<table>
<thead>
<tr>
<th>No.</th>
<th>Title</th>
<th>Authors</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.</td>
<td>Does using the self-test tool in the online classroom lead to inspired learning?</td>
<td>SUE OELLERMANN</td>
</tr>
<tr>
<td>16.</td>
<td>Paving the Way: Academic excellence and the ACN101 Tutorial Programme at Varsity College, Rondebosch</td>
<td>CARLA LEVER</td>
</tr>
<tr>
<td>23.</td>
<td>Self-efficacy and performance in Mathematics at an African university</td>
<td>TUNTUFYE S. MWAMWENDA</td>
</tr>
<tr>
<td>29.</td>
<td>Co-operative task design and delivery: Moving staff and students</td>
<td>JAMES GARRAWAY AND CECILIA JACOBS</td>
</tr>
<tr>
<td>37.</td>
<td>‘Only a name change’: The move from Technikon to University of Technology</td>
<td>SIOUX MEKENNA AND PAULETTE POWELL</td>
</tr>
<tr>
<td>49.</td>
<td>Practