- Means of measuring the quality of teaching and learning
- Matters related to student progression
- Means of promoting improvements in teaching, curriculum and assessment
- Ways to enhance and improve students' learning experiences
- Matters arising from national, institutional and regional challenges, possibilities and policies which have implications for teaching and learning and academic planning

Seven sub-committees report to the Teaching and Learning Committee. These are:

- The Adult Learning sub-committee
- The Examinations and Assessment sub-committee
- The Language Committee
- The Programme Accreditation and Approval sub-committee
- The Teaching Awards sub-committee
- The Distinguished Teaching Awards sub-committee
- The Timetable and Examinations sub-committee

In November 2011 Senate also approved the establishment of a Quality Assurance Committee (QAC). The purpose of the Quality Assurance Committee is to monitor the implementation of the institution's policies, systems, procedures, strategies and resources for the **management of the quality** of the core functions of teaching and learning, research and social responsiveness the effectiveness of the quality management systems of PASS departments, as well as to promote a culture of continuous improvement within the university.

2.2 Organisation of the first Teaching and Learning Conference at UCT³

A task team consisting of staff from CHED and the Institutional Planning Department (IPD) organised the first Conference on Teaching and Learning at UCT on Friday 11th November 2011. The conference served as an opportunity to reflect on and debate approaches to teaching in our current South African context. We showcased some of the work by teaching award winners and invited all UCT members of staff who wished to present to submit abstracts. Over 30 academic staff presented in three parallel sessions during the day. The themes included assessment, curriculum, tutoring, language and academic literacies and the use of ICT's in education. While over 200 people registered for the event, the sessions were attended by between 100 and 120 participants at any one time.

Despite the very enthusiastic participation and discussion at the session, and positive feedback from the evaluation, an analysis of the attendance figures reveals areas in need of attention. It is hoped in future events of this kind to encourage a more significant presence of senior university leadership throughout the day.

The conference also provided the opportunity for setting up a teaching and learning website (www.teachingandlearning.uct.ac.za). The website was used to manage the submission of abstracts and registrations and will form the basis of an expanded portal for teaching and learning at UCT.

2.3 Description and analysis of the outcomes of the HEQF alignment exercise⁴

In 2011 the Council for Higher Education (CHE) launched a plan for aligning all existing programmes offered by public and private providers with the Higher Education Qualifications Framework (HEQF), a project that is envisaged to take until 2015 at the earliest to complete. The HEQF establishes common parameters and criteria for qualification design and facilitates the comparability of qualifications across the system. Phase one of the alignment exercise involved the submission of data on current offerings categorised into A, B and C groupings, viz:

- Category A programmes requiring few or no changes
- Category B programmes requiring some curriculum development, but not so much as to constitute a 50% change to the programme structure, outcomes or total credits
- Category C programmes requiring major curriculum development resulting in more than 50% change to the programme design, or programmes which the institutions planned to phase out

UCT started preparing for this exercise early in 2010 by reviewing postgraduate programmes to see whether they complied with the requirements for research credits specified in the HEQF, in line with our focus on research.

In the first semester of 2011 the IPD held faculty-based discussions with Deputy Deans of undergraduate and postgraduate education and other Programme Convenors. In preparation for the faculty-based discussions a mapping of 758 programmes registered by the South African Qualifications Authority (SAQA) and/or in UCT handbooks was done by the IPD, based on information in the handbooks and the SAQA database. The exercise was very complex, as the templates which IPD prepared, covered about 40 different categories of information for each offering. After consultations with the faculty managers, Deputy Deans and many Programme Convenors across the campus, the templates were approved by Senate in December 2011. The final templates, which were submitted to the Higher Education Quality Committee (HEQC) on 15 January 2012, contained:

³ Contributed by A/Prof J Jawitz

⁴ Contributed by Ms J Favish

- 195 Category A programmes
- 94 Category B programmes
- 469 Category C programmes, of which about 400 will be, or have already been, phased out

We are awaiting feedback from the HEQC on whether the 195 Category A qualifications will be deemed HEQF aligned and accredited as such. We are also waiting for guidelines on additional information that may be required in order to submit our Category B qualifications for accreditation. In the meantime we continue to submit applications for new qualifications for accreditation as and when they are approved by Senate. Nine applications have already been submitted in 2012. We are still awaiting the Gazette with the revised HEQF before preparing applications for Professional Master's qualifications.

Assessment of the Exercise

Most of the exercise involved pure compliance with the requirements of the HEQF designed to achieve common parameters and criteria for qualification design across the higher education system in the country.

However the exercise also served as a catalyst to improve our academic planning processes and handbooks. For example:

- UCT's suite of offerings was streamlined resulting in the elimination of 408 programmes registered on SAQA
- All the programmes which the faculties were no longer offering, or which they were not planning to offer in the future, were removed from handbooks
- Future handbooks will indicate the HEQF levels of courses, thus explicitly marking progression through the various levels of the HEQF. In the future the handbooks will clearly distinguish between separately accredited named qualifications and streams within qualifications
- All postgraduate programmes will comply with the minimum requirements for research credits
- Faculties revisited the levels of some of their offerings to ensure that the courses were pitched at the appropriate levels in line with the primary purposes of the qualifications. This resulted in upgrading or downgrading of courses where necessary
- In several instances where the total credits for qualifications were way above the minimum required, the total credits were reduced to decrease the load on the students

UCT now has a comprehensive map of all qualifications offered at UCT with detailed information on each of these qualifications that can be used for planning purposes. We also have an indication of significant changes and new qualifications being considered by the faculties. This information can be used to identify potential synergies between programmes across the university, which could potentially form the basis of new interdisciplinary programmes.

Examples of alignment with UCT's Mission, gleaned from the HEQF templates:

At the beginning of 2009 the Vice Chancellor, Dr Price, launched a process to develop a new strategic plan for the university and to revise the 1996 Mission in the light of fresh strategic goals. The revised mission and strategic plan were adopted at the end of 2009. This new mission committed the university to producing graduates "whose qualifications are internationally recognised and locally applicable, underpinned by values of engaged citizenship and social justice" (UCT, 2009). The foundation statement underpinning the mission committed the university to providing a superior quality educational experience for undergraduate and postgraduate students through, amongst other things:

- stimulating the love of life-long learning
- the cultivation of competencies for global citizenship
- supporting programmes that stimulate the social consciousness of students

- exposure to the excitement of creating new knowledge
- offering access to courses outside the conventional curricula
- guaranteeing internationally competitive qualifications (UCT, 2009)

The goal of enhancing graduate attributes links to other UCT strategic goals, including internationalising UCT via an Afropolitan niche. In short this means ensuring that UCT graduates are prepared to live and work in a global world and that academic staff are equipped to prepare them for this future. It also implies that all our graduates should have a strong understanding of Africa and the continent's position in the world; are able to make connections between global issues and the impact of these on their local environments; and that they can exercise critical analysis in all respects. In practical terms, students need to be familiar with the key debates of our time and the range of viewpoints on them. Preparing our graduates to engage internationally also includes the acquisition of digital information and communication skills.

The HEQF templates contain many examples of how staff have integrated a stronger focus on Africa into their curriculum, as well as how graduate attributes are being used in parts of the university to inform curriculum design and assessment practices. Illustrative examples follow.

Graduate Attributes

Bachelor of Science in Physiotherapy:

Specific outcomes include an ability to:

- Understand the influence of social, economic and psychological factors that may affect the client's condition and subsequent progress in management
- Be aware of human rights as referred to in the country's constitution
- Recognise the cultural, social and historical context of clients
- Appreciate the impact of social change, the political decision-making process and economic imperatives of business, industry and government on health management
- Be aware of the interaction of broader health issues affecting South African society
- Appreciate the historical and current socio-economic and political issues facing the community and contributing to health problems
- Be sensitive and tolerant to the values, cultural and religious differences pertaining to health and illness of clients, their families and communities
- Recognise social justice issues relevant to health and physiotherapy
- Be able to communicate in the regional languages (isiXhosa and Afrikaans)

Master of Philosophy in Transport Studies:

The specific outcomes include an ability to:

- Situate urban passenger transport planning and management issues in the specific context of current and projected patterns of urban development in South Africa as a developing country
- Understand the implications of recent national (and provincial) policy directives and legislative requirements for urban passenger transport planning and management in South Africa
- Contribute effectively to the preparation of an integrated transport plan (ITP)
- Prepare local area transport plans (at the neighbourhood or sub-metropolitan scale)

The Bachelor of Social Work:

The specific outcomes include:

Foundational Competencies:

- Demonstrate a critical understanding of developmental processes at one or more intervention levels in a variety of settings within the South African development context
- Interpret given theories and locate these within current discourses on development practice within local and international contexts
- Demonstrate a sound understanding of the socio-political and legal structures and their influence on society and social services; and understand social service policy and delivery frameworks in South Africa and how this impacts on society and social services

Reflexive Competencies:

- Identify and respond appropriately to issues of social diversity and inequality
- Promote the process of transformation towards equity and democracy
- Be resourceful and utilise self-directed and self-reflexive learning strategies
- Utilise knowledge of management and supervision to enhance professional practice

Bachelor of Laws:

The specific outcomes include:

- Graduates with initiative, responsibility, and the requisite ethical standards to participate in promoting the administration of justice and the development of legal institutions in South African society
- Capacity to execute responsibility towards the realisation of a just society based on a constitutional democracy and the rule of law within an international legal order

Qualification Purpose

Postgraduate Diploma in Public Mental Health:

The World Health Organisation Atlas report has highlighted the vast inequities in mental health resources, and the urgent need to train and retain health and mental health professionals in low-and middle-income countries. A crucial gap is the overall policy, service and legislative framework that enables governments to deliver evidence-based interventions and address mental health systematically as a major public health and development issue. In many African countries, mental health professionals lack the public health training to develop policies, plan services, and work with policy makers to address the social determinants of mental ill-health such as poverty and conflict. There are currently no programmes on the African continent that undertake this training in public mental health. The establishment of this programme would therefore provide an opportunity for UCT to pioneer this training and capacity development work in Africa.

Postgraduate Diploma in Pesticide Risk Management:

Currently, key role players in pesticide risk management in Africa and other developing countries do not have access to a postgraduate course on pesticide risk management that addresses the principal areas covered by the United Nation's International Code of Conduct on the Distribution and Use of Pesticides. In fact no such course currently exists anywhere in the world or in Africa. It is therefore envisioned that the initial intake of students will be from Africa. However, India, Brazil, Spain, the Caribbean and West Indies have all indicated a keen interest in providing students for this course. Furthermore, the Food and Agricultural Organization of the United Nations (FAO) approached UCT to establish a Postgraduate Diploma course given its reputation and specifically its research work conducted on pesticides. Although

this course will first and foremost respond to the needs of pesticide regulators, the course content will also be relevant for health, labour, customs and pesticide inspectors, NGO staff working in pesticides, pesticide disposal and waste management project managers, pesticide laboratory analysts and researchers working in the field of pesticides.

Doctor of Philosophy in Economics:

This programme is offered in collaboration with other universities in sub-Saharan Africa and supported by the African Economic Research Consortium (AERC) through donor funding. Its distinguishing features are the integration of advanced theory, tools and African applications in the academic programme.

Master of Philosophy in Housing Development and Management:

Many African countries are experiencing a human crisis in terms of the need for affordable housing, the provision of which, and the formulation of housing policy, is an urgent priority. In addition, these policies require that a developmental delivery process is employed in providing the houses, rather than simply providing mass housing. Developmental delivery includes community participation in decision-making, community empowerment through job creation and sustainable skills creation and other measures. As a result of the above there is great demand for education and training in the skills needed by existing and would-be project management practitioners. This programme is intended to satisfy this need at the academic level of a Master's degree.

Bachelor of Arts Honours in Applied Linguistics and African Languages:

Students will be introduced to current research in Linguistics and Applied Linguistics with special reference to southern African and continental African studies. The programme thus prepares students to work in the field of African language development. It aims to produce graduates who will be able to work on language development issues in African languages, in keeping with calls for the "intellectualisation" of African languages, in relation to the country's constitutional provisions on language.

2.4 Extending wireless on campus and benefits for teaching methodologies⁵

It is envisaged that UCT will be fully wireless accessible by the end of 2012. In 2011, coverage was extended to more than 20 buildings, making it possible for students and staff to use various mobile devices in an increasing number of venues. Until universal ownership of an appropriate laptop or mobile computing device is achieved however, maximum benefit for teaching and learning approaches and processes of this increased wireless network coverage is constrained.

In an attempt to address the 'equity gap' (differences in learning opportunities for students depending on their levels of access to technology), plans were supported in 2011 to participate in the National Student Laptop Initiative, a joint project of the Association of South African Information Technology (IT) Directors and a purchasing consortium. The aim of this scheme was to consolidate procurement strategies to negotiate better prices with suppliers, and therefore make laptop ownership more attainable for a wider group of students. Two vendors were chosen (Acer and Lenovo) to provide laptops at highly competitive prices, and in 2012 it is planned that tablet devices be added to the range of devices. Plans are also underway for the establishment of an IT shop on upper campus to facilitate the successful running of this initiative through providing commercial facilities as well as some level of support.

The extent to which increased wireless coverage and lower prices for laptops have in fact enhanced teaching and learning at UCT, and reduced inequities, remains to be assessed.

⁵ This section drew on contributions by Kira Chenotsky and Stephen Marquard.

A third major initiative in the educational technology area is the lecture recording project, which started in 2010 and aims to equip many of UCT's larger teaching venues with equipment to record sound, video and the projected computer display on request. The primary goal of the project is to provide students with an additional study resource, enabling them to replay lectures or parts of lectures in their own time. Secondary benefits include the possibility of making some lectures available to a wider audience as a public resource, and giving students access to a broader set of lecture materials from previous years and other courses related to their field of study.

The project has many interesting dimensions. First of these is that there is no "standard model" for the lecture as a teaching event. At the most basic level, a lecture is whatever is made of the opportunity presented by students and academics being in the same place at the same time. How this "face-time" is actually used is shaped and mediated by the prior experience of academics, the nature and demands of the course and discipline, the motivation, interest, abilities and academic backgrounds of the students which impact on what they are able to learn from the experience, and the affordances of the physical space and the enabling technologies which it contains. Thus lectures span the gamut from solo command performances to highly interactive, peer-to-peer learning experiences.

As can be imagined, these mediating and shaping factors impact strongly on academic opinion on the appropriateness and value of recording lectures. Responses to two campus-wide surveys suggest a group of early adopters (around 10% of respondents) who either already record lectures or would like all lectures to be recorded, another group (about two-thirds) who favour recording some lectures if possible, and a "refusenik" group of around 15% who do not wish to have their lectures recorded at all. Concerns of this latter group include the belief that the process of recording lectures commodifies intellectual work, or devalues the face-to-face teaching experience, or that it will adversely impact on student attendance.

While the project is too new at UCT to gauge student feedback or the impact on student learning or throughput, international research on similar programmes suggests that students value lecture recordings highly as a learning resource, but benefit principally when the recordings are viewed continuously throughout the course rather than used as a substitute for lecture attendance or as a last-minute catch-up strategy. This is not a surprising finding, suggesting as it does that students perform best when they continuously and actively engage in the learning process.

As with other technologies which have been assimilated into education, lecture recording is likely to have a range of subtle and not-so-subtle effects in the medium to long term. The model of the lecture as a content-delivery mechanism is already being challenged by advocates of peer instruction and interactive teaching such as Eric Mazur. So where a particular topic has been well-covered in a series of recorded lectures, there may be less incentive to repeat the same lectures in subsequent years (while the content remains fresh), rather than for example using the recordings as a resource for students to access in their own time, and using the class time in more engaging ways. Such a shift would require skilful curriculum design, however, to ensure that the essential materials are indeed used as learning materials in intended ways.

The project has also brought the question of the physical infrastructure and equipment in lecture theatres and classrooms into sharper focus. Lecture recording requires a higher level of reliability of baseline equipment such as microphones and data projectors, and provides added impetus for modernization programmes such as replacing overhead projectors with document cameras. Equally, care needs to be taken such that teaching technologies further liberate educators in their classroom practices, rather than introduce a new set of constraints.

2.5 Department of Higher Education and Training Teaching Development Grant: rationale and progress report⁶

In 2011, for the first time, UCT was invited by the Department of Higher Education and Training to apply for Teaching Development Grant (TDG) funds. In the past, the university had not been eligible for such funding, which was targeted only at institutions with very low graduation rates. The very late notice of our eligibility to apply resulted in the Centre for Higher Education Development being asked to prepare a submission with insufficient time to undertake the consultation that has been possible in 2012. The difficulties were exacerbated by the lack of criteria to guide the process.

Despite these difficulties, five initiatives were developed and submitted in April 2011, all aiming to improve graduation rates. Two of the initiatives were directly student-facing, with one focusing on undergraduate throughput and the other on postgraduate. The remaining three aimed to enhance the effectiveness of teaching, as a means of ensuring enhanced throughput and appropriate graduate attributes.

The university was informed late in September 2011 that the proposals had been successful. This late notification inevitably meant that not all the projects could be completed by the end of 2011. As can be seen by the brief reports below, we are confident that this will have been achieved by the end of 2012.

Improving undergraduate throughput rates

This project aimed to make it possible for students on financial aid to register for courses in the Third Term in 2011. The funds were used to cover accommodation and fee costs. Fifty three students were assisted in this way, and 41 (77%) passed, thereby shortening their time to graduation.

Improving postgraduate throughput rates

A major issue that has been identified in the broad postgraduate area is that of slow throughput or high drop-out rates particularly in relation to Master's degrees. The problem seems to be located in the extended writing required in the dissertation, for both research and course-work students. For students in the quantitative disciplines, their undergraduate years have usually provided insufficient opportunity for writing substantial texts: for students in social science and humanities disciplines, difficulties are experienced in writing about and using quantitative data. The project thus aimed to establish and evaluate the utility of a five-day intensive Research Literacies short course aimed at UCT registered Honours and Master's candidates. The course included the following focus areas:

- Identification of the genres of research writing (e.g. abstracts, proposals, journal articles, web-pages, dissertations) and analysis of such research texts
- Development of students' understanding of 'writing with numbers' / 'numbers as text'
- Development of students' understanding of the academic demands of using the ideas and texts of others (i.e. information literacy, including, but not limited to, search skills, referencing and paraphrasing)
- Developing students' awareness of the affordances of digital tools (such as cloud computing, computer aided data analysis, and learning management systems)

The course, held in early June 2012, was fully subscribed very soon after advertising, with 20 students registered (the maximum number appropriate for this kind of intervention). The long waiting list suggests an ongoing need and considerable demand. The course culminated in the preparation of pre-proposal concept papers. While it is still to be formally evaluated, indications are that it was very well received.

⁶ Contributed by A/Prof N Yeld

TDG funding was also obtained for three categories of award aimed at incentivising effective and innovative teaching and learning approaches and curricula.

Collaborative Educational Practice (CEP) Award

Three awards were made in this category in mid 2012, recognising and promoting collaborative approaches to enhancing the teaching and learning environment. The successful teams were from Commerce (Accounting), Science (Statistical Sciences) and Health Sciences (EDU).

UCT Teaching Grants

This funding was made available for application to a maximum of R30 000 during the first half of 2012. Eighteen applications were received, of which seven were from the Faculty of Health Sciences. All except one, submitted on behalf of a student organization, were supported. Several of the applications involved the purchase of materials (models) and equipment (tablets) to support innovation in classroom teaching. Several projects to develop online or web-based teaching resources were supported, as were opportunities to attend specialised courses and to present at workshops and conferences.

Teaching sabbaticals (leave replacement funds)

This grant was intended to provide funding to cover leave replacement costs for staff intending to take Study and Research Leave for the purpose of broadening their teaching experience or educational expertise, or to devote time to tackling an identified curriculum challenge. At this stage, take up of this opportunity has been disappointing, perhaps as its value is not yet well understood. Efforts will be undertaken during 2012 to encourage effective take-up.

2.6 Symposium on Graduate Attributes⁷

Improving the quality of university graduates was the focus of a symposium at the Sports Science Centre in March 2011, hosted by a joint task team consisting of representatives from the four universities in the Western Cape, The Consortium for Higher Education in the Cape, the Provincial Government of the Western Cape and the National Business Initiative of the Western Cape. Judy Favish, Director of UCT's Institutional Planning Department (IPD) chaired the planning group.

Two of the main drivers for exploring graduate quality were, firstly, employers' concerns about the quality of graduates, in particular, their ability to innovate, solve problems and function in constantly changing work environments – although it was emphasised that graduate attributes, or the notion of 'graduateness', is not simply about employability – and, secondly, the legacy of varying standards of graduates with the same qualifications from different Higher Education Institutions. In addition, growing national and international competition for students in higher education and student choice in terms of perceived value for money continue to fuel interest in the area.

While university mission statements make claims about the quality of graduates and their attributes, these are not necessarily meaningful to academics. Similarly, although there have been institutional-level debates around learning outcomes, and surveys on student satisfaction have been conducted, the area remains under-researched in South Africa. Currently, there are no national instruments for tracking and monitoring graduates or for obtaining feedback on the quality of their learning experiences at universities.

One of the key purposes of this symposium, therefore, was to gain a better understanding of how issues related to graduate quality have shifted and developed since 1994. In addition, by drawing on international research, as well as the experience of business, government and civil society, delegates would have the opportunity to shape a collaborative research agenda for the region and, possibly later, the

⁷ Contributed by Ms J Favish

broader national arena. The symposium was attended by about 100 people from government, business and universities. Fifteen academics and PASS staff from UCT participated in the symposium.

Three international academics were invited to give their perspectives on the notion of graduate attributes and to present their approaches to the subject. They were Prof Geoff Scott, the Pro Vice-Chancellor for Quality Assurance at the University of Western Sydney (UWS); Associate Prof Simon Barrie, Director for the Institute for Teaching and Learning, University of Sydney (US); and Dr Caryn Musil, Senior Vice-President at the Association of American Colleges and Universities. A follow up seminar with A/Prof Barrie and Dr Musil was organised at UCT.

Representatives from the four CHEC institutions in the Western Cape outlined progress in addressing graduate attributes as well as the associated challenges. In addition, the student voice was provided by a mandated representative from a larger group of student leaders who had discussed their perspective on the issue of graduate attributes. Presenters from members of local government, business and civil society agreed that success in the workplace is no longer as dependent on technical knowledge, but rather on the ability to handle uncertainty, work in a continually changing environment and to think strategically. It is important, therefore, that universities focus on their traditional roles of creating critical, free and independent thinkers who would be well suited to working in these conditions. The final session was devoted to brainstorming ideas for research aspects of graduate attributes within the Western Cape region. Participants gave very positive feedback on the value of the symposium.

The Planning Group met after the symposium and identified possible areas of work that would benefit from regional collaboration. It was decided that the initial focus would be on conducting a graduate tracer study. A follow up seminar was organised with Professor Ulrich Teichler from the International Centre for Higher Education Research at the Department for Social Sciences of the University of Kassel, and Prof Geoff Scott to discuss approaches to conducting graduate tracer studies. Work on a tracer study of graduates from the four institutions in the Western Cape has commenced.

2.7 Impact of the introduction of an Academic Teaching-rich Track⁸

The new policy on enabling the appointment of academic staff on Academic Teacher conditions of employment came into effect in 2011. According to data provided by the Appointments Office only four fulltime permanent academic staff, one in Commerce, two in CHED (Commerce) and one in Humanities, were appointed on Academic Teacher conditions of service after the policy was adopted.

Several appointments of academics in “teaching only” posts in the faculties of Humanities and Science were however made prior to the adoption of the new policy. To date these appointments have not yet been amended to bring them in line with the new policy framework.

2.8 Schools Improvement Initiative⁹

The problems with the public schooling have major implications for the country as a whole, but also for universities in particular. The impact is felt acutely at UCT where the ongoing under-achievement and failure of black learners in matric, particularly in township schools in and around Cape Town, results in relatively small numbers qualifying for entrance to our institution. Whereas South African universities have tended in the past to take the view that problems in schooling were not theirs to fix, UCT has accepted that this is something that must change.

⁸ Contributed by A/Prof J Jawitz

⁹ Contributed by Ms J Favish

In October 2011 Dr Jonathan Clark, the Director of the Schools Development Unit (SDU) in the School of Education was appointed to head up UCT's Schools Improvement Initiative. The Schools Improvement Initiative (SII) is a direct response then to the Vice-chancellor, Dr Price's, stated intention that the University of Cape Town should engage practically, developmentally as well as critically with the problems of schooling in this country. To achieve this, the SII is tasked to draw on university wide resources and initiatives, including student organisations. More details on activities that took place in 2011 can be found in UCT's 2011 Social Responsiveness Report.

2.9 Report on new programmes¹⁰

In 2011 only two new qualifications were accredited due to the focus on the HEQF alignment exercise. These were:

- Master of Arts in Neuropsychology
- Master of Commerce in Development Finance

In 2010 eight proposals for new qualifications were accredited, but only one admitted students in 2011, namely the Postgraduate Diploma in Addictions Care. Twenty three students enrolled for this programme. This programme received financial support from the Office of the Premier in the Western Cape, as it was set up in response to a need identified by the province through a process managed by the Consortium for Higher Education in the Cape (CHEC).

This year there are 57 students registered in the programmes accredited in 2011.

| Qualification | Total |
|---|-------|
| Postgraduate Diploma in Dermatology Nursing | 1 |
| Postgraduate Diploma in Psychotherapy | 4 |
| Postgraduate Diploma in Addictions Care | 22 |
| Postgraduate Diploma in Health Professional Education | 17 |
| Master of Philosophy in Emergency Medicine | 13 |
| Total: | 57 |

¹⁰ Contributed by Ms Favish and Ms J Hendry

3. Reflective pieces: approaches to research-led teaching at UCT

UCT's Strategic Plan 2010-2014 states that being a 'research-led' institution encompasses primarily two things:

First, it presupposes that the *quality of the research that it does must be excellent*, as measured by its impact and, secondly, it requires that *research informs everything* that it does, especially the other areas of its core business, namely teaching and socially responsive work. The plan therefore commits the university to the following:

- All UCT students must experience the importance of creating new knowledge by virtue of the fact that their teachers infuse their courses with the results of their research
- We must multiply the incentives for research to be fed into all levels of teaching, and for encouraging research by all students. In this regard it is important to revisit the documents on the linkage between research and teaching that have been developed in UCT in the recent past, in order to develop a comprehensive strategy for integrating research into teaching

To facilitate debate on how research is being brought into teaching the Teaching and Learning Committee decided to commission reflective pieces from each of the faculties on 'research-led teaching'.

3.1 Department of Chemical Engineering: Working towards renewal of the undergraduate programme¹¹

The undergraduate programme in Chemical Engineering at the University of Cape Town has a strong reputation, producing more than a quarter of the chemical engineering graduates in the country as well as a significant proportion of the black graduates in this field. The Department aims to stay at the forefront of good international and national practice in engineering education, and, to this end, has undertaken many educational initiatives over the years. This has been strengthened by the establishment of two academic development posts in the Department, the first sponsored by Caltex in the early 1990s, and the second established in the mid 2000s, initially with funding from Xstrata, later augmented by funds from the then Department of Education. We now have nearly two decades of educational research conducted with our students, and this, together with the close observations of experienced lecturers, has put us in a fairly unique position from which to undertake curriculum renewal. From initial discussions amongst staff in 2007, a small group began intensive work in 2009, working at regular intervals with the entire academic staff body. We are now in the final detailed stages of curriculum planning and will be in a position at the end of 2012 to make a final decision around a complete rollout in 2014. During 2013 a new first year course is being trialled in order to scope out the implications of the new course design for the Chemical Engineering core in the programme.

In this reflective piece we focus on the underlying motivations for the proposed renewal of the curriculum. As noted above, our own in-house programme of educational research has yielded important insights into the limitations of our existing curriculum. Early research focused on students' understanding of key chemical engineering concepts, and we were able to identify factors that mitigated against students' adopting a deep approach to learning (Case & Gunstone, 2003). A related perspective which we have developed in the context of our teaching is that our overloaded curriculum doesn't adequately distinguish between basic fundamental concepts and advanced applications. Students in attempting to grapple with this broad coverage appear to get caught up trying to solve technically advanced problems while lacking the underlying basics.

¹¹ Contributed by Prof J Case

The data from these early studies however also pointed to broader issues that were pertinent, including students' wider world of home, student life and career aspirations (Case & Gunstone, 2006) and we thus began to work with a broader characterisation of student learning which encapsulates but is not limited to cognitive development. Later studies thus focused on students' degrees of engagement with not only the programme but also the career (Case, 2007) and looked at coping strategies drawn from broader student and home life which were productive for facilitating quality learning (Case & Marshall, 2008; Marshall & Case, 2010).

Building on the above, two strands can be identified, which form the underlying motivation for a renewal of our curriculum. The first concerns a view on the kind of student learning experience we would like to offer, and the second concerns a view on the kind of chemical engineering graduates we would like to produce. Based on these motivations the following objectives have been formulated for the curriculum renewal project:

Objective 1: Improving the quality of student learning in the programme

Improving the quality of student learning refers both to increasing the number of students who can successfully graduate in the programme, but also improving on the capacities of these graduates. With regard to the first – quantitative – dimension, the following quantitative objectives are being proposed:

- Maintain the existing target intake of 120 students, as well as the current demographic spread
- Improve overall success rate from 66% to 83% (in order to deliver 100 graduates of an intake of 120)

There is considerable research evidence available on how to facilitate better student learning in undergraduate engineering. Here we draw on the latest work which prioritises active student learning as well as engagement (see, for example, Smith, Sheppard, Johnson, & Johnson, 2005). With regard to the quality of the graduates, we are adopting the view of higher education scholars Barnett and Coate (2005) who argue that in addition to a traditional focus on knowledge and skills (characterised by them as a focus on 'knowing' and 'acting'), we need to enlarge our viewpoint to include a development of students' 'being'. Student 'being' refers to a view on the kinds of 'graduateness' that we are hoping to foster, and for this we also need to turn to our second objective.

Objective 2: Increasing contemporary relevance of the programme

The UCT Chemical Engineering curriculum reflects a typical 20th century offering in the discipline, focused quite strongly towards the large scale chemical and petrochemical industries. In the South African context, many of our graduates do head to these industries, starting with technical experience after which many move into management roles. Some of the class go directly to careers in finance or business or small technological consultancies. With regard to the changing industrial landscape in the light of concerns about environmental and social sustainability, many of our students cite a strong interest in these concerns. The current global recession has also had an impact on the range of positions that are available to our graduates.

The UK-based Institution of Chemical Engineers (IChemE, 2007) recently undertook an extensive consultative process with members all around the world to map out the future directions for the profession. This process delivered a 'road map' which lays out key foci for future work. These are:

- Sustainability and Sustainable Chemical Technology
- Health, Safety, Environment and Public Perception of Risk
- Energy – Securing Reliable and Affordable Supplies
- Food and Drink
- Bioprocess and Biosystems
- Water Engineering

This framework forms a useful basis for thinking through future directions for the discipline, the profession and the work that our future graduates should be equipped to do. The task at hand is to deliver a curriculum that is sensitive to the future yet keeps step with current demands. Drawing together these two objectives, we can note that the new curriculum is directed towards producing chemical engineering graduates who are able to go into careers where they will contribute at a high level towards contemporary challenges. We also aim that a large majority of students who enter the programme will successfully graduate. The new curriculum needs to have the structure, teaching and learning approaches, and resources to deliver on these objectives.

Building a new curriculum structure

An important part of our curriculum renewal process has been to engage with international developments, both in terms of updating ourselves on what are even relatively traditional offerings elsewhere, as well as new developments. We have noted with interest the motivations that have been put forward for curriculum renewal in Chemical Engineering in other parts of the world. In common with our second motivation outlined above, all the work that we have surveyed takes as a departure point the changing requirements of the profession. However, what we note as a key difference is that many first world contexts cite a declining interest in chemical engineering as a reason for revitalising their programmes, to attract good students. The socio-political context of South Africa has a very positive outcome in that many academically strong school leavers cite an interest in being involved in developing the country, and see engineering as a good career to follow in this regard. For students from working and lower middle class backgrounds hoping to get into professional careers, engineering is also an attractive choice, at least in part due to the funding options presented by industrial bursaries. This puts us in a very fortunate position; our challenge is to enhance the learning experience for the good cohort of students that we do attract.

Given the origins of the South African higher education system, which was modelled originally on the Scottish system, we have found the Australian degree structures with similar colonial origins to be most comparable. We have thus closely studied the innovative curriculum reforms in engineering at the University of Sydney (Barton et al., 2006) and the University of Queensland (Crosthwaite, Cameron, Lant, & Litster, 2006). We have also been guided by the programme of curriculum development at Imperial College in the United Kingdom (Perkins, 2002), one of the top-ranked engineering institutions internationally. These are all research-intensive institutions with the kind of international status that UCT aspires to. Key features include a sustained core of project work throughout the years of study, the use of mastery assessment and supplementary examinations (at Imperial College, in particular) and an increase in elective content in the curriculum.

In current international curriculum developments in engineering there is in all cases an increased focus on project work, ranging from this as a strand of the curriculum as proposed here, through to a full problem-based curriculum where most content is taught through independent student engagement with projects. We have carefully considered the pros and cons of these various models (Case, 2011; Hmelo-Silver, Duncan, & Chinn, 2007; Kirschner, Sweller, & Clark, 2006; Perrenet, Bouhuijs, & Smits, 2000) and have come to a position where we are proposing that theory and projects run alongside each other but in distinct strands with their own logic of delivery and assessment, but in a way in which they can reinforce each other. This is in accord with the positions taken at UQ and Imperial College.

The proposed new curriculum has three components:

- Core Chemical Engineering (one whole year course for each of first to third year, and a first semester fourth year course)
- Core Science
 - a. Mathematics
 - b. Chemistry
 - c. Physics
 - d. Statistics
- Electives
 - e. Basic Science elective
 - f. Advanced Chemical Engineering electives
 - g. Humanities electives (including a language elective)
 - h. Free elective

There are two key design features in this new curriculum, both in line with the international developments outlined earlier. The first is the composition of the whole year Chemical Engineering courses in first to third year which carry an unbroken ‘practice’ strand throughout the years. This strand, running alongside theory, will involve project-oriented work, including design activities and practical investigations, and will run from first year through to final year. The second major design feature of the new curriculum is the increased elective component. Our current curriculum has a very small elective component and with the proposed new curriculum this will grow to approximately 25% of the credit allocation. Both of these changes mean that the core content coverage in the curriculum needs to be tightly focused; also taking into account our observations that the existing curriculum is heavily overloaded. Having only four years in which to offer the programme, we note that a significant prioritisation of content is needed.

In the Chemical Engineering year subjects, the course material will run in ‘blocks’ such that students will not have lecture after lecture on different subjects as they currently do but will rather be working on one subject at a time (e.g. reactor design) with a combination of lectures and tutorials during this time – likely much less lecture time than we currently use and much more time spent actively working on problems in tutorial-type mode. During each three or four week block the focus will shift from theory to practice, so that we will need venues that will accommodate the switch from lectures to tutorials and to project work, both in the mornings and the afternoons.

A key commitment in the new curriculum is that we will more accurately take account of how we aim student learning time to be spent. The timetable described above is one key strategy to achieve this end: students will be required to focus their efforts on fewer topics at a given time but to do this in more depth. We have designed the proposed new curriculum such that the credit ratings of the various portions of the curriculum reflect intended student learning time as accurately as possible.

Challenges and opportunities ahead

Curriculum development is an enormously time-consuming process and one not easily factored into existing academic loads. It has been a slow and intense process even to get to the stage of a consensus overall design. In completing the detailed work that is needed in the final stages of this process we have been fortunate to be able to appoint a recently retired colleague who has been crucial to the process all along, Prof Duncan Fraser, to the position of Senior Scholar. One of the key considerations for the academic staff body is the potential implication for teaching workloads. As much as the current proposal, with its increased elective content, involved reduced credits in the Chemical Engineering core, it also involves more project work across the curriculum. We are currently looking at ways to use our postgraduate teaching assistants more sensibly to assist in some of the marking of aspects of undergraduate project work. We are also building a detailed model of teaching assignments, particularly

in the change-over phase where we are teaching senior students in the existing curriculum while rolling out a revised curriculum in the junior phases. We are actively seeking any funding sources that can assist in resourcing the project.

Many elements of the new curriculum build on innovations that we have already trialled within the existing curriculum in individual courses. These include mastery testing, which we have already used in both first and final year contexts, 'block' teaching and systematic re-assessment, which are both well-established in our final year, interactive teaching, which we have used across many courses, lecture-casting, used currently in first and second year, and so on.

There are other developments on campus that are potentially well aligned with this proposed new curriculum. We are hoping to be able to use new purpose-designed teaching facilities in the new EBE building for the teaching in the new curriculum which aims to move easily between short plenary lectures, active mastery of fundamentals, and group-based project work. This model will also be substantially assisted by the Flexible Learning project which aims for all undergraduate students to have a laptop or similar device for use in class sessions.

To promote progression through the curriculum we have designed full-year courses with regular feedback and assessment. To accommodate a diversity of academic backgrounds in the class, we aim to use portions of the winter and summer terms for intensive extra tutoring and re-assessment. We are currently trialling such a model in our existing third year. We are also in favour of current proposals which look to extend the provision of 'teaching days' in the academic year, not to increase teaching but to increase time for student mastery and learning.

Ultimately it is hoped that a renewed undergraduate offering in Chemical Engineering at UCT will offer not only better graduate outcomes in that programme context, but a model for potential adaptation and implementation elsewhere, of education research-led curriculum development in engineering education.

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3.2 Research-led curriculum change in the learning of academic literacies in a Science Foundation course¹²

We present a brief reflection on the role that academic literacies research is playing in the development of the foundation course in biological, earth and environmental sciences (AGE1003H), which is a component of the General Entry for Programmes in Science. This research takes place in the context of a close collaboration by the language development, numeracy and science lecturers in developing a component of the course curriculum; a project which culminates in the students' writing of a scientific report. The prior discourses and practices that our students bring, coupled with the literacy and numeracy demands of the natural sciences at tertiary level, make explicit attention to academic literacies quite crucial and a report-writing task is an appropriate vehicle for their development.

The first year that the project was part of the course was 2010. In this first iteration, the reports gave the impression that students were not integrating the different literacies and skills that they had been taught. Upon reflection we recognised that a possible explanation for this was that we had failed to integrate our teaching sufficiently. Therefore in 2011 we worked very collaboratively on the design, teaching and assessment of the task and at the same time, developed a collaborative action research project aimed at further development of the pedagogy and curriculum for this course. In one aspect of this research, we have used an ethnographic approach – analysing early drafts of student writing and then interviewing students about their writing – to gain insights into the practices and assumptions they drew on as they learned to write about quantitative information in science.

By way of illustration we use two examples from our research, firstly describing the ways in which students understand a particular quantitative concept and secondly, highlighting some of the prior schooling practices that seem to be impacting on the way students write in the natural sciences.

In the writing of a scientific report many of these students apply quantitative terms and phrases inaccurately, often in a manner that although grammatically correct, was conceptually incorrect. One example is the use of the phrase “*is proportional to*”. In the interviews we asked students “What does it mean when you say one thing is proportional to another?” All but one of the students interviewed believed “*is proportional to*” defines any relationship where an increase in one variable is associated with an increase in the other (instead of only one where there is a constant ratio between the variables). When asked where they first encountered the use of a phrase like “*A is proportional to B*” they responded that their first encounter with the concept was in physics lessons at school. In school physics it is common to

¹² Contributed by A/Prof Moragh Paxton, Ms Vera Frith, Ms Riashna Sithaldeen & Mr Jumani Clark

use the symbol ' α ' to represent '*is proportional to*' in a formula such as " $V \propto t$ ". Teachers often point out that if V is proportional to t , then as t increases so will V . Although this statement is true, it seems that in many cases teachers have not pointed out that the converse is not. It is easy to see how a student who always hears the phrase '*is proportional to*' in the context of noticing how one variable is associated with an increase in the other variable, will conclude that this is what the expression means.

In reading students' written reports we might have been tempted to discount the incorrect statements about proportional relationships as 'poor English' but through questioning students about their writing we gained rich insights into an unexpected realm of their experience. From the point of view of what they apparently learned in physics classes, their use of the phrase '*is proportional to*' was a correct description of the relationship they were describing, so simply correcting the language would have been merely confusing to them. For us, the realisation that students' incorrect use of this phrase is not a superficial slip, but rather an expression of an entrenched conceptual misunderstanding, has been very useful. It helps us to appreciate that if we want to teach students to use quantitative words and phrases appropriately in context, we must first make sure they properly understand the concepts to which the words refer before attempting to teach the conventional ways of expressing those concepts. It is through talking to students about how their understanding of concepts informs their choices of expression that we can find out which concepts we should give attention to. The insights gained in this way will (and already have) changed the nature and emphasis of our teaching in this course.

The other area where our research produced insights about students' prior experience was in determining how students were struggling with learning to think, act and value themselves as scientists. When we first introduced the project we had anticipated that we were asking students to do something new, however after assessing the reports and interviewing students we learned that schools had in fact recently started teaching academic literacy practices such as report writing and 'referencing'. Unfortunately these teachings often conflicted quite markedly with university academic literacy practices.

Students in focus group interviews spoke about their experience of writing school assignments for life sciences and geography as being very "*free*". Generally, it seemed that writing a scientific report at school involved cutting and pasting information from the Worldwide Web. Opinions unsupported by evidence were also acceptable. However, in the tertiary context the research report in the natural sciences has a fairly rigid genre and discourse. One student referred to this by saying that it was a new experience for them that their university lecturers expected them to "*write only facts*" and to use supporting evidence. Students also explained that they found university referencing practices strange. At school, they had been taught that referencing meant simply pasting URL's into a bibliography at the end of their research projects. Neither had they been taught to make a distinction between their own unsupported opinions and the outside sources they may have drawn on in their writing.

We have found that it has been crucial to understand the way students are constructing understanding and to get to know the practices and discourses that they bring with them so that we can address these prior learning issues in our teaching. Based on the research findings which show that students are confused about some of the quantitative concepts, we have incorporated fuller explanations of these concepts early in the chronology of the project and pointed students to the reasons for their confusion. In addition, the research has highlighted differences between school and university literacy practices that we were previously not aware of. As a result we attempt to make these differences and the expectations at university more explicit. For example we have introduced a lecture on the research cycle which focusses on the role of evidence in making an argument and the kinds of evidence that are acceptable in a scientific setting. We have also designed and conducted a workshop which addresses the differences between the kinds of statements (and the associated language) used to present quantitative information in the different parts of a formal research report.

The collaborative research project has been very useful in informing the ongoing development of the curriculum, but has also contributed to our own academic development. The science discipline and numeracy specialists have learned a new approach to research and developed a greater understanding of academic literacies research, while the language development specialist has gained insight into the role played by numeracy in a broader conception of academic literacy. Through participating in the research programme the science lecturer has realised that she needs to make the implicit literacy practices of the discipline more explicit in her own teaching throughout the entire course. For example she has become aware of the need to use specific quantitative terms and phrases in her teaching and explain their meaning in the context of the discipline and also to discuss the choice of appropriate graphical representations used in the scientific texts.

These brief reflections do not give a full account of the way our research has impacted on our teaching and curriculum development, but significant changes have been incorporated into the curriculum for 2012 based on the findings of the first action research cycle. Instead of assuming that a student is cognitively unable or too underprepared to grasp concepts, we recognise that it is vital for us to understand and build on what students know and to uncover prior practices and conceptions that may form barriers to further learning. The findings from this kind of research have helped us to more appropriately address students' needs and approach our goal of giving students' epistemological access.

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3.3 Reflections on research-enriched teaching and learning in the Faculty of Health Sciences¹³

One of the priority challenges of educating health professionals in the 21st century is the need to garner evidence to support the teaching and training we provide. Health sciences education has seen the introduction of many education innovations but robust evidence supporting the use of all these strategies is not available. In the Faculty of Health Sciences at the University of Cape Town, we have embarked on a number of projects aimed at providing insight into the success of education innovations as well as a rational basis for designing and implementing education strategies that have an impact on outcome. This paper will reflect on two examples of research-enriched teaching in the Faculty of Health Sciences at

¹³ Contributed by Prof V Burch

UCT. One example focuses on research done to inform the teaching and assessment of procedural skills (practical skills such as putting up a drip) and the other example focuses on ongoing research to gain insight into potential explanations for the success of the Intervention Programme (a foundation programme) nested within the MBChB programme. While both examples are derived from the MBChB programme they speak to issues that are relevant to the education of all health professionals trained at UCT. In both instances the success in the MBChB programme has acted as a catalyst for the implementation of similar strategies in the training of other health professionals in the health and rehabilitation sciences. Since this is a piece of reflective writing, the text has not been extensively referenced. A few references are provided as footnotes.

The most important outcome of the education of health professionals is graduation of competent clinicians. In health sciences education competence can be considered in two specific domains – clinical competence and technical competence. Clinical competence is best understood as the knowledge, skills and attributes needed to deliver safe, appropriate, cost effective health care. Technical competence must be considered separately because procedural skills expertise requires specific “hands on” practical training in a simulated environment before performing these procedures in real life clinical practice. The critical importance of technical expertise, and the lack thereof amongst new medical graduates, has been highlighted in the international literature for over a decade. In response to this hiatus in medical training a number of countries have published guidelines stipulating the procedural skills expertise expected of new graduates entering clinical practice, for example, the United Kingdom, Australia, the United States of America, the Netherlands and others. While these skills have been clearly articulated, the large-scale training and certification of such expertise remains a significant challenge. Medical student classes typically range from 150-300 students and the infrastructure (equipment and space), human resources and time required to train such large cohorts of students makes this aspect of clinical training very expensive and resource-intensive.

South African medical graduates are internationally known for their clinical expertise, and it is widely believed that our graduates have excellent clinical and technical skills upon graduation. A study conducted at the University of Cape Town in 2004, however, showed that procedural skills expertise was a significant limitation of South African medical graduates at the start of internship.¹⁴ This finding prompted a Delphi study using a panel of senior clinicians representing all the medical schools in South Africa. A total of 152 clinical and procedural skills suitable for undergraduate training were identified; 62 items for independent practice and a further 90 skills that graduates were expected to perform with assistance when commencing internship. Importantly, the study also identified procedures that new graduates should not be expected to perform at the start of internship.¹⁵ The South African list of procedures is considerably longer than the lists generated by regulatory authorities elsewhere. The key reason for this difference is the shortage of health care professionals in South Africa and the need for local graduates to provide clinical care that is considerably more complex than what is expected of international graduates abroad.

Having generated a nationally agreed upon list of procedures the current challenge in South Africa is to provide adequate training and appropriate assessment of these prerequisite skills. A good number of these skills have formed part of clinical training for many years and are monitored by departmental logbook systems and assessed in discipline-specific courses. The more recent challenge has been to expand the training programme to include more skills and develop an assessment method that demands competence

¹⁴ Burch VC, Nash RC, Zabow T, Gibbs T, Aubin L, Jacobs B, Hift RJ. A structured assessment of newly qualified graduates. *Medical Education* 2005; 39: 723-731.

¹⁵ Burch VC, Draper G. Procedural skills competence expected of South African medical graduates entering internship. *Medical Teacher*. In review.

for each skill tested (i.e. students have to demonstrate competence for all skills tested in order to pass the assessment). To achieve this goal, the Faculty of Health Sciences at UCT has invested considerable energy and resources in establishing a Clinical Skills Unit. The unit, established some 10 years ago and recently expanded, provides simulation facilities for “hands on” training of more than 800 medical students each year. While individual course-based assessment of practical skills is still a feature of the programme, the need for a single, multidisciplinary, high-stakes exit assessment process was recognized and initiated in 2011. We launched a multidisciplinary, 10-station objective structured clinical examination (OSCE), which takes place at the end of final year. This is a high-stakes assessment process because candidates must demonstrate competence (correct technique, successful completion of task and adequate personal and patient safety precautions) at all stations in order to graduate from the MBChB programme. Candidates who perform poorly at a station attend remedial teaching and are re-examined until their performance is satisfactory. Analysis of the 2011 examination results, and detailed review of student performance at each station, identified significant gaps in competence, particularly regarding issues of safety – disposal of sharp equipment and safe handling of equipment.¹⁶ This year training has been tailored to address specific needs identified in the last examination. This project, based on the documented clinical practice demands of health care in South Africa, is a good example of locally relevant, research-enriched education.

In tandem with the development of a Clinical Skills Programme for MBChB students, the other health professions training programmes in the Faculty, such as Physiotherapy, Occupational therapy, Speech and Language Pathology, have also established profession-specific clinical and procedural skills training in a purpose-built Skills Laboratory. Since the respective health care professions have such widely differing scopes of practice, it has been essential to provide dedicated training space to house simulation equipment for the respective needs of all.

The second example of research-enriched teaching and learning is the Faculty of Health Sciences focuses on the Intervention Programmes offered in the MBChB and other health and rehabilitation sciences programmes. In the early 1990’s, when students from educationally disadvantaged backgrounds gained access to the MBChB programme, the need for additional academic support was realized and efficiently addressed by implementing an Academic Development Programme (ADP). This foundation programme, offered from 1992 until 2001, provided pre-selected students, on the basis of poor-quality schooling, with an opportunity to complete the first two years of study in three years with additional educational support.¹⁷ In 2002, when the revised MBChB programme was launched, the foundation programme was radically altered. All students, regardless of mode of entry (regular or alternative admissions for disadvantaged students), now enter the first semester of the new programme. Midyear examinations held in June, identify academically weak students who are diverted into a 12-month Intervention Programme (IP) that offers additional educational support and academic input in preparation for re-entry into the second semester of the mainstream programme. This strategy does not preselect students on the basis of prior educational experience but provides everyone with an opportunity to demonstrate their academic ability before offering remediation. This strategy has abolished the stigma of being labeled “disadvantaged”, a major limitation of the ADP.

The academic success of the IP, launched in 2002, is impressive; completion and mainstream re-entry rates exceed 80%, which is equivalent to the original ADP. A key strategy of the programme is the use of activities that are believed to facilitate the development of “generic learning skills” deemed important in

¹⁶ Burch VC, Holmes L, Kropman A. Procedural skills training and the errors students make. Manuscript in preparation.

¹⁷ Sikakana CNT. Supporting student-doctors from under-resourced educational backgrounds: an academic development programme. *Medical Education* 2010; 44: 917–925.

achieving academic success.^{18,19} These skills include areas such as numeracy, communication, information and computer technology, and also those skills required to improve one's own learning and performance; for example problem solving, working with others and critical thinking. While extensive and repeated use of these generic learning skills has been posited as a potential reason for the success of the programme, data supporting this supposition have not been documented.

Work exploring generic learning skills development in the IP is part of ongoing research collaboration between the University of Leeds (UK) and the Health Sciences Faculty at UCT. Recent work has shown that, overall, students entering medical school in South Africa have a similar experience of the use of generic learning skills as compared to students entering medical school in the UK.²⁰ Work focusing on students entering the IP has, however, shown that these students have significantly less experience of and confidence in, the use of generic learning skills upon admission to medical school.²¹ Our work has furthermore shown that after students have completed the IP their experience of, and confidence in, the use of generic learning skills are on par with those of mainstream students. It is clear that the teaching and learning strategies used in the IP provide students with many opportunities to use, and gain confidence in the use of, generic learning skills. Ongoing work is needed to determine: (1) which teaching and learning strategies provide the best opportunities to use and improve generic learning skills, and (2) whether greater use of these teaching strategies in the first semester of the mainstream MBChB programme could reduce the number of students entering the IP. The latter is a particularly important question, because the programme is expensive and resource-intensive and, hence, has a ceiling capacity of no more than 40 students. If we are to further widen access to the MBChB programme, by focusing on the recruitment of rural students, foundation programme needs may exceed our IP capacity. Targeted intervention in the first semester may have a beneficial impact if we know what strategies best promote the development of generic learning skills in vulnerable students.

Based on the success of the IP in the MBChB programme, a customised Intervention Programme has also been initiated in the other health and rehabilitation sciences programmes offered at UCT. The impact of this programme is still being determined.

The Faculty of Health Sciences at the University of Cape Town is actively “growing its own education expertise”²² and evidence supporting and guiding educational practices in the Faculty are emerging at a steady pace. This reflective essay has highlighted only two examples of research strategies used to inform curriculum design and assessment, and enhance our understanding of the ways in which teaching and learning strategies may contribute to academic success. These specific examples were chosen because they focus on two key issues relevant to the training of South African health professionals: (1) the alignment of high-level technical competence with clinical practice demands in a country with limited public health care resources, and (2) appropriate academic and developmental support for student

¹⁸ Frenk J, Chen L, Bhutta ZA, Cohen J, Crisp N, Evans T, Fineberg H, Garcia P, Ke Y, Kelley P, Kistnasamy B, Meleis A, Naylor D, Pablos-Mendez A, Reddy S, Scrimshaw S, Sepulveda J, Serwadda D, Zurayak H. Health professionals for a new century: transforming education to strengthen health systems in an interdependent world. *Lancet* 2010; 376:1923-58

¹⁹ Murdoch-Eaton D, Whittle S. Generic skills in medical education: developing the tools for successful lifelong learning. *Medical Education* 2012; 46: 120-8.

²⁰ Murdoch-Eaton D, Manning D, Kwizera E, Burch V, Pell G, Wittle S. Profiling undergraduates' generic learning skills on entry to medical school: an international study. *Medical Teacher*. 2012. In press.

²¹ Burch VC, Sikakana CNT, Gunston G, Shamley D, Murdoch-Eaton D. Generic learning skills in academically-at-risk medical students: a development programme bridges the gap. Manuscript in preparation.

²² Clinician Educators Course launched 3 years ago and a Postgraduate Diploma in Health Professional Education launched in 2012.

admissions that address equity and redress, major drivers of the education agenda at the University of Cape Town.

3.4 Research-led Teaching in the Department of Historical Studies²³

Undergraduate teaching in the Department of Historical Studies is designed to lay the empirical and theoretical foundations for postgraduate research. In order to both inspire our students with the possibilities for historical enquiry and equip them with the required skills, the Department has over the past decade migrated research-led teaching from its traditional home in the postgraduate curriculum into the core undergraduate curriculum.

The process was begun in 2000 with the introduction of a capping research project in the History major third year core course and this model was extended to the new Economic History major introduced in 2007. All staff offer a project based in their own research field utilising novel primary sources and designed to provide a platform for the Honours dissertation for students intending to proceed to postgraduate research. The number of students per project is capped to create a small group teaching environment enabling one-to-one supervision between the project convenor and students and the research process is timetabled with key deliverables spread over the course of the year to assist the novice researchers in meeting the final submission deadline. In this way the third year project models the full research process from proposal through analysis to write-up and presentation.

Students are required to make two public presentations (of their proposal and their findings) to the whole department over the course of the year prior to submission of their final research essay. The best student essays chosen in consultation with the external examiner are published each year in a departmental publication called *Historical Approaches* now in its tenth edition. Inclusion in *Historical Approaches* is much aspired to by the majoring students. It is distributed to research libraries in South Africa and overseas and some of the essays published there have been cited in the scholarly literature. The high quality of the research output reflects the fact that students are enthused by the opportunity to work with primary sources under the personal mentorship of staff experts doing original research and this experience was also key to Honours recruitment. It is also highly valued by employers and many History alumni speak of the ways they have used their research skills and experience in a variety of careers outside the university.

More recently the transformation of the research environment by the digital turn has given added impetus to the elaboration of research-led teaching in the Department's undergraduate curriculum. The web has dramatically broadened the scope of historical research beyond the traditional narrow confines of regional or national history in particular through the digitisation of archives and enabling of transnational collaborations which require very different skill sets from historians to those of the paper age. The teaching environment has also been transformed by the web with the Vula platform making it possible to significantly increase staff-student contact time by utilising its suite of facilities to create a blended undergraduate teaching environment. The Department's new second year core course for the History major, *Breaking the Boundaries* (HST2038F), piloted in the first semester of 2012, sought to address the new demands and utilise the new opportunities of the digital turn to roll out research-led teaching to second year.

The second year core course was designed by a dedicated team each of whom taught four weeks on their research field within an organising framework provided by Cape Town as a transnational city. At the heart of each block was a particular primary source (household estate inventories showing slaves owned,

²³ Contributed by A/Prof L Van Sittert & Prof N Worden

military deserter wanted advertisements, oral interview transcripts by Cape jazz musicians and those caught up in forced removals) which was contextualised in a few introductory lectures and then utilised by the students in a series of workshops and research tasks, culminating in a summative essay. The workshop tasks were designed to enable students to utilise online materials and work collaboratively with support provided by the tutoring staff through the course Vula portal. Students were again enthused by the opportunity to work with primary sources in a structured and scaffolded teaching environment and will come to the third year research project with a basic understanding of the research process.

All of the departmental research areas showcased in the undergraduate core courses are currently offered as stand-alone semester courses in the Honours year when students are encouraged to further specialise in a particular area as part of their own-initiated research for the Honours dissertation.

3.5 Introducing a New LLB Course on Public Interest Lawyering: Reflections from a Teaching Perspective²⁴

In 2011, the Constitutional Literacy and Service Initiative (CLASI) launched at UCT with the aim of creating more opportunities for law students to academically engage with real-world applications of their learning, and to help bridge the dire access-to-justice gap that endures for many communities in South Africa. CLASI's flagship project continues to be to train LLB and LLM students from various law faculties to serve as Teaching Fellows in high schools around Cape Town, but since its launch, CLASI's scope has expanded to cover high schools in Stellenbosch, soon East London and Johannesburg, as well as to conduct trainings and workshops for community leaders and Life Orientation teachers and Department of Education officials, and to serve on the Steering Committee of the National Schools Moot Court Competition. As always, opportunities always exist for UCT students to become involved in these initiatives.

Under the auspices of CLASI, I also wanted to provide a different kind of opportunity for LLB students who were interested in more intensively engaging with the interface between social justice theory, critical legal studies, and practical work experience, or praxis, with partner legal non-profit organisations. Given that there is not yet a specialised public interest / human rights law clinic at UCT Law which allows students to "practice" law outside a litigation paradigm, I thus designed a course entitled Public Interest Lawyering²⁵ with the objective of exposing final year LLB students to multiple dimensions of public interest lawyering, as well as the various roles lawyers are called upon to play in a public interest law setting. What I hoped is that by the end of the course, students would understand how to appreciate and begin to use a variety of lawyering techniques beyond litigation to effectively address a real constitutional problem; gain a deeper awareness of the societal context within which constitutional law and international human rights law operate, as well as many of the important access to justice issues confronting the legal profession; develop practical and professional skills such as critical thinking, reasoning, and analysis, communication, observation and reflection, problem solving, and addressing morally and ethically complex situations.

This type of education is not new to South Africa. Indeed, clinical legal education, defined by some as "lawyer-client work by law students under law school supervision for credit towards the law degree"²⁶

²⁴ Contributed by Ms M Jain

²⁵ The course was entitled Human Rights Lawyering in 2012, but the title has been changed in the course catalogue for 2013.

²⁶ The Council on Legal Education for Professional Responsibility, established in 1968 in the United States. See David McQuoid-Mason, "Clinical Legal Education: Its future in South Africa" (1977) 40 *Journal of Contemporary Roman-Dutch Law (THRHR)* 343 at 346.

first developed in South Africa in the early 1970s, with the first student clinic established at UCT Law, and by the 1980s, had developed within clinical programmes at 16 of 21 law faculties around the country.²⁷ The early clinics operated mainly as legal advice centres open to university students and staff, with some service provision to communities, which referred most litigation matters to the state-funded legal aid system.²⁸ In the 1980s, clinics dispensed legal advice and assistance to the poor, through rights-based education programmes, and some dealt with civil rights cases.²⁹ By the early 1990s, law clinics became formally recognised within the Attorneys Act, which facilitated partnerships between clinics and the Legal Aid Board in which clinics became the primary providers of legal services for the poor, as well as a placement for candidate attorneys to serve their articles.³⁰ By 2003, 20 university-based law clinics were accredited by the Law Society, provided in-house legal representation to clients, employed and trained candidate attorneys and offered skills-training courses to students.³¹ Thus, because of the unique historical circumstances in South Africa, clinical legal education developed here within an access to justice paradigm that prioritised the delivery of legal services to the poor, leading to a branding of clinics as “ersatz legal-aid clinics” that do little reflective teaching.³² As a result, clinics, in a sense, were severed from the academic curriculum and seen merely as “practical training.”³³

More recently, many have called for the re-imagining of clinical legal education as a methodology that can be expanded upon and integrated more holistically into the LLB and post-graduate law curriculum.³⁴ In this expanded vision of clinical legal methodology, theoretical, practical training, and values training are intrinsic to how law students are taught throughout their academic career.³⁵ Important to this vision is what Professor Geo Quinot identifies as a framework of “transformative legal education,” reflecting the new constitutional dispensation, which requires a shift from the formalistic parameters of legal education and the legal profession to a more substantive one, which considers moral and political values and the

²⁷ David McQuoid-Mason, “The organisation, administration and funding of legal aid clinics in South Africa,” (1986) 1 *Natal University Law Review* 189.

²⁸ Willem de Klerk, “University Law Clinics in South Africa,” *South African Law Journal* 929 at 930.

²⁹ David McQuoid-Mason, “Access to justice and the role of law schools in developing countries: The South African experience,” (unpublished paper delivered at the First All-African Clinical Legal Education Colloquium held in Durban in June 2003) 12-13, 19.

³⁰ de Klerk at 931.

³¹ *Id.* at 931-32.

³² Stuart Woolman, Pam Watson and Nicholas Smith, “‘Toto, I’ve a feeling we’re not in Kansas anymore’: A reply to Professor Motala and others on the transformation of legal education in South Africa” (1997) 114 *SALJ* 30,35 and 53-4.

³³ de Klerk at 941.

³⁴ *Id.* at 947-48; see also Joan Church, “Reflections on legal education,” (1988) 51 *THRHR* 53; Jasodha (Roshnie) H Maharaj, “The role of the law schools in practical legal training” (1994) 111 *SALJ* 328 at 334; Ziyad Motala, “Legal education in South Africa: Moving beyond the couch-potato model towards a lawyering skills approach: A case for comprehensive course on legal research, analysis and writing” (1996) 113 *SALJ* 695, Woolman et al. at 32.

³⁵ Maharaj, at 332, 341-42. Indeed, proposals have been made for linking specialized clinics to substantive areas of law (see Woolman et al.), introducing practical training early in the law degree concurrently with academic subjects (Church), creating at least one “clinical law school” where practical training is fully integrated with academic training (Maharaj), creating an exclusive advice and referral staffed by junior law students, and separate, specialized clinics staffed by more senior students, who would receive clients from the referral clinic (de Klerk), and inserting a placement scheme at some point during the law degree to allow students to spend time at an external institution (see Richard Grimes, “Law schools and pro bono work: The public service and educational potential” (2003) 37 *Law Teacher* 189 at 191).

social context in which law operates³⁶. This model of legal education requires a shift both in terms of what law faculties teach, as well as the methodology by which they teach, in order to encourage students to think about becoming “innovators under the Constitution.”³⁷ What clinical legal education offers as a teaching methodology is an integration of substantive knowledge, practical skills and values “into a single educational exercise.”³⁸ After all, “[w]hat distinguishes clinical education from any other method of practical skills training is a methodology that uses actual experiences of the legal process as the educational core.”³⁹

Moving away from a sole focus on the access to justice dimension served by university-based law clinics, there are at least two ways in which clinical legal methodology can be expanded in the South African context. First, clinical methodology and other skills-based training can be integrated more fully into LLB curricula as a dynamic teaching pedagogy. For example, theory-based courses such as Civil Procedure, Delict, and Contracts can be infused with critical thinking, practical application and skills exercises to bridge the gap between theory and practice. More use can be made of oral examinations, written assignments, student presentations, and moots. In this manner, clinical methodology, or at least practical skills training, could infuse the LLB curriculum from the start, as opposed to serving only as a final year stand-alone course. Second, new and specialized clinics can be established which correspond to and are linked to substantive areas, such as Labour Law or Human Rights. A university law clinic could potentially engage in a variety of legal services, ranging from legal aid, back-up legal services to paralegal advice offices, constitutional and impact litigation, developmental assistance, advocacy, lobbying and reform, and community legal education. Nothing dictates that a law clinic must serve only individual clients; in fact, South Africa’s own history with access to justice dictates a broader conception of the lawyering process is critical.

It is against this backdrop that CLASI launched its new course with an eye towards developing a future human rights/public interest law clinic at UCT Law. Topics and readings considered in the course included theories of social change, as well as critiques from the critical legal studies field, the role of community education in public interest lawyering, using a client-centered approach to craft culturally competent narrative and case theory, media and law reform advocacy beyond litigation, law and social mobilisation, designing strategic litigation, ethical problems in public interest law, legal education reform, and sustaining careers in public interest law. Using clinical legal methodology, final year students routinely reflected on and discussed the readings and their “fieldwork” during seminars, and made presentations to and received feedback from their peers using an interactive class format.

From a list of possible non-governmental organisation partners, students selected an NGO partner engaged in a current constitutional campaign, and initially drafted memoranda of understanding with their partners regarding their proposed partnership. Students then were expected to work collaboratively with the NGO partner to advance their campaigns through strategic interventions. We partnered with three NGOs: the Women’s Legal Centre, the Human Rights Media Centre, the Southern Suburbs Legal Advice Centre, and a research unit, UCT Law’s own Law, Race and Gender Research Unit. The campaigns included: (1) investigating legal options to address the collapse of the criminal justice system in Khayelitsha; (2) performing a legal analysis of the rights and options available to refugee and migrant widows living in Cape Town; (3) exploring viable legal arguments for communities in the Southern

³⁶ Geo Quinot, Inaugural Lecture, Stellenbosch University, September 2011 at 5.

³⁷ *Id.* at 7.

³⁸ de Klerk at 937.

³⁹ Elsabe Steebhuisen, “The goals of clinical legal education” in P Stilwell (ed) in *Clinical Law in South Africa* (2004) 1 at 2.

Suburbs who wished to oppose commercial development on the Princess Vlei wetlands; and (4) crafting an advocacy strategy to engage young people in the campaign to stop the Traditional Courts Bill.

Students were expected to deliver three outputs for their NGO partners; these outputs were also used for purposes of assessment, and included: (1) creating and delivering a community education workshop, (2) engaging in fact-finding/documentation with affected individuals/communities, and (3) drafting a final written paper based on partner needs, whether in the form of a law reform proposal, a litigation strategy, or an advocacy strategy, in the tradition of “engaged scholarship.” Students were also assessed on classroom preparation, participation, and presentations, preparing three short reflection journals, and their “professionalism” with their NGO partner.

Throughout the semester, students critically engaged in the content of the issues, as well as the impact of their legal practice on their own personal development.

“Attending community meetings and interacting with the NGO was a highlight. Providing information about the law to people who needed it was rewarding and gave me purpose.”

“Even if it is technical and legally complex, it is important at the very least to hear our clients’ wishes and ideas about how they wish to be represented in court.”

“[The community education workshop] was extremely rewarding to know that I may be in a position to help the community and I valued hearing their personal views and accounts of what should happen. The experience echoed the texts in that it showed me that regardless of how much theory you memorise as a law student, there is nothing more valuable than practical experience by working with real people with real problems.”

Students also reflected on their engagement with course readings, and the interplay between the theory and what they observed in their own practice.

“I learned that law in practice hardly ever comes packaged in neat boxes labelled ‘public’ or ‘private’; that the constitutional imperatives and overarching human rights norms makes law much more mutable than I ever thought; and that one way to appreciate and learn this is through critical legal studies.”

In terms of lessons learned about public interest lawyering, one student explained that she was able to better appreciate that “issues move very quickly and suddenly,” the work is far more procedural before substantive, and one cannot enter an issue “with pre-conceived ideas about the interest group” affected.

Another student particularly enjoyed the readings in the course, and felt they “systematically worked through the major ideas and workings of the NGO sector.” The student found the readings around “client-centered lawyering” effective as they “triggered a huge paradigm shift in my mind about the way lawyering can be conducted.” The course material and assignments “are engaging, fresh, and inspiring; more importantly I think it serves a well-needed antidote to the conservative and positivist style pedagogy that mostly dominates law school.”

Students also provided constructive critiques of aspects of the course that have been addressed and incorporated into the course design for 2013. I intend to schedule meetings with NGOs during the final months of 2012 in preparation for 2013, including some with whom we partnered this year as well as other new organisations.

In conclusion, the first offering of the course in 2012 was a success. I learned deeply and equally from the experiences and missteps involved in the teaching and integrated service learning processes, as well as from the students' intellectual curiosity and honesty in class and in supervision meetings. The course began as an experiment to innovate within the existing LLB curriculum and to test the waters for a future human rights/public interest law clinic. With the benefit of hindsight to reflect upon our experiences, I more deeply believe that it is possible and necessary within the LLB, as Duncan Kennedy notes, to "emphasise the way to learn law rather than rules, and skills rather than answers."⁴⁰ I hope to continue to attract those students seeking alternate, or supplemental, clinical opportunities in which they can engage more closely with legal theory that specifically pertains to the lawyering process, and in which they can work with organisations, not only individuals, with public interest law, not only private law, and with a range of lawyering techniques, not only litigation.

3.6 Commerce Faculty⁴¹ : utilising student-experience research to transform practices in Academic Development

The following is reproduced from the Introduction to the imminent publication - *Surfacing Possibilities - Experiences of working with first-generation university students*, authored and edited by lecturers in the Commerce Education Development Unit. The publication focuses on informed ways of potentially engaging first-generation tertiary students, with the aim of enhancing student success and graduate attributes. The book draws on student narratives and a long history of innovative practices that are transforming the learning community, ultimately promoting the agency of students within the EDU. It is hoped that the publication will bring new perspectives about working in different ways regarding structures, pedagogy, language and the development of a learning community.

'First-generation students' originate from home contexts in which no family member has previously attended a higher-education institution. These students have been part of a successful programme at the University of Cape Town (UCT) – the Academic Development Programme (ADP) – that has managed, in recent years, to achieve a fairly dramatic increase in graduation throughput. The ADP has accomplished this by adopting a more flexible approach – adding value to the curriculum and student experience – while attempting to harness students' agency and foster in them a sense of belonging to a learning community.

While our story is based in South Africa, we feel that the issues with which it deals, and our responses to them, have global resonance. Throughout the world, an increasing number of first-generation and under-represented student groups are being accepted into higher education, widening participation, increasing student diversity and creating a range of challenges for both students and institutions (Crosling et al. 2009).

Recent student-experience research pertaining to the international context has shown that experiences of alienation are fairly common for all students, but particularly so for many first-generation students as they enter the middle-class environment of higher education (see Christie et al. (2008), Herrington and Curtis (2000), Mann (2008), Reay (2001), and Reid, Archer and Leathwood (2003), for example). However, various issues specific to the South African context have meant that black⁴² working-class and rural

⁴⁰ Duncan Kennedy, "Legal Education as a Training for Hierarchy," 32 *J. Leg. Ed.* 591 (1982).

⁴¹ Contributed by A/Prof J Pym

⁴² South Africa's Population Registration Act (Act 30 of 1950) made it mandatory for people in South Africa to be classified into a variety of population groups, for example 'white', 'black', 'Indian' and 'coloured'. This Act was repealed in 1991 and no similar classificatory legislation currently applies. However, for equity purposes the University of Cape Town's application form asks South African citizens and permanent residents applying to study to declare their population group: black, coloured, Indian, white

learners in South Africa are placed in situations of extreme risk and vulnerability (see Bloch (2009), Bray et al. (2010) and Ramphela (2002)). Such issues include the dislocation of conventional family structures, the breakdown of the culture of learning and teaching in schools, and violence and conflict in the society, all of which are legacies of South Africa's pre-1994 apartheid system of government. Ironically, these learners are simultaneously being offered unprecedented opportunities and possibilities of rapid upward mobility. For many students, higher education is seen as an escape, a route out of impoverished home circumstances. Nevertheless, their entry into the new environment of higher education – where very little is familiar and which is physically far from home – often produces intense loneliness and a loss of voice, self-esteem and purpose. Coupled with this, the academic challenges of the new environment produce a self-perpetuating cycle in which students' have a deepening sense of lack of worth and capability, feel increasingly disempowered and ill prepared, and experience declining academic grades. It is clear from our experiences that academic and psychological issues are intertwined.

Our context

The ADP in which our students (who are often referred to as 'AD students') participate is housed in the EDU, based in the Commerce Faculty at UCT. The rest of the students in this faculty are often referred to as 'mainstream students'. There are approximately 900 students in total at any one time in the ADP in the Commerce Faculty; each year an average of 250 first year students are accepted into the ADP. The ADP students make up approximately 31 per cent of the Commerce Faculty's equity students (students who would have been disenfranchised in the pre-1994 state).

The majority of our students continue to come from working-class, rural and/or township backgrounds, do not use English as their home language, and are the first generation in their families to attend university. Many of the students' family circumstances are desperate and impoverished. This is evidenced by the number of students who qualify for financial aid, report experiencing acute overcrowding at home, and are dependent upon a grandmother's pension; overall, they are used to coping with very few material resources and benefits. Many either do not know their fathers or have very limited contact with them. The following quotation from a student presents a typical example:

I was raised by my strong and powerful mother. I have experienced a lot of violence in my youth leaving me to grow up quickly and see the world with sceptical eyes or view. I have gone through life not having a father figure this causing me to resent men or families with fathers and I also became cold and resilient – focused on my books and passing better than most people.

Our students have often had to take adult decisions at an early age and have had numerous life situations in which they have evidenced considerable agency. They have had to develop a range of coping mechanisms to negotiate trying personal, family and school circumstances. Many have had to study independently to achieve their results, as the following quotation from one of them exemplifies: 'I lost both my parents at a young age, I had to live with a family relative who did not treat me very well and that motivated me to put more effort to my schoolwork.' Many South African households are dependent upon one breadwinner (if any), and there are usually few adults around to organise study or oversee homework for learners. In addition, learners' levels of literacy often surpass those of their caregivers. As a consequence of splintered family life, academic success has sometimes been a way for our students to exert personal power on their life direction (Pym & Kapp 2011).

or Chinese. Therefore, in the context of this book, the terms 'white', 'Indian', 'black' and 'coloured' refer to this self-declaration. It is likely that the majority of students declare themselves to belong to the same 'population group' as that to which their parents and other family members were consigned by the pre-1994 apartheid state.

As a consequence of their backgrounds, many students pursue a Commerce degree for the potential of the degree to secure employment and economic, social and geographic mobility. The following quotations from students provide typical examples: ‘I want to be a successful Chartered Accountant in the near future and help my parents out of the difficult financial situations they find themselves in’; ‘Education is the only way you will get yourself out of this place [referring to her impoverished living situation]’ (Pym & Kapp 2011). For many, arriving at the university is a profoundly new experience, offering as it does access to resources, freedom of movement, encounters with new people, a feeling of relative safety, and exposure to a range of new possibilities. These comments from students capture some of this sense of adventure and excitement: ‘Meeting my new and very diverse group of friends that will hopefully last me a lifetime’; ‘... being able to make my own decisions in terms of what to do and when to do it has been a very crucial part of my personal growth.’

Nevertheless, many of our students experience a crisis that relates to academic, linguistic and affective difficulties and issues. Many of the academic difficulties that these working-class and rural students experience are similar to those experienced by some mainstream Commerce students: in many cases, they have not been prepared for the rigours of higher education, for the demands of independent study, or for analytical engagement at cognitively demanding levels (Pym & Kapp 2011). The majority of black working-class and rural learners are still educated in the print-impoverished, under-resourced environments that characterised apartheid-era schooling for black learners – environments often also characterised by teacher-centred, predominantly oral classroom cultures which discourage critical enquiry. There is often a disjunction between students’ experiences and understandings and the conceptual demands of core disciplinary concepts. This results in a desperate need for skilled and sensitive teaching, and learning environments that facilitate epistemological access.

In South Africa, close to 90 per cent of learners have to study through the medium of English (often their second or third language): their textbooks are written in English and learners have to pass examinations in that language. In this context, school teachers often compensate for their own and learners’ struggles with English by teaching in learners’ home languages. There is little close engagement with texts and limited analysis of concepts (Pym & Kapp 2011). Literacy practices are dominated by rote learning and take on an instrumental character, functional to the externally set examinations that students have to pass in order to gain a school-leaving (matriculation) certificate (Christie 2008; Kapp 2004; Slonimsky & Shalem 200).

In the school environment experienced by many of our students, teachers were often absent and the overall culture of teaching and learning was not conducive to learning. These school environments do not in fact prepare them to cope with the required level of cognitive academic language proficiency (Cummins 1996) and the pace of engagement in the new environment of the university. On the whole, the large classes at university level are usually lecture centred, and the anonymity of this teaching style often limits students’ involvement and intellectual development (MacGregor et al. 2000). Many students are also self-conscious about their level of English competence and feel intimidated and unable to ask questions. As one student has said: ‘I’m finding it difficult to understand ... very fast and strictly in English.’ The following quotation from another student highlights the meta-level shift that students have to make in terms of approach to learning and cognition:

Varsity, the pace and the way you do things is completely different to school ... I think maybe it’s also the way it was taught and, because some of the things they assume that you know from school and sometimes you haven’t covered those things so you have to go and actually re-teach it to yourself and the standard, they assume that you know a lot more than sometimes you do, and it requires much more time and practice than in high school. I can’t just sit and read some of the things, like I used to have ways of remembering, making up little sayings and things and some of the work now it’s hard to

still do those things because it's much more to remember. ... in school you have to learn to remember, here you have to learn to know.

Time management is also an issue for our students because the pre-programmed structures and spoon-feeding practices of school have not prepared them to cope with multiple demands simultaneously. Students therefore often spend inordinate amounts of time on their studies, to the exclusion of other activities, or become so overwhelmed that they complete little – the ripple effect is one of feeling ‘out of control’, as this quotation indicates: ‘Adapting to university and time management. Struggling to stay focused because I am always tired, stressed and overworked. Balancing the time I allocate to courses as I neglect the ones I am not good at.’

A significant number of the students experience varying levels of demoralisation and loss of self-acceptance when they first realise that their schooling has not prepared them for university. This student speaks about how she is constantly comparing herself to other people: ‘... then you feel inadequate and then I start thinking the people around me are so smart and I'm not.’

In some cases, the difficult conditions of home continue to make demands on students and affect their ability to focus on their university life. A significant number of students speak of missing home and experience loneliness and the isolation reflected in the following quotation from one of them, as they attempt to make connections within a new, very different environment: ‘Because I've been living away from my friends and my family and I have to kind of find myself away from all, find out who I am away from all those things that used to define me, ja.’ Diminished self-acceptance often affects our students' ability to connect with others. Their eroded self-esteem often leaves them feeling unworthy, and a significant number of them indicate that they battle with socialising and self-confidence, as is reflected in these typical quotations: ‘My own true enemy is confidence’; ‘I am intelligent and have always been at the top of my class but despite it all I am not that high on self confidence’ (Pym & Kapp 2011).

A crucial change of direction

In many parts of the world, students whose circumstances cause them to be viewed as ‘at risk’ of not adjusting to higher education and failing are often placed in ‘special programmes’ that address their academic and linguistic difficulties. They are provided with extra courses in small, separate, compulsory first year programmes taught by specialised staff. Thereafter, they exit into the mainstream programmes to continue with their studies. These specially designed programmes arose as a response to apartheid-era (see footnote 40) education. The intention is to identify potential and provide access to black students, which might mean accepting students with lower admission criteria.

Ironically, the history of special programmes, or Academic Development, has in many ways exacerbated AD students' experience of being ‘other’ and marginalised in higher-education institutions, as these students' identities have been constructed as being ‘less able’ and ‘ill prepared’. A deficit assumption (Boughey 2010) has predominated, focusing on students' lack of preparation to cope with tertiary studies. These stereotypes have been compounded by the politics of race and class in South Africa. The silence about the psychological and social aspects of the transition ignores the considerable identity challenges faced by young black students who have come from impoverished conditions and often dysfunctional homes and schools into relatively elite universities (see also Marshall and Case (2010)). A frequent consequence of the need to counter the stigma associated with special programmes for black students at historically white institutions has been an avoidance of a direct focus on the socio-cultural and psychological aspects of students' transitions into higher education, for fear of pathologising black students' experiences and creating a notion of victimhood. Instead, there has been a strong emphasis on assimilating students into higher education, with a concomitant ‘cultural literacy’ model (Knoblauch and Brannon 1984: 29) foregrounding middle-class, white, Anglicised norms and values. By their very nature,

such programmes often have the unintended effect of producing what Steele (1999: 44) calls ‘stereotype threat’, that is, an overarching anxiety that becomes a self-fulfilling prophecy. The consequence is to encourage passivity and dependence, thus stripping students of the agency that enabled them to attain access to tertiary studies despite their home and school circumstances.

Our realisation of these issues has informed a crucial and fundamental shift in our understanding of our work with first-generation students. We have transformed our practice from one working with a deficit model to a practice that actively engages with the varying linguistic and social capitals that our students bring to higher education. The focus is now on a ‘value-added’ model that engages with students throughout their degree, focusing on academic and affective factors as well as developing graduate competencies such as presentation skills, leadership opportunities, the capacity for meta-reflexivity, productive management of time, and social consciousness. Developing a range of experiences and competencies has caused a fundamental shift in the number of the students in the AD programme (from 74 in 2001 to 950 in 2011), the number of students who want to be in the programme, the graduation throughput rate (40% in 2001 to 84% in 2011), and the number of students accepted into postgraduate degrees (2 in 2006 to 63 in 2011), as well as a range of meta-reflective capacities and graduate skills.

Four fundamental threads

Undergirding all the areas of our work have been four fundamental threads that impact on everything we do: having a clear vision, building a learning community, working with what the students bring, and creating a reflective practice.

Have a clear vision

Our vision has been to create an environment for students throughout their degree that will enhance and develop their learning experience, their academic success and their broad graduate attributes and qualities. This has meant working with the micro details of the programme, as well as at the macro level in the Commerce Faculty. Our particular focus has for the most part been black (mostly first-generation) students, but increasingly we are engaging with the needs of all students in the Faculty. We do this through, for example, the EDU student-development counselling services, courses to help mediate the transition to university, and specific interventions in courses attended by vulnerable students. We have also introduced a range of ongoing initiatives with academics: forums that engage with teaching and learning issues, tutor training, departmental workshops and staff mentoring programmes. Most importantly, our vision is not static. It is something with which we need to engage seriously on a yearly basis to map out our direction: what is it we want to do, what is our ‘dream’, and where are we heading? Our vision needs to be realisable and needs to take cognisance of the many changes that happen each year, in terms of both the size and the nature of the AD cohort. Class sizes, for example, are increasing dramatically as the AD programme becomes more successful and sought after. The students’ education and life experiences, too, are continually shifting: for example, ten years ago, none of the students owned a cell phone; today, all students have one, even if they are battling to find food money. A key formal shift in the programme’s vision has been to work in a systematic way with the broader Faculty. There has always been an acknowledgement that the broader Faculty needs to engage with teaching and learning issues, as well as initiatives aimed at enhancing the Faculty’s capacity to do so, but this engagement is now far more structured and formalised than was previously the case, as a necessary part of the programme’s work.

Build a learning community

Our focus on building a learning community is inspired by Vygotsky’s (1978) focus on social practice. Underpinning this focus is the belief that collaborative work is richer, more critical and more engaging than individual work (Crosling et al. 2009). This focus is evident in our teaching pedagogy, our teaching structures, and the range of interventions we provide, as well as extending to the whole Faculty through

the Commerce Education Group, tutor development, staff mentoring programmes, showcasing ‘best practice’, and various other initiatives that will be detailed in the following chapters.

Work with what the students bring

We aim to find multiple ways of giving a ‘platform’ to students’ lives, experiences, culture, language and ways of being, so as to help them ‘straddle’ the different worlds of home and university. As Haggis and Pouget (2002) suggest, explicit links need to be made between curriculum and first-generation students’ own experiences and views of the world. Crucially, we need to shift our own understandings, practices and ways of doing things. Creating ‘value-added’ experiences enhances students’ own sense of well-being and community, but also begins a formal process of thinking about how we develop students who have a range of competencies and qualities. In moving away from deficit notions that view our students as ‘disadvantaged’ or ‘underprepared’, we are working hard at valuing what our students bring to higher education. We understand that the university is enriched by the diverse cultural and language backgrounds of our students and our staff. In the process of valuing this enrichment, we have attempted to develop a deeper understanding of who our students are, what they know, and their diverse cultural backgrounds. Various formal and informal initiatives have helped us acknowledge and benefit from this diversity: these have included surveys; the development of structures that ensure that students have a ‘voice’ (for example EDUSO – the Education Development Unit Student Society); the use of several different teaching pedagogies (for example small groups, varying technologies, case studies and problem solving); and the employment of a variety of formative feedback mechanisms (for example class meetings and daily interaction in teaching to elicit feedback).

Reflective practice

Our view is that one size does not fit all. Structure, methods, interventions and ways-of-being need to be varied and to be responsive to a range of life experiences, styles of learning and needs. We need to be continually in tune with whom we are serving, with the needs and issues the students present, and with how these change. Achieving this means a great deal of reflection, flexibility and change in what we do, and in how and when we do it. This work is about ‘process’, with a continually changing terrain and significant moments for students, and about developing forums in which students and staff can hone reflective capacities, and harnessing the power of stories to motivate and help nurture this meta-awareness. This has meant consciously creating spaces in which we can continually reflect on our practice, and has enabled us to be proactive rather than reactive in responding to students’ needs. This approach has been crucial to answering with understanding the essential question of ‘who our student is’ in a rapidly changing institutional, national and global context. Reflective practice means that flexibility is crucial in continually assessing the impact of our work, what is working, and what needs to change or be reviewed.

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3.7 Research-led teaching in the Faculty of Science⁴³

A simple ritual is played out each year in February. The new intake of Science students arrive at UCT and are ushered into the New Science Lecture Theatre (NSLT) for the welcome ceremony which begins the few days of orientation to the University and the Faculty of Science. One can read their thoughts: "If this is a 'new' lecture theatre, what must the others be like?" Our first act of kindness is to place NSLT in context. The significant parts of the ritual then unfold, with welcoming addresses and exhortations from the Vice-Chancellor or one of his Deputies, the Dean, Deputy Dean and so on. While the scripts are fresh

⁴³ Contributed by A/Prof D Gammon

every year, there is a recurrent theme: “You’ve done well. Congratulations. You’ve selected arguably the best Science Faculty in the country, and it is an exciting time to be studying Science. There are excellent scientists here: you will be taught by leading researchers, sometimes “A-rated”, sometimes at the top of their game, nationally and internationally; their performance contributes to our high standing in international rankings (though we are, of course, cautious in our interpretation of these). For instance, Professor X has just published a key paper in Nature; Professor Y has won an international award; Professor Z is part of a research team furthering the fundamental understanding of ... You will have a chance to learn from these people ...”

Thus begins the student’s journey of engaging with and learning Science at UCT, and it is pertinent to reflect for a moment on the extent to which the early perceptions might match reality. Our earnest introductions and exhortations of students beg some important questions. We pride ourselves, indeed, on being strong on research, and believe that this contributes to giving us a competitive advantage. Implicit in our statements is the belief that good teaching, or effective learning (or perhaps both) will follow from the fact that it will be mediated by research-active staff. How does this belief/claim stack up against reality? Do we, the academics, consciously integrate our research into our teaching, or allow the one to inform the other? Is there any evidence that research does impact on teaching, and on the extent that it does? How do our practices measure up more widely, when considered in the context of the literature on research-led teaching and practices in higher education institutions elsewhere?

An attempt is made here to answer some of these questions, to evaluate a selection of instances in the Science Faculty where research is influencing teaching, to identify the challenges we face, and to pose some key questions on where we might go from here. Perhaps the first challenge is to attempt to gain a sense of the global context and discussion on research- led teaching, and to analyse our efforts in this framework. The literature of this debate is not familiar to a scientist engaged in disciplinary research and fulfilling his or her teaching obligations and perhaps this is already a measure of what we are up against: the scholarly debate is happening in a different cloud. However, a cursory search of the literature reveals that there has been extensive debate over the past two decades or more on what is meant by research-led teaching, and the extent to which this is a valid or important goal for an institution and its individual academics. It turns out that the existence of a relationship between research and teaching is in fact quite contested: it has been acknowledged by significant scholars as a “myth” due to the paucity of empirical evidence for measurable influence of research on teaching, though a meta-analysis of studies of this topic did conclude that there had been limitations in the research questions and methodologies in many studies, and more careful investigations were warranted.⁴⁴ The “myth of the research-led teacher” has also been postulated,⁴⁵ though a path of development towards being one was proposed, which involved *inter alia* a process of integration of the distinct ways in which the researcher and teacher organize knowledge.

One would have thought that these rather fundamental objections would have stopped us in our tracks, but the reality is that people and institutions have placed a great deal of emphasis on research-led teaching, and related concepts. This is understandable and justified in the context of serious debates on the effectiveness and efficiency of public-funded institutions, and the obligations these have to deliver and achieve high standards in teaching and research. A cohort of scholars has monitored and researched the phenomenon, particularly in the UK and Australia. The reports are instructive in highlighting what should be done and how it should be promoted and organized.

⁴⁴ An Verburgh, Jan Elen and Sari Lindblom-Ylänne (2007). Investigating the myth of the relationship between teaching and research in higher education: a review of empirical research. *Studies in the Philosophy of Education* (2007) 26:449–465. DOI 10.1007/s11217-007-9055-1

⁴⁵ Ian M. Kinchin and David B. Hay (2007): The myth of the research-led teacher. *Teachers and Teaching: Theory and Practice*, 13:1, 43-61. DOI 10.1080/13540600601106054

Thus, for example, Brew⁴⁶ reviews the history of the concept of research-led teaching, and highlights the categorization of these concepts by a research-intensive institution, the University of Sydney, as being useful and probably desirable in their combination. The first way to think of research-led teaching, she suggests, is as *research-enhanced teaching*, where “teaching is informed by the research activities of the staff member who would integrate findings or perspectives of disciplinary research into courses and curricula; students would be both an audience for research and possibly engaged in research activity, perhaps dependent on the level of the teaching.” The second interpretation is *research-based learning*, where “opportunities are provided for students at all levels to experience and conduct research, learn about research throughout their courses, develop the skills of research and inquiry and contribute to the University’s research effort.” The third concept is *scholarship of learning and teaching*, where “staff and students engage in scholarship and/or research in relation to understanding learning and teaching. Evidence-based approaches are used to establish the effects and effectiveness of student learning, teaching effectiveness and academic practice.”

This seems like a useful framework in which to evaluate teaching activities in the Science Faculty at UCT, and I shall return to this later. But before doing so it is useful also to note at least some of the literature which examines the institutional discourse with regard to teaching and research, and the extent to which this can facilitate and enable good practice, but also runs the risk of skewing the emphasis unfavourably towards either research or teaching. This is highlighted in a recent paper⁴⁷ reporting on views of research-led teaching which emerged from extensive interviews with university leadership in a research-intensive university. Perhaps not surprisingly, the author reported that the leadership strongly conveyed a view which gave research a superior status to teaching, despite their support for integrating teaching and research. Views emerged that “research legitimates the University”, that “research must lead because it is superior to and more exciting than, teaching”, that “research leads teaching because research is inspiring”, and that “research operates as a framework for teaching”. This was reinforced by the fact that “leading researchers may not teach but teachers must research”. These perceptions are not unfamiliar to us at UCT, and indeed may not necessarily be unjustified. However, they deserve to be debated and “opened up” more thoroughly and honestly if we are to make progress in defining appropriate ways of teaching and finding ways to acknowledge effectiveness and expertise in teaching.

What then, of research-led teaching in the Science Faculty at UCT: does it exist, is it worthwhile, should it be lauded and encouraged, or even become the norm, and just how important is it to make an issue of this?

From a brief, mostly informal survey of the Faculty, but informed in large measure by the ongoing deliberations and discussions in the now-disbanded Committee for University Education in Science (CUES) and its successor the Science Teaching and Learning Committee, it is evident that a significant number of academic staff are engaged in some way in “research-led teaching”.

Most instances would probably fall into the category of *research-enhanced teaching*, in that the practitioners are finding meaningful points of contact between their research and teaching interests. Perhaps the most obvious and common manifestation is when lecturers illustrate or annotate their lectures from their own research. The Department of Zoology, for example, has a cohort of research-active staff and is one of the most productive departments in the university in terms of published articles, books and

⁴⁶ Angela Brew (2010): Imperatives and challenges in integrating teaching and research. Higher Education Research & Development, 29:2, 139-150. DOI 10.1080/07294360903552451

⁴⁷ Susan Mayson and Jan Schapper (2012). Constructing teaching and research relations from the top: an analysis of senior manager discourses on research-led teaching. Higher Education, 2012, 1-15. Springer Netherlands. Doi: 10.1007/s10734-012-9505-8

monographs. The alignment of teaching duties with research interests ensures that insights from research enliven lectures. In more senior classes lecturers use their own published research papers as a basis for class discussions or seminars. In the foundational disciplines like Chemistry, Physics and Mathematics, lecturers often capture the interest of large first year classes by relating stories from their own research, inserting these in at appropriate points in the curriculum. However, deeper examples of research-enhanced teaching exist where research findings form the basis of the course, or part of it. In Professor Charles Griffiths' marine biology course in Zoology, his recent research findings, including some unpublished data, form the basis for the course since no other up-to-date text exists which can compete with the dynamic and unique research in this area in the department. Another example comes from Computer Science where Professor Gary Marsden teaches a module in the second year course on Mobile Interaction Design, a topic closely related to his own research interests in the creation of interactive software in mobile computational devices. The course is based on his own book on this topic and on some of the work of his postgraduate students. In the Geology Department, Professor Steve Richardson uses his 2011 paper in *Science*⁴⁸ as a basis for discussion with his Geology Honours class of the current understanding of the onset of plate tectonics in geological history. In Environmental and Geographical Science, Dr Gina Ziervogel teaches a course on vulnerability to climate change, and in the absence of up-to-date information and course material, particularly with relevance to the African context, has developed her own teaching materials based closely on her own research findings. She has shared these widely through making them Open Content, and won an award in recognition of the quality of her work. Her research has had a direct impact on her teaching and, interestingly, the incorporation of research activities into her teaching also ensures that the teaching adds value to the research. An initiative of the Chemistry Department is also worth noting under the heading *research-enhanced teaching*: it organizes an annual "open research week" during which first year students are taken on guided tours of the research activities in the department, with postgraduate students acting as guides. In this way, students are exposed at an early stage of their studies to the broad range of research activities, and gain a sense of where their studies are leading. This highlights a belief that one of the goals of effective teaching is to induct students into a culture of research.

Many of the disciplines in the Science Faculty find the concept of *research-based learning* more difficult to engage with, but there are important examples where it forms a key part of the learning process. In Zoology the second year students go on a field camp where activities often centre around the students assisting Honours, Master's, or PhD students, or staff, in collecting data that will be used eventually in theses and publications. While they may not interpret the data, the students are exposed to the research process and see their efforts contributing to publications. This is therefore also the beginning of an induction into the research culture. The Department of Archaeology includes fieldwork in its teaching model, and runs three-week field camps for third year and Honours students at Elandsfontein on the West Coast, near the West Coast Fossil Park. Dr David Braun supervises these camps at an authentic research site, where students participate in an ongoing research project involving the excavation of an early stone-age landscape which is yielding valuable artefacts.

The Departments of Mathematics and Applied Mathematics, as well as Molecular and Cell Biology require their third year students to undertake a supervised research project, designed to draw together theoretical understandings gained over the three years. Students in Mathematics are also encouraged to step beyond passive learning by participating in seminars on mathematical topics. There is a recognition that despite the formidable weight of theory in these disciplines, learning them is more than just content driven, but can be facilitated by engaging with real research questions. As a final example of research-oriented learning, the unique course taught by Dr Gina Ziervogel is highlighted again: as part of this course on vulnerability to climate change, the students carry out their own research on phenomena

⁴⁸ Steven B. Shirey and Stephen H. Richardson. Start of the Wilson cycle at 3 Ga shown by diamonds from subcontinental mantle. *Science* 22 July 2011: Vol. 33, no. 6041, pp. 434-436. DOI: 10.1126/science.1206275

representing such vulnerability, such as the influence of climate on wine farmers in the Western Cape, or the plight of homeless people, or the effects of flooding in informal settlements. They write up their findings in a report which contributes to the wider research in this important field.

The final category of research-led teaching, the *Scholarship of learning and teaching*, has some notable contributions in the Science Faculty. These are instances where staff are actively reflecting on and researching aspects of the teaching-learning nexus. The research of Associate Professor Andy Buffler and associates in Physics, and Associate Professor Bette Davidowitz in Chemistry is contributing to the understanding of how students learn in these disciplines, and the way in which their high school education has impacted on their ability to learn at a tertiary level. Dr's Jurie Conradie and John Frith in the Department of Mathematics and Applied Mathematics have also looked carefully at aspects of the school/university interface, and contributed to our understanding of the kinds of mathematical knowledge incoming students bring to their university studies. They also continue to do research on diagnostic tests that can be used for placement in appropriate programmes. The work of each of these researchers, and their associates, has had a reach into the Faculty through their engagement with faculty committees and discussion groups, and therefore impacts on the way other academic staff approach their teaching.

These, then, are some of the ways that academics in the Faculty of Science are integrating their research into their teaching. One can conclude that at least to some extent the DVC and Dean have been correct in asserting that we offer a competitive advantage by virtue of being taught by top researchers. The instances highlighted here are largely driven by the academic themselves, interpreting their academic responsibility in this way. Those who are engaging in this approach to teaching do it with evident enthusiasm and enjoyment: they are self-motivated, and the spill-over of their research is both inevitable and a logical consequence of their understanding of what science is and what science offers by way of a framework for discovery and problem solving. How can one continue to promote this culture of enthusiastic innovation combined with careful reflection? Is it sufficient to appeal to fellow scientists to "be true" to their calling, to apply the same rigour, thoughtfulness and creativity to their teaching as to their research, or will more deliberate interventions or rewards be required? Sadly, students in some classes do not have a good experience when taught by a good researcher, and as noted above, there is not necessarily a good correlation between being good at research and being good at teaching.

The key challenge we face can be summarized as that of significantly improving the effectiveness of teaching and learning, while at the same time attending to the changing world in which the students find themselves, and providing knowledge and skills commensurate with that. Perhaps, as Angela Brew⁴⁶ has written, the concept of research-led teaching does encompass the range of requirements of a teacher in a higher education institution. We have good examples of this in our Faculty, and we should explore ways to share experience and expertise, and to encourage and support new ventures.

Annexure 1: A High-Level Summary of Quantitative Indicators⁴⁹

The following key aspects of teaching and learning at UCT have been extracted from the Appendix of Tables to the 2011 Teaching and Learning Report:

Please note:

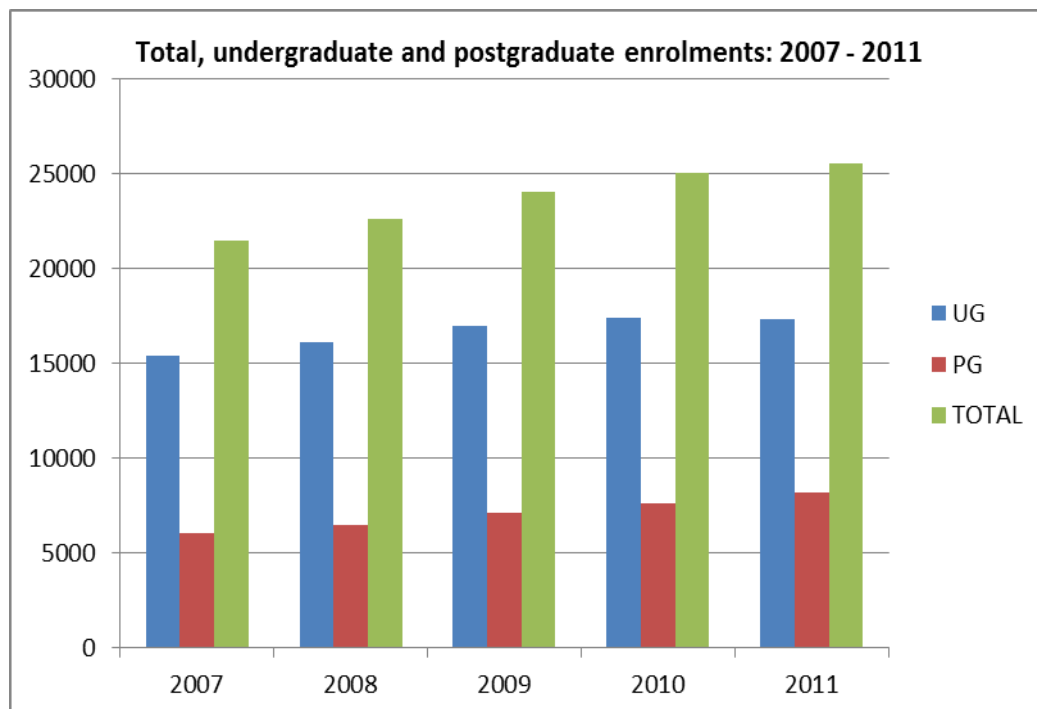
- South African students have been grouped according to the designations in the UCT application form – black, coloured, Indian and white – whereas international students have been reflected as those from the rest of Africa, and those from the rest of the world.
- A comprehensive set of departmental level indicators is available from the IPD as a supplement to the faculty level indicators presented here.

Students

Enrolments and Enrolment Profiles

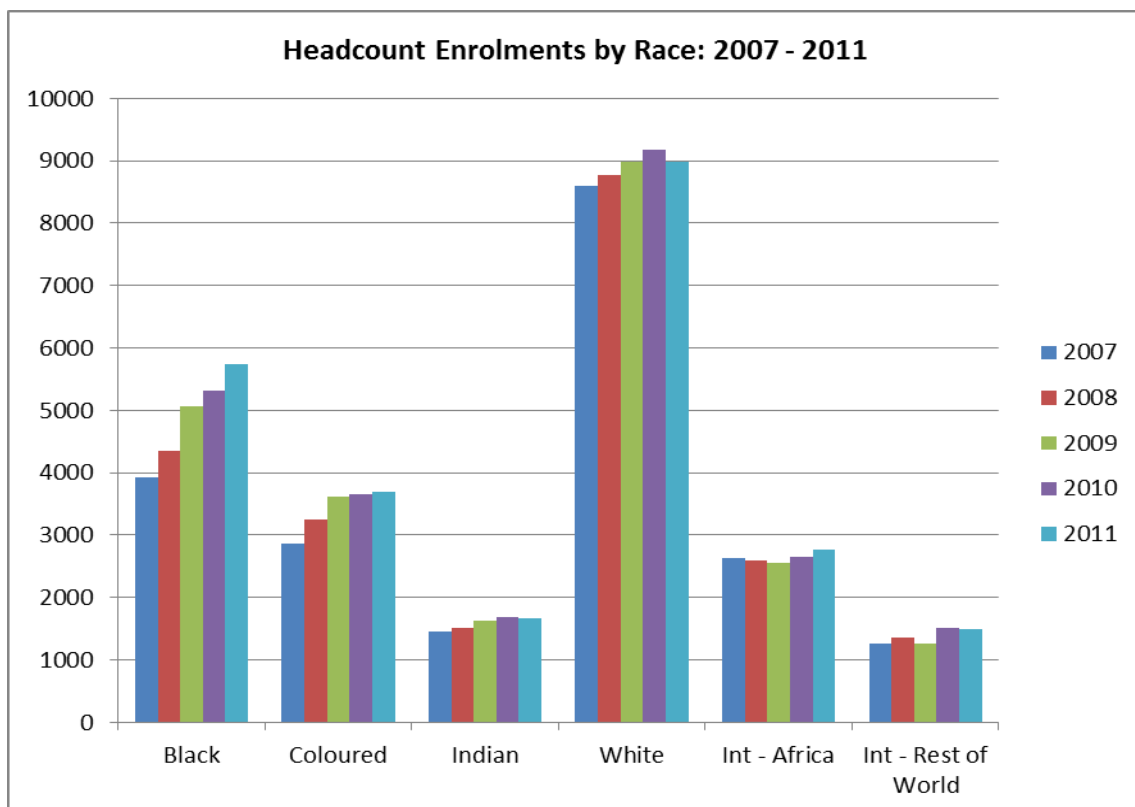
(Refer to Tables 1- 8 and Table 12 of the Appendix)

- A total of 25 508 students (17 312 undergraduates and 8 196 postgraduates) enrolled at UCT in 2011. The 2011 enrolment represented a 2% increase on the 2010 figure. The average annual growth rate between 2007 and 2011 was 4,5%. The rate of growth in undergraduate enrolments was 3% per annum over this period whilst postgraduate enrolments grew at an average rate of 7,9% per annum. The postgraduate proportion of the enrolment (including the Postgraduate Diploma and Honours level) increased from 30,5% to 32,1% of the total enrolment in 2011.
- The 2011 undergraduate enrolment was slightly smaller than the 2010 total of 17397. The GSB and the faculties of Humanities, Law and Science all had slightly lower undergraduate enrolments in 2011.



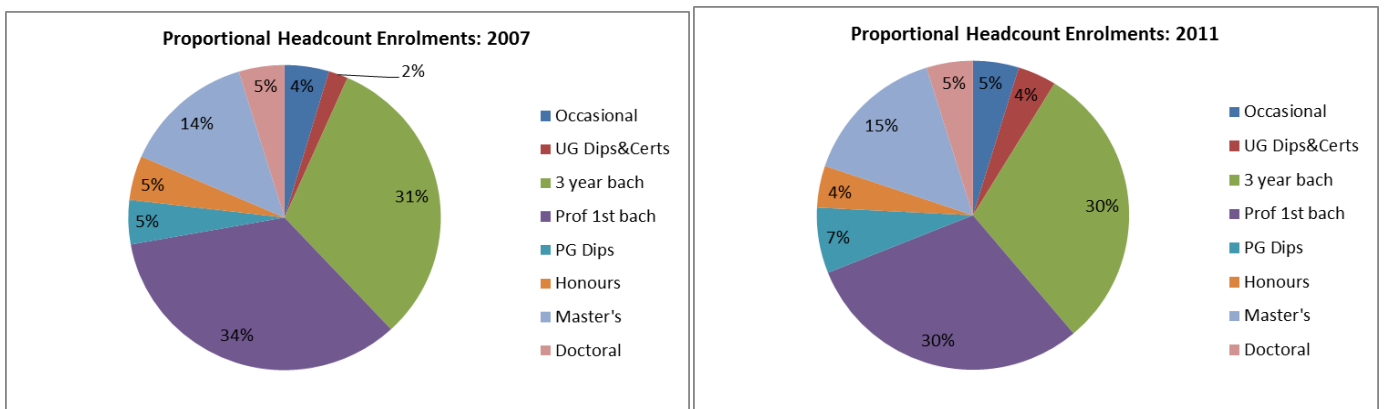
⁴⁹ Contributed by Ms J Hendry

- Although the total 2011 Humanities enrolment was slightly smaller than in 2010, Humanities remains the largest faculty: 7401 students (29% of the total) were enrolled for programmes in this faculty in 2011. The 2011 enrolment in the GSB and the Law Faculty were also slightly lower than in 2010.
- At the undergraduate level, the 2007 – 2011 enrolment growth rate in Humanities (6,9% per annum) was the largest and was more than twice that of the second most rapidly growing faculty (Law, with a 3,0% per annum growth rate).
- At the postgraduate level, the GSB grew most rapidly (by 12,9% per annum over the 2007 – 2011 period), followed by Health Sciences (10,8% per annum) and Commerce (10,6% per annum).
- UCT’s proportional head count enrolment in the SET faculties (EBE, Health Sciences and Science) made up 41% of the total enrolment in 2011. The proportional enrolment within the Business/ Management area was 26%, whilst that in Humanities and Law together made up 33% of the total enrolment.
- South African black, coloured and Indian students together made up 44% of the total 2011 enrolment (43% in 2010). The proportional enrolments of international students from the rest of Africa and the rest of the world remained level at 11% and 6% respectively. The white South African proportion dropped by 2 percentage points to 35% in 2011.
- At the undergraduate level, the proportion of white enrolments dropped from 38% in 2007 to 33% in 2011. During the same period, the proportion of South African black enrolments increased from 21% to 26%.
- At the postgraduate level the proportion of SA black, coloured and Indian students increased by 1 percentage point to 33% of the enrolment in 2011. The proportion of international postgraduate students from the rest of Africa rose to 16% in 2011 while the proportion of international postgraduates from the rest of the world increased by 4 percentage points to 6% of the total.
- The overall number of SA black, coloured and Indian enrolments increased from 8248 in 2007 to 11102 in 2011, or by 35%.



- The first-time entering undergraduate (FU) intake in 2011 (3866) was slightly smaller than the target of 3949. A large proportion of the FU intake (70%) had achieved notional A or B matric aggregates (72% in 2010). The significant proportion amongst this intake (13% of the total) with unknown matric aggregates derives largely from students who completed their schooling outside South Africa.

- Enrolments in three-year Bachelor's degrees and professional first Bachelor's degrees each made up 30% of the 2011 enrolment. The proportional enrolment at the professional first Bachelor's level has dropped progressively (from 34% in 2007) as the undergraduate and Postgraduate Diploma proportions have increased. Master's enrolments made up 15% of the total in 2011: enrolments at this level have increased by 7,2% per annum since 2007.
- Master's and Doctoral enrolments together made up just less than one fifth of the total enrolment in 2011.
- The most rapid enrolment growth over the 2007 – 2011 period took place at the undergraduate certificate/diploma level (24,6% per annum). Enrolments at the Postgraduate Diploma level grew by 15,3% per annum between 2007 and 2011.
- Master's plus Doctoral enrolments made up 19% of the total enrolment at UCT in 2011. This is 1% lower than the target agreed with the Department of Education in 2007.



Academic staffing and student: staff ratios

(Permanent and T3 staff only, GOB and soft funded) (Refer to Tables 8 – 11 of the Appendix)

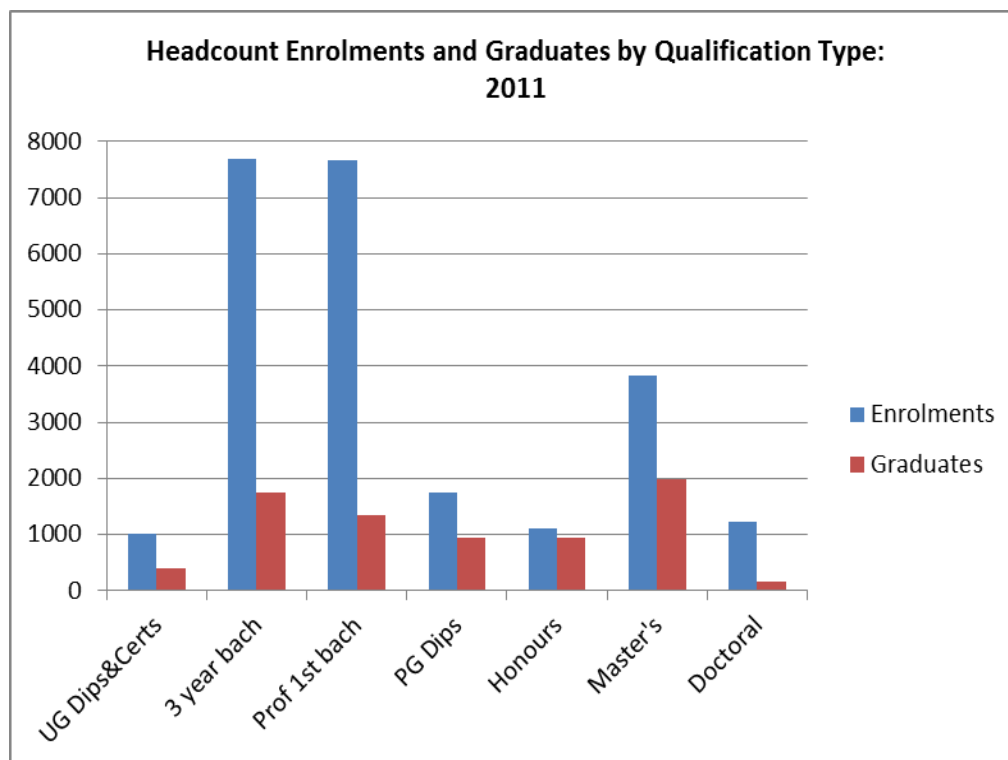
- There were, in 2011, **897 (884 in 2010)** permanent or T3, full-time academic staff in the teaching ranks spread across the 6 faculties, the GSB and CHED. UCT's permanent and T3 academic staffing complement thus grew by 3,7% between 2009 and 2011. The growth in academic staffing was only slightly lower than that in student headcount enrolments over the same period (3,1% per annum).
- Academic staffing and weighted FTE enrolments have in fact increased by exactly the same annual average rate (3,7%) between 2009 and 2011.
- The proportion of academic staff holding Doctoral degrees increased markedly over the 2009 – 2011 period, from 61% to 67%. A further 27% were qualified at the Master's level in 2011. 94% of the academic staff therefore held either a Doctoral degree or a Master's degree by 2011.
- The proportions of staff in the various academic ranks have changed very slightly over the last three years. Table 10 shows that the largest increase in absolute numbers of staff was evident at the associate professor level (an additional 33 staff in 2011). Conversely there was a marked decrease in the number of academics ranked at the lecturer level (29 fewer staff in 2011).
- Table 11b, which shows the distribution of academic staff by race (as reflected in HEMIS HR, separating South Africans by race and including all internationals within a single category) shows that there has been only a small (1 percentage point) increase in the proportion of black staff over the last three years: there were 7 additional black staff in 2011, but 24 additional white staff and 13 additional international academics.
- Table 11c shows that although the proportion of female academic staff increased by 2 percentage points between 2009 and 2011; male staff however made up the majority of academics (61%) in 2011.

Teaching and learning

Graduates and Success Rates

(Refer to Tables 13 to 16 of the Appendix)

- The “graduation rate” is an index used for benchmarking purposes by the Department of Higher Education (DHET); it is defined as the ratio of the number of graduates for a given qualification in the reporting year to the number of students registered in that year for that qualification. It is valid as a measure of success only for qualifications begun and completed in the reporting year, and as a measure of relative success in steady state conditions, i.e. when the relationship between the number of finalists to the number enrolled is constant over time.
- The 2011 HEMIS return to the Department of Higher Education indicates that 6 584 (6 281 in 2010) students, or 25,8% of the total enrolment, successfully completed a degree or diploma in 2011; this was slightly above the DHET benchmark of 25,5% set for UCT.

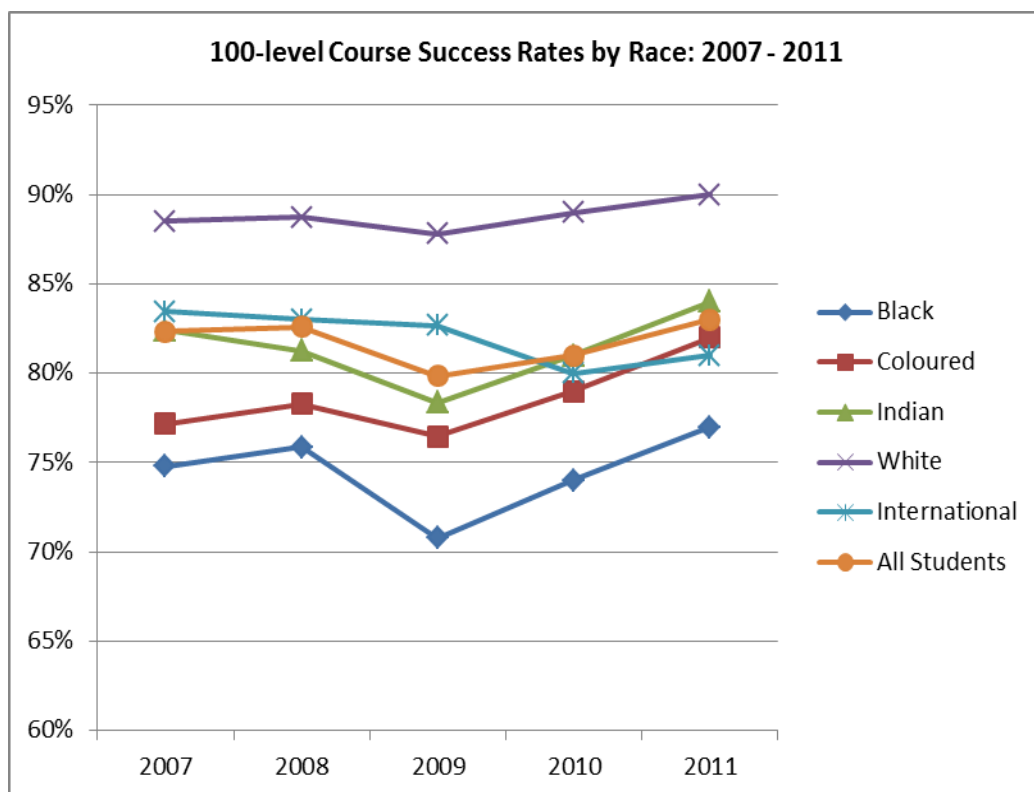


Course Success Rates

(Refer to Table 15 of the Appendix)

- The overall undergraduate course success rate in 2011 was 85,1% (84,4% in 2010).
- Table 15a shows that in 2011 the overall success rates in undergraduate courses at the important 100-level increased by 2 percentage points to 83%. The most marked improvement took place in 100-level Law courses (up by 13percentage points in comparison with 2010). There were also small improvements in the success rates in 100-level Commerce and Humanities courses (up by 1 percentage point in each case).
- The overall average success rate in 2011 200-level courses increased to 84% (from 83% in 2010). This was largely attributable to the improvement in the success rate in 200-level law courses (up by 5 percentage points to 80%).

- Success rates at the 300- level remained level at 88%, but the 400-level success rate dropped to 87% (from 91% in 2010). There were substantial decreases in the success rates in Health Sciences and Humanities courses at this level (down by 9 and 6 percentage points respectively).
- Table 15b reflects some improvement in the success rates in 100- level courses across all of the disciplinary groups (with the exception of Education). Success levels in 100-level SET courses (79% in 2011) however remained markedly lower than those in Business/Commerce and Broad Humanities courses (86% in each case). The pronounced decreases in the success rates in 300-level and 400-level Business/Commerce courses between 2007 and 2011 may be of concern.
- Table 15c shows that the success rate in 100- level courses amongst black students increased from 75% in 2007 to 77% in 2011 (following a dip in 2009). Similarly, the success rates amongst coloured and Indian students taking 100-level courses increased by 5 percentage points (to 82%) and 3 percentage points (to 84%) respectively. The 2011 difference between white (at the upper extreme) and African (at the lower extreme) success rates at the 100-level was 13 percentage points, 1 percentage point lower than in 2007. At the 200- level this differential has remained level at 17 percentage points over the 2007 – 2011 period.



Academic Standing Code Analysis

(Refer to Table 16 of the Appendix)

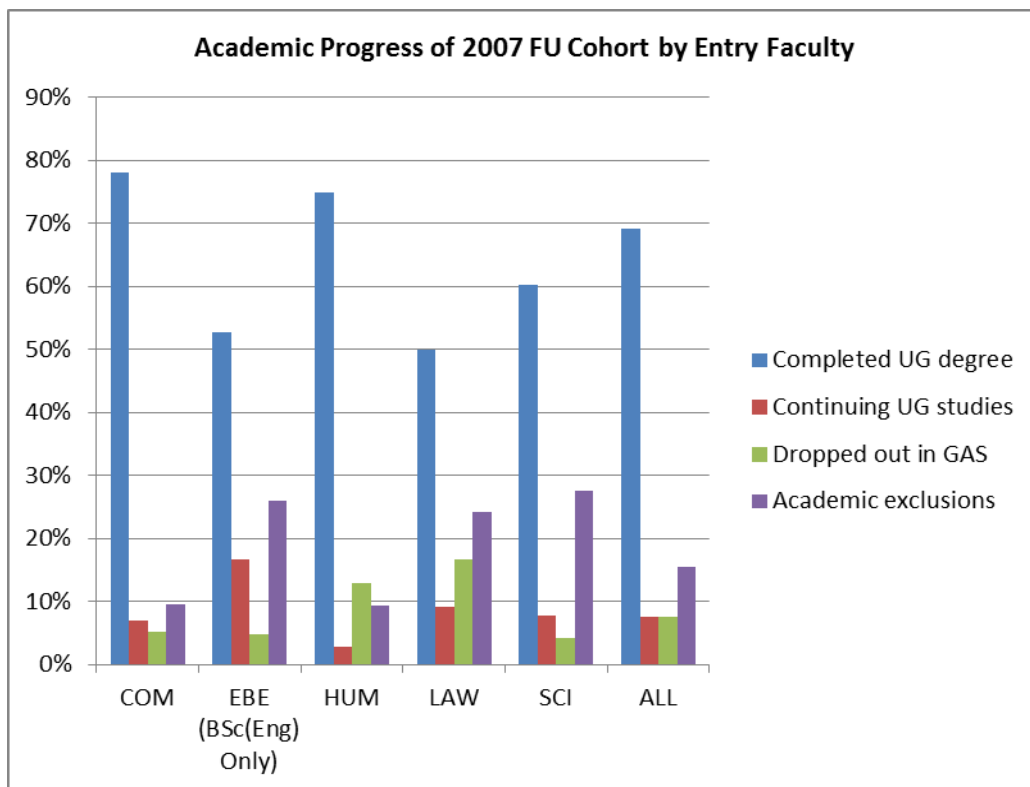
- In 2011, 86% of all undergraduates were “successful” where the measure of success is completion of a degree/diploma or meeting at least minimum readmission requirements (in which cases a CONT progress code is given). 12% of all undergraduates failed to meet minimum readmission requirements; two thirds of these (8% of all undergraduates) were given concessions to continue and the balance (4%) were academically excluded.
- While 12% of *all* undergraduate students failed to meet minimum readmission requirements, the proportion failing to do so of
 - black undergraduates was 20% (19% in 2010)
 - coloured undergraduates was 13%(12% in 2010)
 - Indian undergraduates was 13% (same as in 2010)
 - white undergraduates was 5% (same as in 2010)

- international undergraduates was 12% (same as in 2010).
- 7% of black undergraduates, 5% of international undergraduates, 4% of coloured undergraduates, 3% of Indian undergraduates and 1% of white undergraduates were excluded on academic grounds at the end of 2011. The relatively high rate of academic exclusion amongst black undergraduates was the resultant of the 15% and 11% rates of academic exclusion amongst black Science and EBE undergraduates respectively.

Undergraduate Cohort Analysis

(Refer to Tables 17 and 18 of the Appendix)

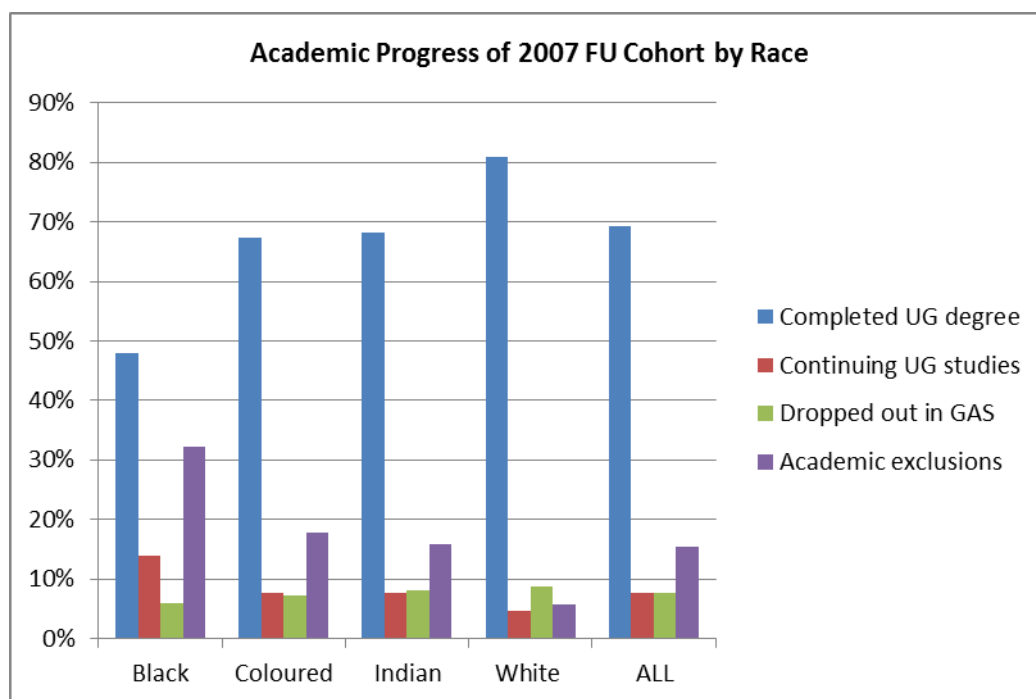
- Analyses of the longitudinal progress of first-time entering students within the 2003 - 2007 entry cohorts showed that 69% of the 2007 FU cohort (in comparison with 71% of the 2006 cohort) had completed a degree/diploma by the end of 2011. The highest completion rates amongst the 2007 FU entrants were observed in the Commerce (BCom plus BBusSc) and BSocSc and BA cohorts (78%, 76% and 73% respectively). The completion rate within the 2007 BSc FU cohort increased by 2 percentage points (to 60%) in comparison with the 2006 – this improvement resulted largely from a decreased rate of drop-out in good academic standing (down 4 percentage points to 4% of the entry cohort) rather than an improvement in the rate of academic exclusion. Within the Law Faculty, the 50% completion rate amongst the 2007 FU cohort was 9 percentage points lower than that amongst the 2006 cohort, largely because of a substantial increase in the cumulative proportion of the 2007 cohort which had been excluded on academic grounds within the five year period.



- Cohort completion rates across the 2003 - 2007 entry cohorts varied widely in relation to entry faculty as well as by race. The gap between completion rates amongst white and black students remained large: 81% of the white 2007 FU cohort in comparison with 48% of the equivalent black FU cohort had completed an undergraduate qualification at the time of this analysis. Table 17b shows that there has been some improvement in the rate of drop-out in good academic standing amongst black students (6% of the 2006 and 2007 cohorts left UCT in good academic standing without completing a degree/diploma) but that the rate of exclusion on academic grounds has increased markedly – by 9 percentage points across the 5 FU cohorts

examined in this report. Similarly, there has been a marked increase in the proportion of successive FU cohorts still busy with undergraduate studies (17% of the 2006 cohort and 14% of the 2007 cohort). If those still busy with their studies are seen as potential graduates, the potential completion rate within the 2007 black FU cohort climbs to 62%, and that amongst the equivalent white cohort rises to 86%. The very high cumulative rates of academic exclusion amongst black students entering the EBE and Science Faculties (44% of the 2007 EBE cohort and 52% of the Science cohort) remain problematic.

- 67% of the 2007 FU coloured cohort had completed a qualification by the end of 2011. A further 8% of this group were still busy with undergraduate studies after five years, bringing the potential completion rate with this cohort to 75%. The improved completion rates amongst the successive coloured 2003 – 2007 cohorts resulted largely from a 5 percentage point decrease in the cumulative rate of drop out in good academic standing. There has been little change in the rate of academic exclusion amongst successive FU coloured cohorts, but the proportion still busy with undergraduate studies after five years has risen to 8% (of both the 2006 and 2007 entry cohorts).
- The completion rates amongst the 2003 to 2007 Indian cohorts were all in the order of 68% - 73%. The 3 percentage point improvement in the rate of academic exclusion amongst the 2006 cohort was reversed in respect of the 2007 FU cohort. The proportion of students still busy with undergraduate studies after five years (8% of the 2007 FU cohort) was more than double that seen amongst the 2003 FU Indian cohort.
- The cohort completion rate amongst the 2007 white cohort was 81%, which is equal to that amongst the 2006 FU cohort. The proportion of students still busy with undergraduate studies however increased, from 2% of the 2003 FU cohort to 5% of the 2007 cohort. The potential completion rate amongst the 2007 FU cohort is therefore 86%. The cumulative proportion of white FUs excluded on academic grounds has fluctuated at around 5 to 6% of the entry cohort, but the proportion dropping out in good academic standing dropped from 13% of the 2003 FU cohort to 9% of the equivalent 2007 cohort (the highest of the four population groups).



- Longitudinal performance within the extended programmes varied widely by year and by programme: no clear trends emerged in any of these programmes. 40% of the 2007 intake had completed a qualification by the end of 2011, and 29% were still busy with their studies. The potential completion rate within the overall 2007 extended programme cohort is therefore 69% (in comparison with 62% of the equivalent 2006 cohort). There had been an encouraging decline in the cumulative rates of drop-out in good academic standing

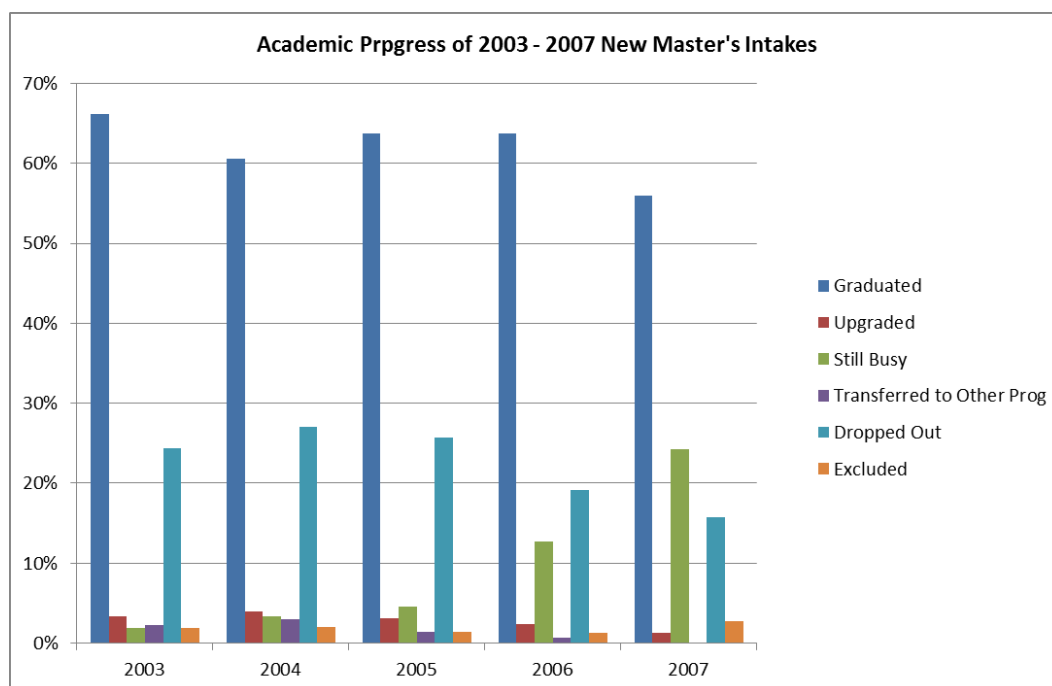
amongst students entering extended programmes in the 2003 – 2006 cohorts, but this increased by 4 percentage points to 16% amongst the 2007 cohort.

- A similar upward trend was evident in the rate of academic exclusions which had been dropping, but increased by 5 percentage points to 38% of the 2007 cohort.
- Particularly large proportions of the 2007 GEPS (Science) and ASPECT (EBE) cohorts (62% in the case of GEPS and 51% in the case of the ASPECT cohort) had been excluded from UCT on academic grounds by the end of 2010. The Science Faculty regards the first year of the GEPS programme as a selection year and anticipates a high attrition rate given that it admits students with matric points well below the normal cut-off (in this range of matric points there is very poor correlation with performance at UCT).

Postgraduate (Master's and Doctoral) Cohort Analysis

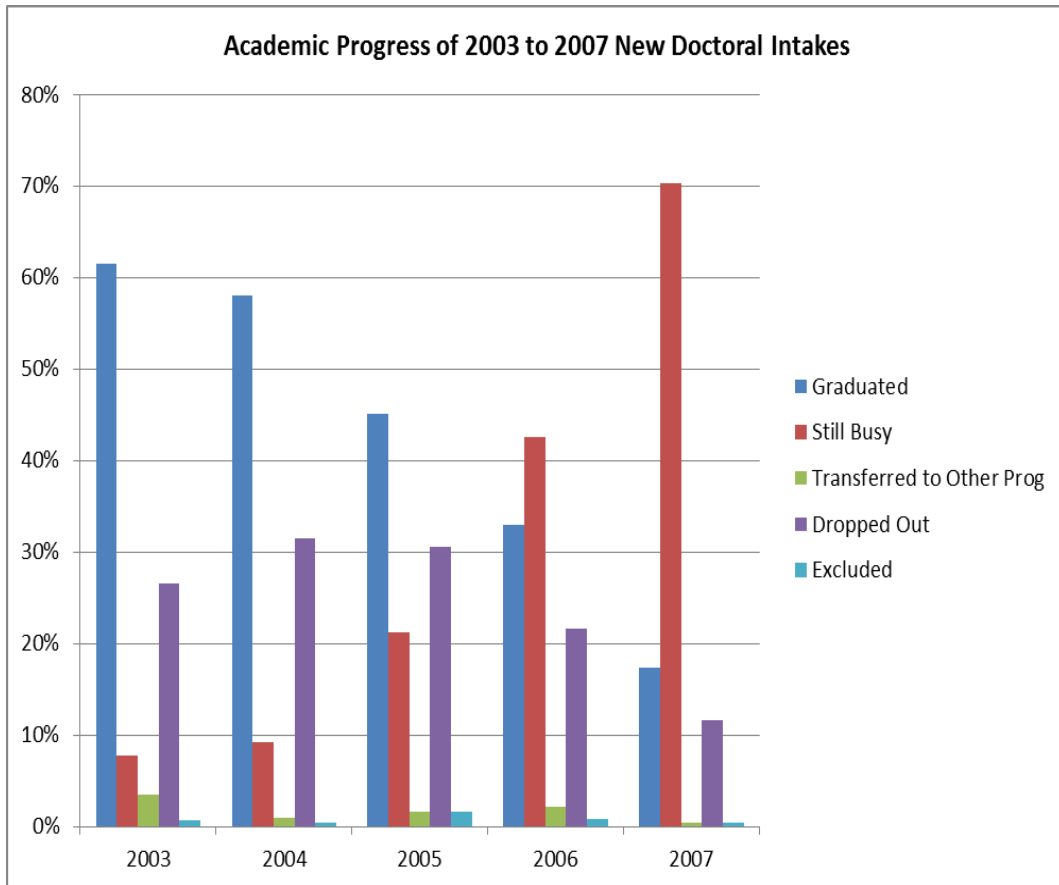
(Refer to Tables 19 and 20 of the Appendix)

- By the end of 2011, 2% of the 2003 Master's entry cohort, 3% of the 2004 cohort, 5% of the 2005 cohort, 13% of the 2006 cohort and 24% of the 2007 cohort were still busy with their studies. The potential completion rates amongst the 2003, 2004 and 2005 cohorts were therefore 68%, 64% and 69% respectively.
- A particularly large proportion of the 2004 Science Master's cohort (13%) upgraded to Doctoral study with a slightly lower upgrade rate in Health Sciences (8% in both 2003 and 2004). Smaller proportions of those beginning Master's degrees in the EBE Faculty upgraded to Doctoral study. Elsewhere, upgrades were rare.
- 27% and 26% of the 2004 and 2005 Master's entry cohorts respectively had dropped out of their studies by the end of 2011
- Very small proportions of each cohort – a maximum of 3% of the 2007 intake – had been excluded on academic grounds by the end of the 2011 academic year.



- By the end of 2011, 62% of the 2003 Doctoral entry cohort had completed their studies and 8% were still busy. The potential completion rate amongst this cohort is therefore 71%. 27% of this cohort had dropped out of their studies.
- Retention and completion patterns varied widely across the faculties: the problem of drop-out appeared to be a particular problem amongst Commerce students. Completion rates within the 2003 Doctoral cohort were highest in the faculties of Science (70%) Health Sciences 58% and Humanities 61%.

- The reasons for the high drop-out rates at both the Master’s and Doctoral levels are not understood and therefore require further investigation.



- Table 21 of the Appendix shows that the average time to completion amongst Master’s graduates increased slightly to 2.6 years in 2011. The average time to completion amongst the 2010 and 2011 Doctoral graduates was 4.6 years, in comparison with 5.2 years amongst the 2009 graduating cohort.

Annexure Two: Faculty Reports

The Teaching and Learning Committee decided to use the framework developed by the Committee to guide its work over the next three years as a lens for compiling their 2011 reports on teaching and learning in the Faculties.

Science

The year 2011 was marked by some significant transitions affecting teaching and learning in the Faculty of Science. Traditionally recognized for its strengths in research, the Faculty has nevertheless engaged in a sustained effort over the years to stimulate and support good teaching, to promote reflection on teaching and learning practices, and to engage seriously with the challenge to improve throughput and graduation rates. This work has been done by individuals and by key committees and working groups, reporting to the Dean and Deputy Dean. The momentum which has been built up over the years has culminated in some key shifts in the governance of teaching and learning and the strategy for meeting the challenges.

The first shift has been to replace the long-standing Committee for University Education in Science (CUES) by the Science Teaching and Learning Committee. CUES has been in existence since the mid 1990's, having seen just two distinguished Chairs, Professor Chris Brink (Mathematics) and then Professor Allen Rodgers (Chemistry). It has been the central forum in the Faculty for monitoring teaching and learning, and stimulating thinking and debate in this area. With membership representing all 13 departments in the Faculty, and including key representatives of other Faculties, it has maintained a strong record of careful reflection on teaching practices and factors affecting student success and throughput in Science, disseminating its findings and recommendations in reports and through successful series of Colloquia and "Critical Conversations" on matters educational and pedagogical. In a significant development for the Faculty in 2011, the Faculty Board approved a proposal from the Dean to replace CUES with the Science Teaching and Learning Committee (STLC), with a mandate and goals strongly aligned with the newly established University Teaching and Learning Committee. The STLC will continue the work of CUES with a renewed emphasis on ensuring effectiveness and efficiency in teaching and learning in the Faculty. The coincident retirement of the Chair of CUES, Professor Allen Rodgers, provided an opportunity for refreshing the committee membership, and for the appointment of a new Chair, Associate Professor James Gain (Computer Science).

The second shift in the Faculty in 2011 was the approval by the Faculty Board of a proposal from the Dean for a significant change in the structure of the BSc degree for 2013 and beyond. The proposal emerged from a working group which considered the stark realities of very poor success rates, particularly of black science students. The proposal acknowledges that we cannot continue with "business as usual". It is built around the four key principles of (a) reducing the number of first-time entering undergraduates from 550 to 450, to provide a number of students more realistically within the capacity of our teaching resources, (b) putting in place a degree structure which initially admits all students to the same programme but recognizes the need for differential pacing of studies over either a three or four year trajectory, and assists students in making this choice early on, (c) establishing a comprehensive support systems designed to help students with the academic and other challenges that they face in their student lives, and (d) a commitment to combining these efforts to increase the success rates dramatically, reflecting not only in percentage terms, but in fact in the absolute number of graduates per year. The approval of this proposal has initiated a process of intensive and extensive revision and planning of degree and course structures, not only in working groups and committees in the Faculty, but also in the departmental heartlands of the Faculty, where departments are actively engaged in re-thinking the content, scope, effectiveness and assessment of their courses, and the extent to which they are aligned with other offerings in the Faculty.

Against this backdrop of significant shifts in the Faculty's strategies, teaching and learning activities have continued. While the traditional lecture persists as the locus of much of the teaching in the Faculty, it is supplemented and in many case outweighed by other modes of teaching and learning, which the Faculty continues to resource in response to motivations from individual academics and departments.

Laboratory teaching is a key component of the empirical, basic sciences. The Chemistry Department, for example, runs an extensive set of laboratory afternoons at various levels, dealing with around 800 students at first year, 250 at second year and 60 at third year levels. It is widely acknowledged that the lab experience of the student is as much influenced by the design and content of the experiments they do, as it is by the laboratory environment and the extent to which it reflects a modern, well-equipped, safe and exciting domain in which interesting discoveries are made. This prompted a significant refurbishment of all undergraduate and postgraduate Chemistry laboratories, now successfully completed: this provides a motivational environment for both students and staff involved in the afternoon practicals. With additional funding through equipment grants some of the basic equipment in these laboratories has been upgraded to improve its safety and efficiency.

In contrast, the biological, earth and environmental sciences not only have lecture- and laboratory-based teaching, but rely on field work to illustrate fundamental principles and as sites for making observations and collecting data. UCT is strategically located in a unique site of biodiversity, and the combination of this with a set of good field facilities and leading scientists as mentors provides a unique learning experience. The Faculty continues to support this model of teaching strongly, contributing resources towards maintaining field stations and equipment, and the costs of taking students to these often remote sites where they may spend extended periods. Every year, the Department of Geological Sciences take the second year students to its site near Laingsburg in the Northern Cape, just west of the Klein Swartberg, where topics in Physical Geology become a tangible reality. Sustained periods of field-work in this area are made possible through the long-term lease that UCT has on a farm-house in the area, which has recently been upgraded and refurbished to raise the level of comfort to just above the Spartan. The Botany and Zoology Departments make use of the Potberg site in the De Hoop Nature Reserve, for their popular annual field trip to study aspects of the biology and ecology of the Western Cape. The Department of Archaeology takes third year students on a three-week field camp to Elandsfontein near the West Coast Fossil Park, where they participate in the excavation of an exposed, early stone-age landscape. They also manage a UCT Field Station near Clanwilliam, learning *inter alia* about the Clanwilliam Living Landscape Project run by Professor John Parkington. The Departments of Zoology and Oceanography take students on coastal expeditions, or to sea, making use of small craft or the Research Ships SA Agulhas and its successor, SA Agulhas II.

The foregoing examples illustrate the value of adapting the teaching model to the character of the discipline and the nature of scientific enquiry in those areas. But what of the challenges in the basic, foundational disciplines such as Mathematics, Physics and Chemistry, where the challenge is to guide students towards deep learning of the fundamental principles underlying these disciplines, and the application of these principles within these disciplines and beyond. The Faculty has recognized the limitation of large-class lecturing in encouraging deep learning of the basics, and has continued to support initiatives designed to address these challenges. The first is the well-attended ACHIEVE programme, run on Saturday mornings by Dr Spencer Wheaton (Physics) and Mr Ken Rafel (Mathematics). It provides a structured learning environment for students, giving them some guidance on solving representative problems while encouraging them to work independently or in constructive engagement with their peers. It thus encourages students to take responsibility for their own learning and guides them in how to integrate lecture material and other components into their own process of mastering the disciplines. The second example is the support the Faculty has given to an initiative led by senior students, the UCT Science Students Academic Network (UCTSSAN), which provides supervised learning (homework) sessions in the late afternoons in selected venues on the campus. Senior students volunteer their time to be available to guide students and ensure that a quiet, supportive and effective learning environment is available to them to allow for consolidation of the work they are encountering in lectures. The success of this modest, volunteer-driven initiative gives pause for sober reflection on what it takes to promote success in studies in Science: it is a model on which the Faculty will build in future years.

In conclusion, this overview of selected activities in the Faculty of Science in 2011 illustrates that while the Faculty is conscious of and engaging with the significant challenges it faces in teaching and learning, it continues to provide a rich and varied learning environment for its students.

Commerce

Governance & Teaching & Learning Structures

The Faculty Commerce Education Group (CEG) sessions held every fortnight under the leadership of A/Prof June Pym, the Director of the EDU, continued throughout 2011 and attracted attendees from across all departments within the Faculty and from outside departments, in particular, from the various departments within CHED. Formal attendance registers were taken enabling a number of staff to claim these sessions as continuing professional development and acted as a research source for identifying the target audience and their needs.

The sessions addressed issues raised by teaching staff and provided a safe, collegial environment in which to debate issues and to pilot innovations. This is acknowledged as one of the main enablers creating an environment for improving teaching and learning. A range of topics were addressed that impact on the teaching and learning environment. (Refer Appendix 1)

In addition a review of the CEG activities over the past 12 years identified the need for formal task teams to address a number of the issues that had been raised. At the end of 2011 the Commerce Faculty established a formal Teaching & Learning Working Group. It was deliberately addressed as a working group to allow for developmental work across departmental boundaries relying on the interest of volunteer members as opposed to appointed departmental representatives. In addition the working group is then able to address any issues to the relevant faculty or University committee. This has strengthened the leadership capacity for teaching & learning as this working group has the full support and involvement of the Deputy dean Academic, the Dean and the respective Heads of Department.

Terms of reference for the group and its composition have been drawn up. The teaching and learning issues to be addressed have been scoped. The action plan will play a crucial role in strengthening the teaching and learning leadership in the Faculty and broaden formal involvement beyond the EDU.

Promotion of innovation in teaching and learning

The Faculty launched a Large Class Teaching Project presentation focusing on the use of a workbook and video common to three prescribed second year level courses for the Chartered Accounting programmes.

Improve the physical teaching environment

A number of faculty teaching staff took advantage of the podcasting facilities provided and some of the younger academics initiated such podcasts using their own technology before it was provided by the University and shared the ease of opportunities through a CEG session.

In addition a list of concerns related to teaching facilities was prepared and submitted to the appropriate University body. These included venue double bookings, locked venues or inappropriate matching of size of venue to class size. Technology that was malfunctioning was another frustration.

A continuing stumbling block to ensuring the integrity of tests and examinations is the use of tiered venues with no invigilator access e.g. NSLT and the use of multiple venues up to 12 for one test sitting.

Professionalise teaching

A number of academic staff have registered for and are in the process of completing their Master's in Higher Education through CHED. In addition A/Prof June Pym acted as a mentor and evaluator of individual academic staff members at their request. The success of this initiative has resulted in the demand exceeding the faculty capacity for one on one academic staff development. Discussions about more efficient methods to achieve the same outcomes have commenced.

Strengthen research-enriched teaching

There were presentations by Commerce Faculty staff at the annual 2011 HELTASA conference and part of the ongoing accreditation criteria for professional programmes is the teaching of the latest developments in the disciplines. There have been a number of publications focusing on teaching and learning and factors impacting on throughput rate in peer reviewed journals generated by the members of the Education Development Unit. There are also 12 people in the EDU who are writing a book focused on the rationale and activities of the unit. In addition there

is an increasing number of research publications and conference proceedings by Commerce Faculty staff focused on teaching and learning issues.

Increasing the resource-base for teaching development & innovation

In addition to the CEG sessions the Faculty has utilised the recent Distinguished Teacher awardees in the Faculty to stimulate ideas and highlight the importance of educational pedagogy.

The 2011 launch of the College of Accounting saw the initiation of a formal educational handbook for the academic staff in the College.

There were three presentations by Commerce Faculty academics at the inaugural UCT Teaching & Learning conference, all of which form part of the resource base offered to the Faculty and beyond:

Tutor Training

This continues to be a very active component of several departments/sections. There has been an impact on tutor design, as well as facilitation skills and marking skills. Planning focused on a more continuous reflective tutor training process for 2012.

Leadership to other faculties/universities

Some departments/sections/units have had varied engagements with other departments, faculties at UCT, as well as other universities to share practices surrounding curriculum, pedagogy and formation of an EDU.

Commerce Education Group Sessions 2011

| Date | Session | Presenter | Number attending |
|--------------|---|--|-------------------------|
| 8 March | To what extent are we able to actively engage in providing cutting edge teaching and learning environments with the institutional research demands? | HODS | 41 |
| 15 March | Teaching and learning: The critical balance in effective education. | Mike Vorster | 27 |
| 22 March | Report back on Large Class Teaching Project | Tessa Minter, Shelley Herbert, Ilse Lubbe (Accounting) | 27 |
| 12 April | Challenges faced and strategies used in large-class teaching situations | Jacqui Kew, Jimmy Winfield (Accounting) | 25 |
| 3 May | New approaches to admissions and placement at UCT | Ian Scott (CHED) | 45 |
| 10 May | My experience with teaching undergraduate students to write | Beatrice Conradie (Economics) | |
| 24 May | Combining teaching with research: Experiences with Business Processes and Enterprise systems and the IS Curriculum | Lisa Seymour (Information Systems) | 18 |
| 31 May | From Demonstrating How Much We Teach to Demonstrating How Much Students Learn: An Odyssey of the Mind | Don Woolston (University of Wisconsin-Madison) | 33 |
| 26 July | Starting a course without any examples and students with extremely diverse backgrounds | Ardri Stander (Information Systems) | 23 |
| 16 August | Elevating the status of teaching in a research-led university: drawing insights from a recent trip to Australian universities | Shivani Ramjee (Actuarial Science/Management Studies) | 31 |
| 30 August | Rabble Rousing! Ideas to help foster better learning & understanding | Tim Low (EDU Commerce) | 22 |
| 13 September | Teaching with the Help of Information Technology | Andre Hofmeyer (Economics) | 22 |
| 20 September | Dragging Mathematics Teaching into the 21st Century...kicking & screaming | Jeff Murugan (Mathematics) | 15 |
| 18 October | Case studies as a learning aid in a large class environment | Ryan Kruger (Finance/Management Studies) | 22 |
| 1 November | Harnessing agency: towards a learning model for undergraduate students | June Pym and Rochelle Kapp (EDU/CHED) | 45 |

Undergraduate Education - Health Sciences⁵⁰

This year saw the first undergraduate students' teaching and training at the Saldahna Bay Sub-district site. This was made possible through the acquisition of a house and the appointment of a Site Coordinator and Family Physician at the site to oversee the development of the site. Groups of Health and Rehabilitation and MBChB students rotated through the site. It is an exciting development for the Faculty as it is the first time that UCT students have been offered formal teaching away from the Cape Town Metropole. The site offers students from different programmes in the Faculty the opportunity of living and working together.

This year also saw the further development of the clinical skills programme with the formal opening of the Clinical Skills Laboratory in the Department of Health and Rehabilitation Sciences and the further development of the Pathology Teaching Laboratory in the JS Marais Building. These two developments offer students additional opportunities to hone their skills as clinicians.

The Faculty has in 2011 also sought further opportunities to ensure that our graduates are "fit for practice" by the review and renewal of its undergraduate programmes in both Health and Rehabilitation and the MBChB programmes. This process will continue in 2012.

Highlights

Increasing undergraduate student numbers

The optimal number of undergraduate students occupied our minds this year as we grappled with ways to respond to the Minister of Higher Education and Training and the Minister of Health's call for universities to admit more students into their undergraduate programmes. Extensive discussions took place with all role players in the Faculty and we were able to submit a proposal to the Minister of Health proposing the increase of our intake in the MBChB programme by 20 students in 2012. While this is a very modest number, it has huge implications for staff, physical space, equipment and clinical placements. If resources from the Department of Health are made available the Faculty will consider further increases in numbers.

Review of the MBChB programme

In March 2010, following on meetings in all departments, we had a very constructive workshop of all HODs and course convenors of the MBChB programme. A review of the clinical curriculum was subsequently mandated by the Dean, and a Curriculum Revision Task Team was established. A range of broad proposals were accepted and work begun on revisions. The proposals include the following:

- a review of the sequencing of the last three years of study
- closer links between basic scientists and clinicians
- using the CanMEDS framework as a foundation of a graduate profile for assessment of competencies
- integrating transversal skills and attributes into clinical teaching and assessment in all disciplines. These include professionalism, teamwork, communication, ethics, human rights, evidence-based medicine, and the bio-psycho-social approach
- mapping the curriculum based on priorities according to the national burden of disease
- teaching and assessment of a list of core procedural skills
- a longitudinal case study (years four to six) integrating clinical care with a community-wide approach, and

⁵⁰ This report was put together with the assistance of: Vanessa Burch, Frank Molteno, Cynthia Sikakana, Ariane Spitaels, Jason Stoffberg, Graham Louw, Derek Hellenberg, Geney Gunston, Lorna Olckers, Jennifer Jelsma, Elelwani Ramugondo, Shajila Singh, Steve Reid, Rachel Weiss, Virginia Zweigenthal, Viki Janse van Rensburg, Nadia Hartman, Melanie Alperstein, James Irlam, Delva Shamley, Busayo Ige, Gregory Doyle

- aiming for at least 50% of clinical teaching time outside central hospitals

The plan is for changes to be implemented in the fourth year in 2013, and subsequent changes over the following two years.

Visit of John Hamilton

The Faculty hosted Emeritus Professor John Hamilton from Newcastle University in Australia in 2011. He was on the staff at McMaster when Problem-Based Learning (PBL) was first introduced into medical education. He has since led medical curriculum change in a variety of institutions, establishing PBL and Community-Based Education (CBE) as cornerstones for developing socially responsive medical graduates. He is currently advisor to several governments on health human resource policy, participates in accreditation of medical schools internationally and advisor on medical curriculum change. His visit included a small group discussion with staff coordinating the training of PBL facilitators, a meeting with the Dean and Chair of PHC, respectively, a lunch with Heads of Departments and an afternoon workshop with staff involved in the first three years of the MB ChB as well as relevant Heads of Division. The main focus was challenges and successes of PBL at UCT with Prof Hamilton as discussant. His main message was that PBL can be an immensely enriching learning methodology if combined with community-based education. Students should have early exposure to patients. In addition, they should be studied holistically and in context to enable students to experience the value and necessity of integration across subject matters and professions for a comprehensive approach to patient care.

Review of Becoming a Professional (BP), Becoming a Health Professional (BHP) and Becoming a Doctor

A review of the professional strands in the first three years of the MB ChB was undertaken by the EDU. A multi-method approach was adopted. All course materials and two year-sets of student course evaluations in BP, BHP, and BaDr were analysed as well as interviews conducted with course convenors. The outcome has been the establishment of a number of working groups, each addressing major issues identified in the review findings.

To date, the following has been achieved: modification of the first year timetable to enable the Longitudinal Integrated Clinical Clerkship to commence in first year through to sixth year; closer collaboration between BP/BHP, Family Medicine and Clinical Skills convenors to improve students' generic interviewing skills and history-taking as well as standardising the approach to conducting a three-Stage Assessment across second and third year.

A second group is working on the integration of professionalism into the curriculum beginning with creating a shared understanding and definition of professionalism for the Faculty.

A third group has been tasked with review of the literacies we expect our students to achieve through their studies.

Ad hominem criteria developed for clinical educators

The Faculty this year put in place a team to develop criteria for the ad hominem promotion of clinical educators. These criteria were approved by the Faculty Board and the first group of clinical educators were able to apply for promotion. The criteria will be further improved in 2012.

Video Conferencing

The highlight for 2011 for the Faculty has been the successful acquisition and installation of two mobile Polycom Video Conferencing solutions. These were installed in Vredenberg Hospital and Barnard Fuller Building on Medical campus respectively.

Not only does this equipment allow the Faculty to extend its teaching directly into Vredenberg, aiding near face-to-face communication, but it also enables other forms of collaboration such as remote meetings and the ability to conduct interviews remotely. This in turn has an effect on reducing travelling time and cost spent to get to meetings and reduced travelling cost to interview prospective candidates.

From a teaching perspective, the equipment has numerous benefits which include the following:

- Allows students to spend more time at clinical sites interacting with other professions
- Reduces travelling
- Allows students to view foundational lectures at a later stage when context is more appropriate
- More access to guest lecturers
- Allows frequent communication with students off site
- Allows more frequent access to supervisor / clinical educator for offsite students
- Students are able to stay at remote sites longer

Clinical Platform

Saldanha Bay Sub-District

The Saldanha Bay Sub-District /Vredenburg had its first, fully operational year, as a rural, multi-disciplinary teaching site. Groups of sixth year medical students in their Family Medicine block, fourth year Physiotherapy students, fourth year Audiology students and fourth year Speech and Language Therapy students were placed in the sub-district for four, five or six weeks. In addition, two fifth^{year} medical students and two fourth year Physiotherapy students undertook electives in Vredenburg during 2011.

In 2012 Occupational Therapy students will start to be placed in Vredenburg and in the first block of the year a pilot group of fourth year medical students will do their Public Health-Health Promotion block in the Saldanha Bay Sub-District.

Primary responsibility for teaching the medical students rests with the Senior Family Physician employed by UCT. He is integrated into the functioning of Vredenburg Hospital and has his office there. A Clinical Educator from the Division of Communication Sciences and Disorders spends one day a week in Vredenburg with the Audiology and Speech and Language Therapy students. The Physiotherapy students have been supervised in 2011 partly by the part-time Physiotherapist based at the hospital and partly by another local Physiotherapist in private practice.

UCT has appointed a full-time Site Coordinator in the sub-district who supports and keeps an eye on the students, helps to coordinate their programme including transportation, provides logistical and administrative support to the clinicians who teach and supervise our students, and looks after UCT's house (mini-residence) and the student resource centre. The Site Coordinator has her office in the house.

The UCT house is now able – after minor renovations – to accommodate up to 20 students. A 7-seater vehicle has been purchased and during term-time generally stays in Vredenburg for the students' use. A video conferencing facility has been set up in the hospital and will start to be fully utilised from the beginning of 2012.

Also in 2012 we shall be refurbishing and equipping a room made available to UCT as a rehabilitation centre in the Saldanha Bay Clinic. We shall also be renovating and extending a disused building on the premises of the Hanna Coetzee Clinic to be used as a clinical student learning centre.

Expansion of the clinical platform

Discussions with the PGWC Health Department about the possibility of incorporating the George Hospital Complex (George Hospital and associated district hospitals: Oudtshoorn, Mossel Bay, Knysna and Beaufort West) into UCT's clinical teaching platform are continuing. It is hoped also that it will be possible to start sending groups of medical students to False Bay Hospital for a two-week rotation during their sixth year Internal Medicine block.

Upgrading of teaching facilities at CHCs

Facilities for teaching at primary-level sites are continually being improved. This year saw the opening of a new student learning centre at Hanover Park Community Health Centre (CHC). We also refurbished and fully equipped two rooms (altogether five beds) for students to see patients at the Khayelitsha (Site B) CHC as part of a fourth year

two-week Internal Medicine rotation there. Also we are in the process of setting up a resource centre in the Mitchell's Plain CHC.

Site Coordinators at secondary and district hospitals continue to assist clinicians with administration and oversee the utilisation of resource centres at these sites.

Progression of students

Graduations

In 2011, 295 undergraduate students graduated from the Faculty and entered community service or internship. These were made up of 10 graduates from Audiology, 171 from the MBChB programme, 49 from Occupational Therapy, 48 from Physiotherapy and 17 from Speech Language Pathology.

The pass rate for the final year of the 2010 class was as follows:

- Audiology - 91%
- MBChB – 98%
- Occupational Therapy – 96%
- Physiotherapy – 96%
- Speech Language Pathology – 100%

Staff in all programmes worked hard to achieve these results and maintain the high standards in all the programmes. They are to be congratulated.

Intervention Programmes

- MBChB

The intervention programme continues to support and develop students successfully to the point where they are able to re-join the mainstream medical programme. In 2011 the full class of 42 students passed. The growing numbers of students entering IP at the end of semester one is a cause for concern and a working party is considering options for identifying at the point of registration those students who are at risk of entering the IP. This will allow us to provide support during semester one in the form of extra tutorials for specific subjects.

- Health and Rehabilitation

In 2011, 95% of the 2010 cohort of Health and Rehabilitation IP students successfully re-entered the mainstream. A significant improvement when compared with 86% that returned in 2010. At the same time, a total of 26 new students entered IP in July 2011. This consists of eight CSD students, nine OTs and nine physiotherapy students.

There was a review of the IP courses as part of 2011 curriculum development. Out of all the changes introduced, to improve teaching and learning in IP courses, the technology enhanced learning activities in Anatomy and physiology stood out. There was significant improvement in students' learning of and performance in Anatomy and Physiology. It also provided opportunities for students to practice necessary literacy skills, such as academic literacy, computer literacy, information literacy, presentation and communication skills etc.

IP introduced a risk-factor questionnaire to the first year convenors in Health and Rehabilitation Sciences. The tool was deign in IP and used to help identify students learning strategies and study skills, and subsequently use the findings to better support our students. The first year convenors have adapted the tool and plan to administer it to 2012 first year students.

Number of students excluded

Audiology - 1

MBCChB - 15

Occupational Therapy - 1

Physiotherapy - 3

Speech Language Pathology - 3

Courses where 10 or more students failed

The courses listed below are ones where 10 or more students have failed in 2011 and are repeating the course. The Faculty will continue to look for ways in which to improve in these areas. These may take the form of additional tutorials or other means of support for struggling students.

- AHS2112W – Clinical Sciences
- AHS3078H – Research Methods and Biostatistics
- CEM1011F – Chemistry for Medical Students
- HUB1006 – Introduction to Integrated Health Sciences Part I
- HUB1007S – Introduction to Integrated Health Sciences Part II
- HUB1019F – Anatomy and Physiology 1A
- HUB1022F – Biosciences for Physiology 1A
- HUB2015W – Anatomy and Physiology II
- HUB2017H – Integrated Health Systems Part IA
- LAB2000S – Integrated Health Systems Part IB
- MED4011W – Medicine
- MED5002W – Medical and Surgical Specialties
- PHY1025F – Physics
- PSY1004F – Introduction to Psychology Part 1
- PSY2006 - Research in Psychology

Early Warning System

Test Boards were once again a valuable tool in picking up students in difficulty in 2011. The Test Boards this year were for the first time located in programmes and not the in Student Development and Support Committee. Reports from programmes here below:

Physiotherapy

The Physiotherapy Division held three Test Boards during the year, chaired by the Head of Division. As the Boards were Physiotherapy specific, it was possible not only to identify struggling students, but to spend time identifying required interventions to assist in improving their performance. The April and June Test Boards were particularly useful in terms of 'early warning' and putting necessary support strategies in place.

As the Boards incorporated convenors of service courses, it was possible to get a broad overview of the students' relative performance in the different courses. The need to further harmonise the sequence of teaching in the service courses with the profession specific subjects was identified at these meetings. This led to the formation of a task group to align the sequencing of content, so, for example, Women's Health was not taught in Applied Physiotherapy before it was covered in the Anatomy and Physiology course. This alignment exercise was completed under the direction of the EDU.

Occupational Therapy

The Head of Division chaired all Test Boards. Except for Psychology, all service courses were represented and deliberated along with colleagues in the programme to track student performance, as well as to identify students at risk. Coordinators for first to fourth year classes kept a record of all students who were flagged and followed up on

actions decided on at the board. Flagged students were invited to meet with either the class coordinator or Head of Division in order to confirm reasons for poor academic performance, before appropriate referrals were made to the Faculty Student Support Committee. Where reasons were found to be purely academic or linked to difficulties with comprehending complex concepts in English, senior student tutorial sessions were arranged with tutors, either individually, or in small groups. These tutorials proved highly effective, resulting in all students registered for third year Occupational Therapy, who wrote their final exams succeeding.

MBChB

For Years one to three, there were various Test Board meetings held during the semesters, chaired alternately by the semester one to six Programme Convenors. Test Boards provide a forum for tracking and discussing all components of student performance in an interdepartmental and interdisciplinary fashion. Students identified as underperforming are flagged and invited to meet with the relevant course convenors for academic support or are referred to the Faculty Student Support and Development Committee if difficulties are of a non-academic nature. The Examination Board meetings at the end of the year provide an opportunity for any concerns affecting the academic performance of individual students to be relayed to the convenors of subsequent years so that appropriate ongoing support is maintained.

Communication Sciences and Disorders

The two Test Boards in CSD were held in the middle of each academic semester, which facilitated review of first to fourth year SLP and Audiology students' academic performance across all courses offered by the Division. Students who had failed or were borderline in their performance on the first summative assessment of the semester were identified. There was analysis of the knowledge, skills, attitudinal and other factors (e.g. study skills, time management) contributing to poor performance. Once the factors were identified, strategies to address these were discussed and plans implemented to facilitate improved student outcomes. Tutorials were scheduled to facilitate academic and clinical learning. Students who required health interventions were referred to the Faculty's Student Development and Support Committee. Elements of under-preparedness, which contributed to students' less than optimal performance, were considered and strategies were devised to explicitly address these at appropriate points in the curriculum. As all CSD staff participated in the test board discussions, there was a collective response to the students' needs across all courses in the programme. A limitation of the test board was that the performance of students in Psychology was not available - which prevented identification of students who were not coping, with a consequent lack of support. The outcomes of the end of semester examinations in June and November were very positive for all CSD courses, but poor for second year Psychology course, which is a source of concern - as it negatively impacts on students and their progression through their learning programme. The Division will engage with this matter in 2012 to determine facilitative courses of action.

Student Development and Support (SDS)

The important and progressive achievements in SDS in 2011 were twofold: (1) Streamlining SDS programmes and relocating some of them outside of SDS and to more relevant and appropriate authorities. (2) Inviting other members of staff to run some of the programmes that remained in SDS.

Streamlining SDS programmes & relocation of some programmes

SDS has been running Test Boards since 2001. At the beginning of 2011 they were relocated in the relevant academic programmes. This enabled Programme Convenors or Year Convenors (in the case of MBChB Years one to three) to run the Test Boards and thus monitor the progress of their students. The convenors' reports are under Early Warning Systems.

Until the end of 2010, SDS convened Progress Committees which reviewed the academic and non-academic progress of students who had non-academic problems which were perceived to affect the students' ability to practise as health care professionals. The Faculty decided that it was inappropriate for SDS to convene committees that made important and potentially life-changing decisions on students based on their non-academic issues. Therefore, the processes for

dealing with unprofessional conduct and impairment were refined and new committees were set up to deal with these issues. This worked well and removed any potential conflict in the roles of SDS members.

Until the end of 2010, the Portfolio Manager for SDS was responsible for signing off students who went on Long Leave of Absence (LLOA). Again, the Faculty decided that it was inappropriate for SDS to make the final decision on the granting of LLOA. In 2011, the process was refined so that SDS reviewed the application for LLOA and gave input such as setting up conditions for LLOA. However, the final signing off and granting of LLOA became the responsibility of the Faculty Manager: Academic. This has worked well and removed any potential conflict in the roles of SDS members.

The reviewing and streamlining of SDS programmes enabled SDS to focus on the core function of supporting students; be it on an individual basis or for groups of students. In this regard, SDS recruited some members of staff outside of SDS to act as Clinical Mentors for individual senior students (fourth to sixth year) who need this type of support.

Student Mentor Programme

First year students had the benefit once again of being mentored by their more senior peers. Mentors offered social and emotional support to their “mentees” as they made their adjustment to university. Mentoring was done through small group and one on one contact. Mentees reported finding this support particularly useful in the first semester. Representatives from the mentor group joined the Mentor Programme Planning Committee and played an active role in promoting the work of the Mentor Programme Members of the Mentor Programme Planning Committee including a student representative attended the University Mentoring Indaba at which they presented the FHS mentoring programme. This was received very well and the indaba provided a platform for the sharing of ideas and experiences as well as support across the University.

First Year Student Orientation Programme Report

In 2011, the Orientation Programme Planning Committee focused extensively on the increasing numbers of first year students and the logistical implications of this. The need for a unified and extended faculty-based orientation period was identified and as a result a Transition Programme is being designed and will be implemented in 2012. This means that that first year students will have a formal programme that runs throughout the year and addresses the ongoing challenges of adjusting to university. This programme will be supported by the University’s First Year Experience group.

Staff Development

Postgraduate Diploma in Health Professional Education

The highlight of 2011 in this area of work has been the approval of the Council of Higher Education to offer the qualification, Postgraduate Diploma in Health Professional Education. As the Education Development Unit (EDU) is a service Unit, the course codes will be carried by the School of Public Health and Family Medicine. Responsibility for all aspects of the Programme, including finance and staffing, lies within the EDU.

Blended learning as the main design feature will enable participation by health professionals beyond the borders of South Africa. An important outcome of this curriculum design choice has been that it has required EDU staff to work across their ‘specialisations’ with the result that the academic staff have to acquire core e-learning application skills and the relevant PASS staff have to strengthen their understanding of the educational theory and principles informing the design and delivery.

Problem-based Learning Facilitator Training

The EDU continues to convene and lead PBL facilitator training for the MBChB Programme. Six days were allocated to training at the beginning and middle of 2011 for 30 facilitators. In addition, a dedicated set of workshops specifically for semester two facilitators following changes to learning tasks were developed.

The EDU continued its contribution to enhancing PBL facilitation quality and capacity by convening monitoring of PBL across semesters two, four and five of the MB ChB Programme. A report is currently being written that will inform training of PBL facilitators in 2012.

Clinical Educators' Short Course

The 18-week course was run again this year for staff from departments of family medicine, nursing, clinical skills laboratory, psychiatry, physiotherapy, speech and audiology clinical educators; including physiotherapists, speech and hearing therapists from Victoria and two Military hospitals – clinicians who are responsible for rehabilitation students when university staff are not there for their weekly sessions and lastly members from MSF in Khayelitsha.

New Academics Orientation Programme

The EDU conducted a needs assessment across all departments in the Faculty in regard to orientation and development in education of new clinical appointees as well as the piloting of two parallel sessions at FHS campus and Red Cross Hospital. Based on the needs assessment, the EDU put together the New Academics Orientation Programme for the Faculty.

It is important to note that this programme does not seek to replace NAPP but to augment it with faculty-specific orientation, particularly in relation to the new philosophy and approaches to curriculum development. In addition, clinicians who are joint appointees of faculty and PGWC require a more applied version that fits within their working hours.

Changes to courses and assessments

Biomechanics

The review took place as result of the high failure rate in first year physiotherapy. The final outcomes of the review process were the implementation of a newly structured Biosciences curriculum that resulted in an improved pass rate and obtaining sequential conceptual alignment between concepts in professional courses in Physiotherapy and Occupational Therapy and the Anatomy and Physiology components of the Human Biology course for implementation in 2012.

Clinical Skills

Following the review of the BP/BHP/BaDr courses, several strategies were developed to strengthen the integration between the Integrated Health Sciences (IHS), Family Medicine, Clinical Skills and Languages courses:

By moving some content ('Taking a biopsychosocial history') to the first year BHP course, Clinical Skills teaching is closer aligned with PBL cases. The first year content is still taught by Clinical Skills nurse educators and was adapted to build on the generic interviewing skills taught in first year in BP/BHP.

To strengthen the PBL process a Basic Sciences oral examination station was introduced to the BaDr OSCE in second year, with a focus on the science that underpins clinical findings learnt in Clinical Skills. The examiners are IHS and Human Biology lecturers, making it a truly integrated OSCE.

The wording regarding 'Taking a biopsychosocial history' in the Clinical Skills student handout was changed to match the framework used in Family Medicine. Students have a joint Family Medicine/Clinical Skills/Languages session at the CHC in third year.

The Skills Lab partnered with Languages to provide translations and supplementary texts for the invasive skills (IVs, catheterizations) in third year.

In order to strengthen the multidisciplinary approach, third year students spend a day at the Western Cape Rehabilitation Centre interviewing patients in wheelchairs and another day working in a CHC injection room with clinic nursing staff.

Becoming a professional and becoming a Health Professional

The year was the tenth year of BP and BHP. While many changes have taken place over this period, the focus in 2011 was on the introduction of e-portfolios for the engagement with BP/BHP related topics and the extension of reflective practice. This had the benefit of small group facilitators being able to provide more immediate feedback to students as well as requiring students to engage with their academic texts on an ongoing basis.

Assessment in BP/BHP is the focus for review in 2012.

Disability and Primary Health Care

Review of the course *Disability and Primary Health Care* for the second year level was completed and recommendations regarding course structure were implemented. With this multi-professional course, student learning opportunities focus on the primary health care approach to frame all health interventions. The course aims to contribute to graduates who will be able to provide socially responsive and equitable health care to all populations in the province and nationally.

Primary Health Care Elective

Fifth year medical students undertake a four-week elective within the SADC region, in order to enhance their clinical or research skills and their understanding of the PHC Approach in the “real world”. The Faculty provides subsidies to incentivise electives in rural hospitals, as these contexts often provide an excellent learning opportunity and may encourage more students to work in under-served areas in future.

Students write reflective reports on their clinical activities and their observations of the PHC principles in practice, and are also assessed by an on-site clinical supervisor. Most students describe their electives as excellent opportunities to develop their clinical competencies, to deepen their understanding of themselves as doctors, to develop empathy with their patients, and to experience the inequities of health care and the relevance of the PHC Approach in the South African setting:

Online Assessments

The focus in 2011 was to standardise the different aspects of online assessments run in the Faculty as much as possible. This included making changes in the booking of computer lab space and well as updating the Faculty Online Assessment policy. An increased awareness of the importance of security led to the initiation of two projects with ICTS to ensure online assessments are delivered more securely than before. The first project ensured one could specify which computers are allowed to access a specific online assessment. The second, that students are only able to access the assessment and not any other programme, the internet or their email.

Other changes to the policy included defining the processes involved in publishing an assessment, a guide for invigilators, compliance with UCT’s Exam Policy and the importance of communicating with ICTS and Vula Helpdesks to ensure that assessments run optimally.

Another change made as a result of a 400 T/F MCQ failing the Faculty Assessment Policy was updated to include ensure that assessment formats which were not run formatively during the year at least once, cannot be included in the final examinations.

Assessment

In moving towards a faculty MCQ Bank, the Assessment Committee is currently working on a systematic blueprinting of each discipline’s course content in order to create a central taxonomy. The Centre for Education Technology (CET) is still busy with developing software that support the Extending Matching Item format and it should be operational in early 2012. MCQ item writing workshops were done for some Health and Rehab courses.

MBChB Exit skills OSCE

The Faculty introduced an Exit Skills OSCE for final year MBChB students in 2011 as a pilot. Nine stations of basic procedural skills were assessed. Students demonstrated skills such as writing out a death certificate, resuscitating an adult, resuscitating a child and other such skills that they would be required to perform in their internship. Students

who failed any of the stations were required to attend remedial lessons and then perform the test again. The Exit Skills OCSE will become part of the assessments in the final year of the MBChB programme.

Research

First Year Experience project

First year success is vital in the context of a scarcity of skills and in determining the quantity and quality of graduate outcomes (Scott, 2007). This project forms part of an ongoing effort to create an enabling institutional environment and to improve both the general student experience and the quality of student learning, thus enhancing the quality and profile of UCT's graduates.

Data was gathered, by means of a questionnaire that included both quantitative ratings and qualitative comments, from first year students in the Faculty of Health Sciences (audiology, medical, occupational therapy, physiotherapy and speech and language pathology students). Questions related to the following four areas of student experience and satisfaction:

- faculty environment
- social adjustment
- personal growth and development
- academic adjustment

Student participation in the research project was voluntary and anonymous.

Analysis of the results of the study should provide evidence for the type of intervention necessary to improve the experiences of first year students in the FHS at UCT. Research findings from the pilot study were presented at the 24th International Conference on the First Year Experience in Manchester, in June 2011 (*Adjustment issues for first year students in a diverse, multi-professional Health Sciences faculty*).

Education Research Day

The EDU organised and held a successful FHS Education Research Day on 24 May. More than 50 staff members attended. In total there were 14 presentations in three parallel sessions, with two excellent presentations by students. Prizes were allocated for the best presentations.

Undergraduate Research Day

The third annual undergraduate research day- instituted to contribute to a culture of enquiry and research amongst UCT health sciences students - was a highlight of the academic year in 2011. A record 53 abstracts were submitted for consideration for the event. Three students presented at the Pfizer University of KwaZulu-Natal national undergraduate research competition, 12 presented oral presentations and a further 9 prepared poster presentations. The event was graced with music from a group of health sciences students and this contributed to the fantastic atmosphere of work that was showcased. The day was supported by enthusiastic and committed academics who judged the presentations and reviewed abstracts, and great support staff who helped make the day a great success. Prizes were won by students from the medical and the health and rehabilitation programmes, with pre-clinical medical students scooping the top awards for the oral and poster presentations. Other prizes went to Physiotherapy students and to med students who did self-initiated research. As one student remarked, "*the day.. was wonderful*".

Faculty of Engineering and the Built Environment

The Faculty of Engineering and the Built Environment (EBE) at UCT offers a wide range of professional undergraduate and postgraduate programmes, connected to key arenas in the commercial and industrial activity in South Africa. The Faculty is somewhat unique in its in-house academic development capacity – with 8 Academic Development Lecturers (ADLs) each working in a particular department to strengthen teaching and learning in the undergraduate programme; the main focus being on students from educationally disadvantaged backgrounds. During 2011 significant progress was made on a number of fronts in terms of improving our capacity and action around teaching and learning. These are addressed below.

Strengthen governance & structures of Teaching and Learning

The Faculty has two high level committees working in the arena of Teaching and Learning: the Undergraduate Planning and Administration Committee (UGPAC); and the Academic Development Committee (ADC). These committees are chaired by a Deputy Dean (Undergraduate) and an Assistant Dean (AD), respectively, and work closely in tandem. The UGPAC is focused on maintaining the core administrative functions around teaching and learning while the ADC is tasked to focus on innovation and improvement. The ADC significantly restructured its meetings in 2011 to be able to focus on key innovations and to interface more readily with university developments in both AD and teaching and learning.

Strengthen the leadership capacity for Teaching and Learning

The Assistant Dean (AD) is a relatively new position in the Faculty. In 2011 A/Prof Jenni Case took up this position, herself an ADL. Working closely with A/Prof Neil Armitage, the Deputy Dean (Undergraduate), these two positions have been able to strengthen the focus and capacity around teaching and learning leadership in the Faculty significantly. Working through the two committees represented above and reporting at the Faculty EXCO as well as the DAC, these positions have allowed for an integrated and strengthened approach.

Increase the resource-base for teaching development & innovation

As noted above, the Faculty has a strong resource base, with 8 ADLs deployed across the departments. During 2011, working with the Assistant Dean (AD), this team has been working towards a more strategic collective position, in order to have a wider impact on teaching and learning in the Faculty. In particular, we started to work towards a better strategy for sourcing external funding to supplement our capacity in teaching and learning. A number of proposals were developed and are in progress. Existing Xstrata funding was renewed and continues to support the second year field trip in Chemical Engineering, as well as a wide range of other AD related activities across the Faculty.

Address barriers to improving throughput

This is a core objective in the AD work across the Faculty, working alongside our established teaching and learning structures. The Faculty has committed itself to improving the graduate throughput for engineering programmes to 75% of its intake from its current base of around 63%. A key strategy remains the well-established ASPECT programme which attempts to address on difficulties at the first year level experienced by students from disadvantaged backgrounds.

In the mainstream programmes, there is an extensive programme involving first year students. The flagship is the mentoring programme convened by the Faculty Psychologist. Other interventions include Saturday tutoring, as well as the Orientation Programme. In 2011, the latter was somewhat reworked to focus more strongly on the academic aspects of orientation.

The UGPAC undertook significant work in 2011 to streamline processes of concessions and readmissions. This is aimed towards building best practice across all programmes, increasing transparency and fairness, and aiming towards supporting student progress through the curriculum. The Deputy Dean (Undergraduate) also coordinated intensive work in 2011 towards developing a better admission system towards selecting students with strong potential for success, as well as meeting equity targets in the intake.

Working under the auspices of the ADC, two departments have run summer term courses for repeating students. In 2011, it was only Civil Engineering that continued this practice, while Chemical Engineering noted improved performance within the semester in second year, and started planning for winter term work in third year.

In 2011 the focus on curriculum development in the Faculty intensified involving every department. At a faculty level, the Deputy Dean (Undergraduate) convened a working group to look to address core issues, focusing especially in the first instance on Engineering Mathematics.

Improve the physical teaching environment

Significant work took place during 2011 on the conceptual design for the new learning studios in connection with the New Engineering Building (NEB) – to be situated in the proposed new Teaching & Learning Building (TLB).

Drawing from current best overseas practice, we are planning for customised spaces which facilitate mixed mode teaching – which is the most suitable approach for teaching disciplines like engineering which contain both theoretical as well as practical aspects.

Professionalise teaching

During 2011 the criteria for ad hominem promotion were substantially reworked to include a more sophisticated position on how we measure and rate teaching performance. Excellent teaching performance is now required for promotion to senior levels in the Faculty.

Create an enabling environment for improving teaching and learning

The South African Society for Engineering Education (SASEE) was formally launched at its inaugural conference in August 2011. A/Prof Jenni Case was the founding President of SASEE, whilst A/Prof Brandon Collier-Reed is on the Board. A number of EBE colleagues both attended and presented their work at the SASEE conference. There was considerable national enthusiasm towards this initiative.

Strengthen research-enriched teaching

The Centre for Research in Engineering Education (CREE) is a long established centre in the Faculty, focusing on promoting education research in both science and engineering programmes. A significant group of academics in the Faculty are actively involved in CREE - many of whom are not in AD posts. CREE has become an intellectual hub in the Faculty which offers the theoretical and conceptual underpinnings of our teaching and learning work. It runs general interest seminars which are aimed at bringing new, research-based teaching approaches to the attention of academics.

Promote innovation in teaching and learning

The CET grants have provided strong incentives and support for teaching innovation over a number of years. For example, Tom Sanya from Architecture recently developed innovative course materials using a CET grant.

Law Faculty

Introduction

The Law Faculty is a relatively small faculty in terms of student numbers, but offers a large number of undergraduate courses (51 compulsory and optional courses) as well as post-graduate courses (56 courses in various sub-disciplines) courses to a wide variety of students who come to their studies via very different routes. Students registered for the undergraduate LLB degree can be either recent high school graduates who are taking LLB as a first degree; UCT students registered in other Faculties who combine law studies with a humanities or Commerce degree; and students who had completed an undergraduate degree and are doing their LLB as a second degree. Some students are also admitted as part of an Academic Development Programme (ADP) and are required to attend intensive ADP classes linked to specific undergraduate courses offered in the Preliminary Year of study (but not in later years). Often these students, who are at different stages in their academic development and in their lives, sit in the same undergraduate classes. This presents a challenge to lecturers teaching in the LLB degree.

Strengthen governance & structures of Teaching and Learning

The Law Faculty has no committee structure exclusively dedicated to teaching and learning, but the Academic Planning Committee (APC), chaired by the Deputy Dean for LLB, attends to teaching and learning questions related to undergraduate students while the School for Advanced Legal Studies (SALS) Committee, chaired by the Deputy Dean for Graduate Studies, attends to teaching and learning questions relating to postgraduate students. In 2011, the APC decided on the formation of a Teaching and Learning Working Group to focus more directly on teaching and learning questions. If it works well and contributes positively to the enhancement of the quality of teaching and learning in the Faculty, a formal sub-committee of APC will be formed.

Strengthen the leadership capacity for Teaching and Learning

The newly appointed Deputy Dean (appointed in January 2011), took steps - through self-study and engagements with colleagues from other Faculties - to improve his own theoretical and practical knowledge about teaching and learning challenges in the Faculty. The Dean also provided advice and assistance to help build the capacity of the Office of the Deputy Dean to take a leadership role in promoting the importance of teaching and learning in the Faculty and to address challenges relating to teaching and learning in the Faculty.

Increase the resource-base for teaching development & innovation

In 2011, the Law Faculty, with the assistance of its Academic Development specialist, took steps to restructure and improve the ADP Programme, linking the ADP assistance more closely with the content of the work taught in individual courses by ensuring the close involvement of the relevant course coordinators. We also began to produce written reports on ADP courses, providing feedback to course coordinators about the ADP programme and creating a data-base on which future ADP lecturers will be able to rely.

Address barriers to improving throughput

In 2010-2011 the Law Faculty began to identify “killer courses” which in the past have impacted negatively on the throughput rate of LLB students. Two particular courses were initially identified, namely Constitutional Law (offered in the Prelim year) and Law of Delict (offered in the intermediate year). Heads of Departments met with course convenors and other lecturers involved in these courses to identify the problems and agree on solutions.

In Constitutional Law several problems were identified. Some possible causes for the lower than desired pass rate cannot be addressed easily, or if they are addressed might well have an effect on pass rates in other courses. Thus lectures in Constitutional Law are scheduled for every Monday to Wednesday at 8am (which leads to lower class attendance), but changes to the time-table would affect attendance in other courses. It was nevertheless agreed that:

- there was a lack of co-ordination between the various lecturers who teach in the course leading to “mixed signals” being given to students about what was expected in the course;
- as a result an unrealistically long list of text were being prescribed for study by students;
- the tutorial programme was not well-coordinated to ensure that skills required for successful completion of the course are progressively built through a succession of tutorial assignments of increasingly complex nature;
- insufficient or inappropriate feedback was sometimes provided to students in assessment of their assignments and June test;
- there was not enough focus on the skills to solve practical legal questions, a skill required for the successful completion of the end of year examination.

Steps were taken to address all of the above: the prescribed reading list was culled and updated; regular meetings between lecturers were instituted to ensure better co-ordination; new requirements for the construction of tutorial assignments were imposed to ensure a much stronger skills component in tutorial exercises and assignment; better briefing of Teaching and Research Assistants (who take most of the tutorial classes) were introduced; more detailed feedback (as well as the provision of some model answers) were produced and posted on Vula. It is always difficult to determine why student performance improves, but after these interventions, there has been a marked improvement in the pass rate in this course in 2011 as the table overleaf indicates:

| PBL2000W: CONSTITUTIONAL LAW | | | | | | | | |
|-------------------------------------|-------------|--------------|---------------|--------------|---------------|-------------|-----------------------|--------------|
| | PASS | % | FAILED | % | ABSENT | % | DEF. EXAM (UP) | % |
| 2009 (218 students) | 123 | 56.4% | 52 | 23.9% | 5 | 2.3% | 38 | 17.4% |
| 2010 (198 students) | 111 | 55.8% | 58 | 29.1% | 7 | 3.5% | 22 | 11.1% |
| 2011 (183 students) | 147 | 79.9% | 30 | 16.3% | 3 | 1.6% | 3 | 1.6% |

In the law of Delict, an Intermediate year compulsory course, in 2011 the lecturers divided the 18 classes for the semester into clusters of two lectures each: an introductory lecture and eight double classes focusing on an individual topic. For each topic a student received compulsory readings averaging 40 pages per topic. These readings had to be studied in advance of the classes discussing them. To ensure that this was done, the classes on each topic commenced with a 10-minute class test, examining the students on the reading for that topic. Three of the tests written by a student, randomly selected, were marked. They contributed 15% to the student's overall mark for the course. However, unless a student wrote at least six of the eight tests, he or she forfeited the entire 15%. Once again, the solid evidence that this intervention affected pass rate is not definitive, but as the following table shows an improvement did occur.

| RDL2003H: DELICT | | | | | | | | |
|-------------------------------|-------------|--------------|---------------|--------------|---------------|-------------|-----------------------|-------------|
| | PASS | % | FAILED | % | ABSENT | % | DEF. EXAM (UP) | % |
| 2009 (152 students) | 99 | 66.1% | 49 | 32.2% | 2 | 1.3% | 2 | 1.3% |
| 2010 (182 students) | 121 | 66.5% | 52 | 28.6% | 2 | 1.1% | 7 | 3.8% |
| 2011 (169 students) | 129 | 76.3% | 28 | 16.6% | 6 | 3.6% | 6 | 3.6% |

Improve the physical teaching environment

Steps were taken in 2011 to install audio and video recording equipment in large teaching venues in the Faculty to enable the recording of lectures (placed on Vula). This led to several lecturers starting to make use of the recording of lectures in 2012. Students in these courses (including Constitutional Law and Foundations of South African Law) now have access to lecture recordings on Vula.

Create an enabling environment for improving teaching and learning

The Law Faculty rules for promotion were changed and now places more emphasis on the need of academic staff to excel in teaching and learning in order to qualify for ad hominem promotion and this new system was first applied in 2011. The following criteria are used:

Teaching & learning

A good teacher uses communication skills, innovative thinking, research and/or developments in the field to contribute effectively to student learning, as a teacher of undergraduates, a teacher of postgraduates, and/or a supervisor of postgraduate research projects. Evidence of effective teaching could include: strong student evaluations, favourable external examiners' reports; the number and range of research projects supervised at senior undergraduate, Honours, Master's and Doctoral level; effective learning materials; use of innovative teaching methods; participation in curriculum and/or programme design; involvement in the development of new course materials; the use of teaching material by other teachers; invitation to serve as an external examiner at other institutions; being nominated for or receiving the UCT Distinguished Teacher Award or any other teaching award.

Academic staff are expected to undertake an appropriate teaching load as determined by Faculty and department. Staff are expected to meet the Teaching and Learning Charter, and using a teaching portfolio as evidence, demonstrate effectiveness as a teacher, reflecting on and responding to lecturing evaluations by both students and external examiners. At higher ranks there is an increased expectation of effective postgraduate teaching and supervision, where opportunity exists. See, however, above (I Research) for flexibility of scoring between Teaching and Research categories in special circumstances (possibly regarding heavy service-course teaching).

| | Points | TEACHING & LEARNING |
|--------------------------|--------|--|
| | 90-100 | Consistently excellent LLB/undergraduate teaching evaluations from students, external examiners and peers and/or an outstanding reputation for teaching at LLM level and/or leading role in academic initiatives. Leader in initiatives to disseminate scholarly or professional knowledge to groups beyond UCT. Plays a leadership role in the development of undergraduate and/or postgraduate teaching and curricula. Invitations to lecture at other universities. Wide experience as external examiner or as an examiner of Master's and Doctoral theses. Well established reputation among staff and students for excellence in all aspects of teaching, including curriculum development, reflecting research and professional activities in teaching and success in Master's and Doctoral supervision. |
| | 80-89 | Very good LLB or undergraduate teaching evaluations as indicated above and/or a very good reputation for teaching at LLM level. Plays a major role in undergraduate and/or postgraduate teaching and supervision. Known by staff and students as a dedicated and effective teacher, including post-LLB supervision. Active in initiatives to disseminate scholarly or professional knowledge to the profession and other groups beyond the campus |
| SASP Professor | 70-79 | Effective teacher in Faculty, including (where appropriate) at post-LLB level, with consistently good teaching evaluations. Demonstrates effectiveness as a supervisor of post-graduate students. Demonstrates leadership in curriculum development and design |
| SASP Associate Professor | 60-69 | Effective teacher in Faculty, including (where appropriate) at post-LLB level, with consistently good teaching evaluations. Demonstrates effectiveness as a supervisor of post-graduate students and/or contributes actively to academic development initiatives. |
| SASP Senior Lecturer | 50-59 | Effective teacher in Faculty. Contributes actively to academic development initiatives. |

| | | |
|---------------------------|-------|--|
| SASP Lecturer | 40-49 | Effective teacher in Faculty. |
| SASP Entry-level Lecturer | 20-39 | New staff member (e.g. entry level appointment as lecturer) starting out on a teaching career with little experience but demonstrating enthusiasm and a willingness to learn, OR, for established members of academic staff, teaching evaluations are not enthusiastic or barely satisfactory, and/or seldom contributes to academic development activities. Clearly room for improvement of his/her teaching performance. Not known in the University as a teacher. |
| | 1-19 | Teaching evaluations are not good and/or no contribution to academic development activities. His/her teaching is not satisfactory. Largely ineffective as a teacher by temperament or general inadequacy. Does minimum teaching required by contract. |
| | 0 | Totally inadequate and ineffective as a teacher of undergraduate and postgraduate students. |

Staff members applying for promotion are required to furnish a reflective teaching portfolio with their application for ad-hominem promotion.

Professionalise teaching

All new academic staff appointed in the Law Faculty are encouraged by Head of Departments and the Dean to attend the New Academic Practitioners Programme (NAPP), offered by CHED, and in 2011 all newly appointed lecturers and senior lecturers attended this course.

Faculty of Humanities

The Faculty's size, with approximately 6000 students enrolled in 2011, and the broad spread of its departments across Arts, Social Sciences and Performing/Creative Arts disciplines, provides students with a unique opportunity to select a programme of study from a wide range of options. At the same time, the size and complexity of the Faculty presents particular challenges for teaching and learning. The different kinds of degrees offered by the Faculty represent a broad range of teaching and learning styles. Programmes in the Performing/Creative Arts and in specialised qualifications such as Social Work are highly structured, requiring few curriculum decisions from students, and occurring in small cohorts whose teaching is more intense, and whose students can be monitored more individually by the teaching staff. The general degrees, which represent the bulk of student registrations, are far more diverse; the large number of students, the relatively open programme structure and the traditional autonomy of departments make unified interventions and teaching practices more challenging. Undergraduate teaching and learning in the Faculty is, however, overseen by the extremely active and robust Undergraduate Education Committee, which regulates curriculum innovations at the level both of student experience and of faculty quality assurance. Moves towards a more consistent delivery of teaching and learning have also been reflected in initiatives such as faculty-wide tutor training offered by the Academic Development Unit, and the development of the Faculty plagiarism policy which attempts to create parity in departmental responses to the problem.

Student support

2011 has seen the continuation and further development of student support initiatives started in 2010, not just in the academic development extended-degree programmes, but in broadening academic and psycho-social support across the mainstream. The size of the Faculty, breadth of disciplines represented and diversity of the student body,

particularly in terms of schooling and preparedness, necessitate gradual development of projects which can be piloted and refined before being extended across a broader student base.

Emphasis in the extended degree programme is gradually shifting away from a focus upon forms of support for students who have entered UCT via non-traditional routes, to a focus on success for all undergraduate students, recognising issues of adjustment and under-preparation across a wider constituency. The programme will continue to support students from previously disadvantaged backgrounds, while at the same time extending its efforts to broader issues of success and throughput.

Admissions issues are being addressed by the Faculty's recruitment officer in the wannabe@humanities project, in which the Faculty works with Matric students from a selection of disadvantaged schools, introducing them to the university and admissions process via workshops and the "Student for a day" project, and providing them with student mentors. This programme is an important index of faculty recruitment's focus on increasing access for disadvantaged students.

Work on the Faculty's orientation programme has become increasingly integrated with the university's First Year Experience (FYE) during the course of 2011. The ongoing refinement of the programme and of general forms of student support has been within the FYE framework, and has been consciously moved towards an enhanced student experience, addressing transition shock, and the conscious development of a student culture which normalises rather than stigmatises the idea of accessing services or seeking help. 2011 saw the pilot of an ongoing orientation programme which was a first at UCT, extending information and workshop sessions across the first half of the first semester on a weekly basis. This allows more space to focus on particular academic and psycho-social issues and university services. This was an experimental programme, and student feedback requesting that particular topics be addressed at particular points in the year is encouraging refinement and development of the programme, which in 2012 was extended across the entire semester. A broad-based consultation process also underpinned the integrating of orientation materials into a Humanities Guide, covering both academic issues and university services, and consolidating and packaging vital information in a more accessible fashion.

The spatial relocation of the Faculty's Academic Development Unit into its own unified premises in 2011 was emblematic of the increasingly coherent role the unit is playing in teaching and learning issues. While the focus of the unit is still on the 150-200 students in the extended degree programmes, the team's awareness has extended to a more generalised idea of student support which covers both the vital constituency of students struggling at the bottom end of the mainstream cohort, and the higher-achieving students whose marks could be improved sufficiently to qualify for access to postgraduate study. Awareness of this latter area for support has been served by the ADU's 2011 mentorship initiative, which recruited academics in the departments of Psychology, Sociology, Historical Studies and Social Anthropology to advise and mentor promising students from disadvantaged backgrounds.

At first year level weaker students are supported by the augmented tutorials which were started in English, Film & Media, Religious Studies and Psychology in 2010 (or in some cases earlier) and which have gained traction over the course of 2011, both in terms of departmental and AD investment in additional course materials, and in the addition of a version in the large first year Politics course. A similar version in the equally large Sociology classes was in planning stages during the latter part of 2011. These augmented tutorials were opened to non-EDP students in 2011; identifying students in need of the extra courses is an important aspect of the initiative, and are ongoing.

Peer mentorship initiatives in the Faculty are increasingly seen as an important aspect of student support, although in this Humanities still lags behind the established programmes in other faculties. Humanities mentorship is still located in the Extended Degree Programme, and in small initiatives on the Michaelis campus. While discussions on the feasibility of broadening the availability of mentors to mainstream students were initiated in 2011, the lack of available staff time and funding for this precluded the development of programmes during the course of the year. This contributed to the sense of an urgent need for an expanded AD staff cohort which became apparent during 2011, leading to the application to the Vice-Chancellor's fund for two additional lectureships and a psycho-social post which were granted in 2012.

Teaching quality

Overall, the graduation of Humanities students with excellent degrees, the quality of the year-end exhibitions in the performing/creative arts, and the strength of the Faculty's postgraduate cohort are evidence of a high level of teaching commitment and skill in the Faculty. 2011 saw two Distinguished Teachers recognised in Humanities, Associate Professor Mike Campbell in the South African College of Music, and Dr. Susan Levine in Social Anthropology. Award speeches during the graduation ceremony noted the ability of both these lecturers to remain accessible to their students while adeptly mediating the structural and theoretical aspects of their disciplines. Professor Campbell founded and leads the Jazz Studies programme in the College of Music, and his teaching is notable for its ability to allow students to reinforce their creative experience of jazz music with the systematic. Dr. Levine is a pioneer in the field of visual anthropology in South Africa, and is described as bringing social responsiveness to her discipline, reaching students via their own experience, and offering them tools which allow them to mediate their engagement with the world.

Discussions in 2011 led to a structural change in the Faculty's departmental organisation, and the establishment of the School of African & Gender Studies, Anthropology and Linguistics. The several departments and sections involved in this synthesis deliberately conceptualised their merger in terms of the participants' perception of parallels and synergies in their research interests, focusing on the production of social, political and cultural knowledge within the African continent and the global South. These commonalities and interactions were also seen as a source of exciting interdisciplinary possibilities in shared curriculum development, and opportunities for joint research-led teaching will be a focus of energies as the new school matures.

In other areas of the Faculty, the development of research interests among staff as well as pedagogical concerns have led to extensive re-curriculumation in the Historical Studies major, and in the Politics Department's new offering in International Relations, a sub-discipline which is receiving increasing global attention. The first year options in Mandarin opened in 2010 in the School of Languages were extended to second year offerings in 2011, and the School also developed a new major in African Languages and Literatures, filling the significant gap which previously existed in study possibilities for first-language Xhosa speakers. These kinds of initiatives were supported by the Faculty's earmarking of funds specifically for curriculum innovation, which led to the funding of departmental away days for several departments including History and Sociology. Discussion also continued with the Science Faculty towards opening up further Science majors to Humanities students, to complement the several already recognised. This is intended to provide increased choice in particular to high-achieving students with balanced Science/Humanities interests.

Annexure 3: Progress report from Centre for Higher Education Development⁵¹

This brief report does not set out to give a comprehensive account of CHED's achievements and challenges in 2011, but to highlight some activities under the agreed focus areas of the Teaching and Learning Committee.

Address barriers to improving throughput

Following a successful colloquium on the First Year Experience (FYE) in 2010, a task team established by the Senate Academic Planning Committee explored what such a project could aim to achieve at UCT, and what form or forms such an initiative could take. Broad agreement on a range of issues was reached, which reaffirmed the critical role of the overall student first year experience in influencing ultimate success or failure. It was also agreed that while a range of factors beyond the strictly academic strongly impact on performance, one of the most urgent needs that could be addressed in the short term was that of developing some kind of 'early-warning system' that would provide in indication of student performance across subjects so that timely interventions could be provided.

The task team concluded its work by recommending to the Senate Executive Committee that UCT formally establish a multi-faceted project to enhance the first-year experience (FYE) for all its students. In a report presented at the Senate Executive Committee (Kapp 2012), based on work conducted in 2011, it was argued that the FYE project should:

- adopt a holistic approach to student development, linking initiatives that respond to students' academic, affective, social, material and information needs
- be University-wide
- be centrally-coordinated but also involve effective structures in the Faculties, where much initiative and implementation will be needed
- build on existing interventions wherever possible
- provide for a major role for students – from representative bodies, led by the SRC, and senior students with roles as tutors and mentors – in policy-development and implementation
- make use of an appropriate range of information and communication technologies, including Early Warning Systems with an emphasis on effective follow-up

In late 2011, Associate Professor Rochelle Kapp (ADP, CHED) was seconded to plan and establish the FYE project over the next two years. The FYE project is organisationally located as a special project in CHED.

Creating an enabling environment for improving teaching and learning

One of the most exciting initiatives aiming to enhance the teaching and learning environment is the lecture recording project, led and managed by CHED's Centre for Educational Technology. The project aims, primarily, to provide opportunities for students to replay lectures or parts of lectures in their own time, thereby consolidating and extending learning. The possibilities for lecturers of using this opportunity to reconceptualise how lecture periods could be used – for example by using this 'face-to-face' time for interaction and moving some of the information load to serve as a pre-recorded resource – remain to be explored. At this stage, however, evidence suggests that students are taking advantage of the technology to view the material, and demand for increased coverage is posing something of a challenge for the institution and CET, highlighting as it does the adequacy of the physical infrastructure and equipment in lecture theatres and classrooms.

Strengthening leadership capacity for Teaching and Learning

The ADP departmental review in November 2010 strongly supported the ADP's stated aim to shift resources as far as possible to strengthen collaboration between ADP and the mainstream. It was emphasised that this should not mean a downsizing of efforts to contribute to (and in many cases run) effective courses at the first year level to ensure success

⁵¹ Contributed by A/Prof N Yeld

at this level, but that where possible, resources should be allocated to strengthening more systemic responses to challenges.

It is increasingly being recognised that meeting the ‘shape and size’ ambitions of UCT’s policy will need concerted effort and skilled leadership at faculty level. The ADP Education Development Units in Commerce and Health Sciences have demonstrated their potential to assist faculties to meet educational challenges, especially when ‘ownership’ and effort is arranged as a joint venture between the host faculty and CHED. It is in these faculties that the earliest teaching and learning committee structures emerged, and with the establishment of the Senate Teaching and Learning Committee to set the parameters, it is believed that effective leadership and governance at faculty level will be easier to achieve.

Professionalising teaching

In many ways, the great majority of staff in CHED are engaged in professional staff development. Members of the Language Development Group, for example, work closely alongside colleagues in mainstream courses in the disciplines, designing and assisting with language-related curriculum advice; staff in the extended programmes in faculties design and teach a variety of levels of courses with mainstream collaborators; staff from the Numeracy Centre work with staff on quantitative literacy issues embedded in curricula; CET staff work with staff on effective use of UCT’s learning platform, Vula, and on issues related generally to using technology optimally in teaching and learning; staff in the Alternative Admissions Project run workshops with staff on using the information yielded by admissions tests; First year Experience staff work with faculty staff on identifying and addressing barriers to learning; and Careers Service staff interact closely with employers and academics on matters related to employability and perceived relevance and focus. All of these activities represent forms of professional staff, development, but are often not recognised as such as they are not formally labelled.

In CHED, HAESDU (the Higher & Adult Education Studies Development Unit) carries formal responsibility for leading a range of initiatives.

HAESDU was reviewed in 2011, and was commended for the high quality of their work. One of the issues raised in their Self-Review Portfolio in relation to their staff development function (they carry in addition responsibility for adult learning) was the capacity of a relatively small unit to meet UCT’s needs. The review panel recommended in this regard that HAESDU should increase their reach by playing a coordinating and leadership role, harnessing the various sources of expertise and capacity in CHED and the institution more widely, rather than attempting to respond as a single unit.

Several staff development initiatives are mounted on an annual basis. These include

- The Learning & Teaching in Higher Education (LTHE) module - a core module of the PDGHE/MEd stream. Although small numbers of UCT staff have completed this module (54 over 10 years, plus 35 non-UCT staff), its impact on participants is considerable in terms of promoting teaching and learning at the departmental, faculty and university level
- The New Academic Practitioners Programme (NAPP). Two hundred and forty five staff have attended this programme, which receives very positive evaluations. However, the programme seems to be attracting only about half of new staff, and the debate about whether attendance should be compulsory for genuinely new staff continues
- The Postgraduate Diploma/Master’s in Higher Education Studies. By the end of 2011, six UCT staff had completed the Postgraduate Diploma and 12 the MEd/MPhil (seven are still continuing). Several staff members also take individual courses for non-degree purposes. Programme is also attended by staff from CPUT and TSIBA

In addition to formal courses, HAESDU supports teaching development in a number of ways. In November 2011, the first Conference on Teaching and Learning was held, attracting 32 presentations, and 200 staff registrations. It is planned that this will become an annual event.

The tutor development programme, initiated in 2007 with the twin aims of improving the effectiveness of tutorial programmes and of providing some support for early stage or potential future academics, was scaled down on the part of HAESDU, partly because faculties have been assuming responsibility for their own programmes, and partly also because of capacity within HAESDU. In 2011 tutor development workshops were held in Humanities, Botany and Zoology. HAESDU co-hosted a Tutor Colloquium, in collaboration with the University of Stellenbosch's Centre for Teaching & Learning, which attracted 68 participants, including several UCT staff members.

One of the main issues impacting on the effectiveness of professional staff development at UCT is the relatively low take up of opportunities on offer. The introduction in 2011 of Teaching Development Grant funds (until 2011 UCT was not considered eligible for such funds by the Department of Higher Education & Training) and the promise of substantially greater levels of funding from 2012 will enable teaching innovations and efforts to be more effectively incentivised, and for greater capacity in turn to be put to developing appropriate and attractive opportunities for staff to enhance their teaching abilities.

Promote innovation in teaching and learning

One of the ways in which CHED has effectively promoted innovation in teaching and learning can be seen in the seminars and workshops run by CET to support the development and use of new teaching tools and processes, and in the highly successful Teaching with Technology grants which have provided seed money and expert support for a number of initiatives across the institution.

Innovations and good practices are now more possible to make public than before, thanks partly at least to the establishment in 2011 of the OpenUCT initiative. This project aims to make freely available as many of UCT's research, teaching and community focused resources as possible to those with internet access. Making such resources accessible and useable is in itself a challenging educational endeavour and this initiative, located in the Dean's Office in CHED with close collaborative relationships with the Research Office, has needed to engage at quite a fundamental level not only with policy, but also with (to give an illustration of the range) different understandings and levels of academic ownership, pedagogic approaches, and software development.

Strengthening research-enriched teaching

The seriousness of the educational challenge facing universities in South Africa today is increasingly acknowledged, and demonstrated by generally low graduation rates in the sector. Research conducted in CHED aims to contribute to meeting this challenge by drawing on, extending and disseminating the body of teaching and learning-related knowledge that has been growing rapidly, both here and internationally, over the past few decades. To this end, many CHED academic staff are developing productive associations with individuals, institutions and scholarly bodies nationally and abroad, and CHED's Centre for Educational Technology is leading the way with linkages elsewhere in Africa.

As the examples below of accredited publications (drawn from the 2011 UCT Research Report currently in preparation) demonstrate, CHED staff are actively involved in researching issues that make a difference in teaching and learning.

- Davidowitz, B. and Rollnick, M. 2011. What lies at the heart of good undergraduate teaching? A case study in organic chemistry. *Chemistry Education Research and Practice*, 12: 355-366
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- McMillan, J.M.E. 2011. What happens when the university meets the community? Service learning, boundary work and boundary workers. *Teaching in Higher Education*, 16(5): 553-564
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Ensuring that research findings impact on teaching and learning constitutes a serious challenge. The readership of scholarly journals tends, in most fields, to be restricted to specialist groups, and so it is necessary to create fora in which findings can be discussed and adopted where appropriate by educators whose academic backgrounds are not in education. CHED has arranged a number of such occasions (Teaching and Learning conferences, seminars, and workshops), but it remains a challenge both to broaden and to assess the impact of our research.

Annexure 4: Academic Review Reports⁵²

Introduction

This section provides a summary of the findings of the academic reviews conducted between August and November 2011. Four academic reviews were conducted in 2011 and these are: Religious Studies (REL), Molecular & Cell Biology (MCB), Higher & Adult Education Studies and Development (HAESDU) and the Centre for Educational Technology (CET). The CET review was a hybrid because of its academic and support service nature.

The main purpose of this report is to highlight positive elements and challenges identified by the reviewers in relation to the core functions of the university namely: Teaching and Learning, Research and Social Engagement. Transformation will also be included since it forms a critical component of the teaching and learning environment. The report will also look at the role of international reviewers and the impact that they have had on the reviews.

Teaching and Learning

A key point emerging from the reports is a high level of satisfaction with the quality of teaching provision by departments reviewed.

Religious Studies

The Department of Religious Studies was commended by the review panel for its engagement with issues of curriculum, the internal coherence of scholarly teaching, rigorous assessment of its courses and the collegial manner in which discussions are being taken forward. In addition, the panel noted the sense of community in the department that extends to the classroom, particularly in the senior undergraduate years. Students also appreciate interest taken in them by senior academics as well as the innovative energy and enthusiasm of postgraduates and younger members of staff who contribute extensively to the curriculum. The REL Department was also commended for its throughput of Ph.D. candidates that is very high. However, the panel noted small numbers of students taking Religious Studies as their major, and sees this as a considerable risk to the department. The panel recommends that the department takes a searching look at its curricula at both undergraduate and postgraduate levels. In particular, the panel is concerned that the undergraduate curriculum was assembled as a list of options rather than a set of offerings imagined as an intellectually cohesive and compelling whole. The panel was also of the view that there was insufficient differentiation between Honours and Master's-level curricula.

The panel recommends that the department debates the possibility of mounting a three-year major and that it devotes time to considering the naming of courses and their description in handbooks, and then formulate a strategy for conveying accurate information about the department's core business to the incoming student body annually.

Molecular and Cell Biology (MCB)

The review panel commended the MCB department for maintaining good pass rates over the review period 2009-2011; and the range, focus and depth of the courses/material covered in the programmes of Biochemistry, Genetics and Microbiology. Also that the content is certainly aligned with the vision of the department to provide a solid

⁵² Contributed by Ms Z Mdledle

grounding in the fundamentals of molecular biology which is delivered by experienced and active research-orientated members of the academic staff. Overall, the department was commended for maintaining a high level of undergraduate teaching albeit somewhat costly in terms of the time spent on lecture development over the period under review. In this regard, it was recommended that the department consider developing a unified component/module that would be compulsory for all second year students and would address the major aspects considered foundational to molecular biology. This course might be best suited to the first semester of the second year.

The concept of developing a fully integrated teaching and learning exercise that has considerable value to the undergraduate/postgraduate transition was also commended by the review panel. A further outstanding feature, contributing extraordinarily to the successful delivery of the undergraduate programme, is the dedication of the team of Scientific Officers and Departmental Assistants. The level of commitment to providing well- resourced practical classes to large numbers of undergraduates and for developing and retaining such a valuable team was commended. Over the review period, MCB had a 100% pass rate in the Honours course. Therefore, despite the comments made around disciplinary specifics and fundamental underpinnings in the undergraduate courses, the Honours students appear to have been well prepared for the rigours of the Honours programme.

In addition, comments from supervisors taking MCB Honours graduates for higher degrees, as well as those from employers of MCB graduates, were all very positive and placed the Honours graduates above those from other 'feeder' institutions. The department was commended on the excellent quality of supervision at the MSc and PhD levels. The comments made regarding the 'employability' of the MCB postgraduate students were extremely complementary about the standard of graduate coming out of the department. A comment made repeatedly by the academic staff was that the undergraduate students were entering the second year in MCB without the appropriate grounding that should have been covered in the first year. The result was that this places considerable pressure on the second year subjects as many lecturers felt it necessary to cover various fundamental concepts prior to embarking on the second year content proper. It was suggested that a way of addressing this would be for MCB staff to have an input in the first year teaching but currently this would massively overburden academic staff with teaching duties. Rather, the review panel thought that an open and amicable discussion with the departments responsible for the teaching at the first year level would go a long way to addressing the issue and be of value to all involved. The panel therefore recommended that MCB met with the Departments of Botany and Zoology, primarily responsible for the first year biology course, with a view to finding a solution acceptable to all with regard to the biological principles covered in the first year.

Higher & Adult Education Studies Development Studies (HAESDU)

The reviewers were impressed by HAESDU's crafting of a highly regarded suite of adult education courses and successful efforts to secure funding. Another commendable area was that of Postgraduate Diploma/ Master's Programmes and especially the Learning and Teaching in Higher Education module to support academic staff development. However, the panel recommend that consideration be given to more flexible modes of delivery of the Postgraduate Diploma/Master's in Higher Education Studies. The panel commended HAESDU for excellent ongoing contributions to the Teaching and Learning Symposium, CHED Collaborative Education Practices Award, UCT Teaching and Learning report, Academic Heads Working Group and HOD Annual Workshops, Academic Staff Development Committee. On the other hand, the panel recommended that HAESDU updates its mission in line with the VC's strategic goals and the proposed Teaching and Learning Strategy as well as develop a plan for the next five years which aligns with CHED's direction and which considers resources outside of HAESDU (within and beyond CHED) which can be mobilised to realise such a plan. The panel recommended that staff charged with academic staff development within HAESDU define their role as a leadership one, promoting the strategic direction of CHED through, for example, the formation of collaborative groups. It was also advised that HAESDU considers ways to secure greater synergy and coherence across various CHED units to overcome segmentation and maximise access to excellent resources in CHED to advance academic staff development. The panel also recommended that HAESDU considers ways of making NAPP available in a more flexible format, and using it as a platform for a more extended short-course offering on teaching and learning. HAESDU was advised to give consideration to the Adult Learning Group becoming a separate unit within CHED.

At the institutional level, the panel suggested that the Vice Chancellor be requested to initiate a discussion on Education at UCT. In addition to its broader purpose, such a discussion would be a step towards resolving ongoing difficulties in administrative and other relationships between the School of Education and CHED units offering courses through the School of Education.

Centre for Educational Technology (CET)

The Centre for Educational Technology (CET) was commended for the mission-critical and indispensable university tool that VULA has become, which is uniquely well-regarded by its users. It was also mentioned that CET needs to prioritise what faculties have conceptualised and it needs to be more responsive to faculties and therefore, the panel recommended that CET considers exploring mechanisms for institutionalizing educational technology as well as policy and quality control for VULA at faculty level. CET was advised to enter into a formal agreement with the School of Education about the regulation of the Master's courses and to consider exploring mechanisms for institutionalizing educational technology, as well as instituting policy and quality control for Vula at faculty level. The panel advised that CET revisits the role of the CET Advisory Group and strengthens it as a communication channel.

Research

Religious Studies

The Department of Religious Studies was commended for its research excellence, both nationally and internationally. The panel further highlighted that this department is productive in terms of research output, and attracts significant numbers of international students at Doctoral level. In addition, the department was commended for its throughput of Doctoral degrees in the department. The panel recommended that the department builds on its proven research capacity and record of productivity in publication and Doctoral-level throughput to encourage its own undergraduate students into postgraduate study. The department's significant research focus on matters relating to Africa and research that is socially relevant was commended as was its ability to draw upon institutional networks in Europe and to a lesser degree, the United States.

Molecular and Cell Biology (MCB)

The panel was impressed by Molecular and Cell Biology's vibrant culture of research and its nodes of excellence.

Higher & Adult Education Studies Development and Studies (HAESDU)

HAESDU was commended for the emphasis it has placed on theoretically-informed, research-based development work, which contributes to the knowledge base in the field, and for the high number of staff with PhDs. The unit was also commended for regular research output in reputable journals, with two rated researchers and a number of NRF grants.

Transformation

Religious Studies

Though the Religious Studies Department was commended on its welcoming and encouraging environment, it was recommended that the department engages regularly as a collective in order to recast ways of managing its student body, and its connections to other departments and the Faculty as a whole. Specifically, the panel saw a need for regular staff meetings to address coherence of the core undergraduate curriculum, to debate the three –year major issue, to devise and carry through ways of increasing the undergraduate numbers, to nurture a cohort of students who will pursue postgraduate studies in the department, and to interface in creative ways with the rest of the Faculty both academically and in terms of various management and administrative challenges.

Higher & Adult Education Studies Development and Studies (HAESDU)

The panel noted that relations between the different sections are cordial and it was apparent to the panel that staff members have achieved a high level of professionalism and collegiality, not only within their own unit, but also with the individuals and groups with whom they interact, and that HEASDU staff members provide a "safe space" for other staff.

Transformation is not explicitly addressed in the CET and MCB reports.

Governance and Management

Religious Studies

The panel noted that staff and students in the department experience the Religious Studies Department as a welcoming and encouraging environment. This has allowed students the freedom to develop to their full potential, and staff to flourish in their individual research and teaching endeavours. It has long been the practice of the Heads of Department to conduct management functions with a light touch, and to arrive at decisions through email correspondence rather than regular staff meetings. The day to day running of the department has been carried largely by the HOD and the administrative staff. This has certainly contributed to a relatively conflict-free and collegial atmosphere, in which individual staff members have been given space to pursue their teaching and research activities without being burdened by collective administrative and managerial responsibilities.

Higher & Adult Education Studies Development and Studies (HAESDU)

Governance and management related issues were cited in two cases as areas that require attention, during the HAESDU and CET reviews. The panel observed that CHED's relations with the School of Education seemed to be strained. There appear to be tensions over criteria for admission on to programme streams offered by staff in CHED. The panel believes that these tensions can and should be resolved, in the interests of all parties, and proposes that a wide-ranging discussion of all stakeholders be initiated by the VC to discuss Education at UCT. One of the consequences of disestablishing the Faculty of Education was to place governance of all academic programmes in Education within a School which focuses almost exclusively on schooling. A governance model is required which enables academic staff specialising in teaching and research at different levels of the education and training system to contribute to the development of education at UCT as equal partners. In addition, the panel noted that internal organisation within CHED appears "siloe", an arrangement which diminishes the capacity for HAESDU to mobilise resources across CHED. The split between the Academic Development Programme and academic staff development, for example, was explained historically but is difficult to sustain in an environment of active curriculum development at the undergraduate level (for example in EBE) which invariably entails a combined staff and student development component.

To address the concerns with the School of Education, HAESDU has highlighted in their Improvement Plan that the Dean of Humanities has initiated a review into Education at UCT.

Centre for Educational Technology (CET)

CET academic postgraduate programmes are located in the School of Education. It was evident during the review that this arrangement is accompanied by difficulties. The programmes are taught and supervised almost entirely by members from CET. In addition, the programmes contribute a significant number of full time equivalents (FTEs) to the School of Education. During the interview with the School of Education representatives, it was also obvious that there were administrative and communication problems between the School of Education and CHED and hence CET. The panel recommends that this tension could be resolved by signing a formal agreement with the School of Education about the regulation of the courses. It seemed to the panel that the main challenge experienced by units like the Centre for Educational Technology (CET) in many institutions is the tension generated between the academic and support functions. This is most often experienced as a mutual frustration on both sides - with most of the University perceiving the centre's main function to be support, but with some senior staff in the centre seeing their role as primarily academic, particularly when there is a need to pursue research funding. The panel was of the view that since the inception of the CET mission in 2003, the unit has repeatedly expanded and been required to respond to institutional and external educational technology needs that were outside the original vision and mandate. However, the panel also noted that CET has stretched its resources, which has resulted in the unit providing other kinds of services that are offered elsewhere in the institution. The panel therefore recommends that CET makes a request for a Deputy Director position to strengthen its management and leadership so that there is more strategic planning, starting with the establishment of scope and mission as well as continuous operational management. The Director should also be invited to submit a request for additional project staffing in support of the institutionally-crucial technical

development role identified in the report. The panel also highlighted the need to set up a forum or task team between ICTS and CET to determine whether some of the present CET responsibilities can be moved to ICTS or done jointly.

Impact of International Reviewers

UCT is committed to the use of benchmarking and is competing in a global environment hence the use of international panel in the academic reviews to improve institutional performance. The outstanding profile and participation of the international members has certainly enhanced the prospect for reform in the offering of both undergraduate and postgraduate programmes. In 2011, two of the units reviewed had international reviewers namely: (Higher & Adult Education Studies and Development - Prof Lynn McAlpine, University of Oxford-UK; Centre for Educational Technology- Emeritus Prof Terry Mayes, Glasgow Caledonian University-UK. On 30 March 2012, the Senate approved a proposal that international review members provide a brief separate report containing a high-level assessment of the department in relation to their international experience. Prof Lynn McAlpine provided a written report on “who owns teaching and learning”. Her views contributed significantly to the framing of commendations and recommendations of the HEASDU review and in turn, the improvement plan.

Improvement Plans

The improvement plans are essential vehicles to monitor the extent to which departments respond to the findings by reviewers. In 2011, Improvement Plans were received from the following departments:

1. Religious Studies (reviewed on 2-3 August 2011)
2. HAESDU (reviewed on 2-3 November 2011)

Religious Studies and HAESDU have seriously engaged with most of the recommendations made by reviewers and have developed new strategies on how they plan to address the challenges. However, it needs to be noted that the plans have only been submitted recently and therefore are still in the process of implementation. Both improvement plans indicated that the review process helped to promote a culture of continuous improvement, especially with regards to staff development.

Religious Studies

In their improvement plan, Religious Studies started off by speaking to the subject of coherence of the undergraduate curriculum and that in the next two years the department will embark on restructuring its curriculum, engaging in discussions on the two or three year major, plans to work closely with other departments in the university to offer cognate majors in a variety of both obvious and creative ways. The department has initiated steps in creating greater visibility at potential recruiting opportunities which will increase the number of students majoring in Religious Studies. In addition, the department is looking at the possibility and viability of clearly focused Master’s Programmes for the future.

In addressing the subject of identity of the department, Religious Studies believes that a greater sense of identity can be developed through the curriculum restructuring under way for undergraduate and postgraduate students. Religious Studies is concerned about the impending retirements in the department, but they are also highly positive about the future with a large number of younger academic staff. The departmental staffing committee has agreed that the department could hire one person to teach Christianity in Africa. The department has also managed to appoint a person in Asian Religions on a contract basis and this person is already making a constructive contribution to the department as a whole. Religious Studies also envisage that this appointment will assist in establishing Asian religions in a department that has been dominated by Abrahamic traditions. Further staffing needs and developments will be clarified as the department restructures its curriculum in the next few years.

To address management structure, the department is proud of its ability to accomplish a lot using all the technological tools available to them. They have also had in place a management structure for the various responsibilities in the department (post-graduate and under-graduate convenors, space, administrator, and general consultant on the institutional memory of the department and the University).

A new management style has been introduced, existing portfolios have been empowered and a schedule of monthly meetings has been put in place.

Higher & Adult Education Studies Development and Studies (HAESDU)

Themes to be noticed from the HAESDU improvement plan are: HAESDU strategic planning, where the need for alignment between University-wide mission and strategy, CHED's mission and strategy and HAESDU's mission, strategy and planning is highlighted. HAESDU used the process of revising CHED's mission and goals to sharpen their understanding and contribution to CHED's mission. At the same time the appointment of the DVC Teaching & Learning and the establishment of the Senate Teaching and Learning Committee provided a platform for channelling CHED resources in strategic ways. The specific formal mechanism for channelling these resources is under discussion. One proposal is that CHED would have its own Teaching and Learning Committee which would serve as a link between the Senate level committee and CHED.

The second theme deals with Academic Staff Development leadership and coordination. The functional task of supporting academic staff development is currently put into effect across three units in CHED, namely, HAESDU, CET and ADP. Both HAESDU and CET have academic staff appointed with explicit job descriptions linked to academic staff development. Members of some of the ADP Educational Development Units have also an explicit staff development role (this is especially the case in the Health Sciences). Ongoing discussions need to take place to look at how this cross-CHED function can be strengthened, what forms the collaboration should take and how it should be led. A forum was created in 2010 to explore coordinating and planning initiatives within and across these units in CHED.

The third theme identifies the introduction of flexible delivery modes for HES programmes. Here the unit has taken into account the recent exercise of the HEQF which led to discussions about M.Ed/Phil programme between CHED and the School of Education.

Developing support for new academic (NAPP) is another important theme that HAESDU improvement plan dealt with. In addition to other initiatives for the NAPP, HAESDU would design and deliver a series of short courses. These courses would focus on practical aspects of teaching and they would be aimed at supporting all teaching staff but targeting short term temporary contract staff, as well as postgraduate students engaged in significant teaching activities in their roles as "super tutors", teaching fellows or teaching assistants.

To address the challenge of Adult Learning identified in the review report, the unit will explore ways in which Adult Learning and Academic Staff Development's work might be promoted through the work of a new envisaged CHED Teaching and Learning Committee. Expertise within the Adult Learning Group (e.g. in the area of RPL; mentoring; and challenges facing adults returning to learning) can be drawn on more effectively to complement and strengthen the new initiatives planned in the area of Academic Staff Development.

Annexure 5: Physical infrastructure ⁵³

Teaching and learning space on the campus is broadly categorized as classrooms, laboratories, studios and study space (library and open access computer labs).

The utilization of classrooms is a function of timetabling of classes and placing these classes in appropriately located, sized and equipped venues in the 10-period teaching day. Timetabling is currently done at Faculty level in collaboration with other faculties where there is a high level of service teaching (Science for EBE) and venue allocations are made by the Physical Planning Unit using specialist web-based software (Syllabus Plus).

The utilisation of classrooms, as measured by the product of the frequency of use and the occupancy in use, is not as high as it should be – frequency was 66.7% versus a target of 56% (66.1% in 2010) - in the 45-period week.

⁵³ Contributed by Mr G De Wet

Occupancy, which is a function of the ability to match class size with venue capacity, was at 66.8% versus a target of 75% (68.3% in 2010).

The factors which limit frequency are:

- The use of classrooms for tests in the late afternoon which neutralises their use for teaching across the campus
- The underutilisation of classrooms in first period due to the sheer volume of staff and students that must arrive on campus for first period
- The underutilisation of classrooms on Friday afternoons

In 2011, 40 classes did not have sufficient seats in the venues allocated to them (23 in 2010).

The problem of multiple lectures to a large number of students enrolled in certain courses remains, and creates the perception that this figure is much higher. A limited number of courses with large enrolments have attempted measures to regulate students but more needs to be done.

The lecture capture pilot project (the automated process of capturing, encoding and distributing the audio and video streams associated with a lecture) continued in 2011 during which 14 of the larger, more popular venues were equipped with the appropriate technology on Upper, Middle and Health Science campuses. This was less than expected as some experimentation was still being done and the actual installations proved challenging. In 2013 this project is expected to develop into a much larger project.

The related project of extended WiFi coverage on the campus focussed on the student gathering spaces such as cafeterias and selected open spaces such as the Jammie Plaza. In 2012 coverage is expected to move to whole buildings and particularly classrooms.

The long-awaited Size and Shape document was approved in 2011. This provides welcome direction for enrolments which indicates that the classroom situation should stabilise and improve substantially with the construction of 10 new venues to be complete for 2014.

Annexure 6: Report on the 2011 DTA awards⁵⁴

The Distinguished Teachers Award is a subcommittee of the University's Teaching and Learning Committee.

Ultimately, the significance of the award is that it is an institutional award that rewards outstanding teaching at UCT, and acknowledges the recipient's contribution, that is in line with promoting teaching and learning excellence at the institution. The DTA committee scrutinises each nominee for evidence of excellence in teaching over a number of years and detail about his or her approach. The teaching and learning portfolios of the nominees are thoroughly examined to ascertain the versatility and diversity of their teaching, the consistency in excellence, a detailed outline of the nominee's teaching philosophy and coverage of their experience. Provision of student evaluations is mandatory, and these should reflect feedback on the nominee's teaching, in relation to other lecturers in their department.

Certificates of Teaching Merit are awarded at the discretion of the DTA committee, to nominees who have not been awarded a DTA but who the DTA committee feel are still deserving of recognition for their outstanding contribution to teaching.

The 2011 awardees are:

Doctor Susan Levine- Department of Social Anthropology

Dr Levine's style of teaching is shaped by her disciplinary knowledge and her classroom is, as in ethnographic practice, a space for dialogic learning. Her interaction with her students shows a deep appreciation for the individual life stories of each student, and how their experiences count in academic life. Dr Levine's colleagues and students attest to her gifts as a teacher of both medical and visual anthropology (a teaching field she pioneered in South Africa) and to her passionate commitment to and engagement with her students: she does not condescend, but treats her students as equals and engages with them as they grapple with the world.

Her engagement with her students goes beyond the teaching of anthropology. Through her teaching she creates

⁵⁴ Contributed by Ms A Barratt

opportunities for her student to ‘grapple with the world’ and so develop the skills for living and engaging as good citizens. Her course in medical anthropology, developed in response to the politics of AIDS denials, is underpinned by an integration of research and social action, and serves as a model of what it means to engage with the disciplinary knowledge in a socially responsive manner in the classroom. The students love it. She has a capacity to simplify complex theoretical concepts and bring the immediacy and relevance of her discipline to the lives and worlds of her students, and so enables them to engage with the discipline in a meaningful manner even in the first year.

She encourages her students to write and publish, and draws on student publications and unpublished thesis writing in her undergraduate and postgraduate teaching. Using such student writing (which she describes as ‘spell bindingly good’); she is able to encourage and inspire her students to write well, and to shift the focus from western ethnography which dominates in many publications, to local contexts. This generous belief in her students’ abilities has enabled her students to explore and forge their own paths, and to surpass their expectations of themselves.

While teaching is conventionally assessed in terms of impact on students, Dr Levine’s inspirational teaching has also touched her colleagues, one of whom attests: “I have learnt a great deal from her and I consider myself one her students in learning how to make scholarship come alive. It is a joy to teach alongside her.”

Associate Professor Michael Campbell - South African College of Music

Associate Professor Michael Campbell’s contribution to developing jazz in the South African College of Music over the past 22 years has been remarkable. He started the jazz section in 1989. Since then he has compiled and taught courses with excellence and passion. His teaching has remained grounded in the ‘real world’ of the jazz industry, a world he knows and inhabits, and this approach has ensured that his graduating and well-rounded students have a set of skills and that will allow them long-term career opportunity and flexibility.

What makes him an exceptional jazz teacher? Is it his ability to integrate the creative, abstract elements of his field with systematic study methods in order to provide students with perspective into the subject and broad understanding of its real world application? His methods of integrating the creative achievements of jazz performance and the systematic study of music? The resolute task master? Concern for his students’ need to function in a professional environment where improvisation constitutes the most substantial and demanding part of a solo musical performance? The ability to recognise potential in students who do not have formal training in jazz theory or improvisations? Or his ability as a teacher to ‘bridge the gap’ for these talented students? Or improvisation on all these?

Doctor Gregory Smith - Department of Chemistry

Dr. Gregory Smith engages his undergraduate students in their study of chemistry in innovative ways that include anything from Superman acts to buzz groups. His teaching represents an interplay between theory and practice in which he relates the often abstract theory of chemistry to real-life applications in an environment where both the lecturer and the students enjoy learning.

Greg Smith is sensitive to the diverse educational backgrounds typical in our classrooms and the difficulties many have with a conceptually difficult discipline. He varies his teaching strategies to be effective for a particular objective, be it a small tutorial group or large class. He believes in active learning and uses buzz groups for brief student discussions with their neighbours in the class. This vigorous interaction with content not only stimulates attention in large classes, but allows students to talk about what they are learning. Class demonstrations (including his now famous Superman demonstration to illustrate corrosion) form an integral part of his teaching. Appropriate technology – video’s, animations and other web-enhanced materials – used with Greg Smith’s skill, facilitate the learning process, especially when applied to the depiction of three-dimensional structures of molecules or representations at the atomic level.

To stimulate conversation and motivate students to talk, to create a rapport with students and to gain their trust, and as evidence of his interest in them, he learns most students’ names, a considerable feat with some 450 students in a typical first year class!

Timothy Low (Statistics, Commerce, EDU)

Timothy Low teaches two subjects notoriously challenging and even frightening for most undergraduate students – mathematics and statistics. His students are identified as being ‘at risk’ in the Commerce Faculty’s Educational Development Unit and yet out-perform the students in the course as a whole. He achieves this by adapting to the changing needs of a diverse cohort of students; this adaptive teaching accommodates students who are learning mathematics and statistics in English – their second or third language.

His students tell of a teacher whose success comes from his availability to them (both on campus during his extensive consultation hours and after hours through a range of social media platforms), his imaginative and innovative use of new media in teaching, and his ability to create a classroom environment where students can develop confidence to succeed. His energy and warm nature foster relationships with students which allow them to be comfortable in grappling with challenging material, and his enthusiasm and persistence inspire his students to seek a deeper understanding of mathematics and statistics, rather than just enough to pass the course.

Tim Low has pays careful attention to how his courses are designed ensuring an integrated structure of teaching, learning, application and assessment. In both his teaching and his course design he is exemplary; this example inspires and changes the lives of his students, peers and the nature of education at this institution.

What is common to all recipients of the 2011 DTA award is a clear desire to enhance student success through innovative teaching methodology, and creating supportive and stimulating learning environments, thereby creating opportunities for students to excel.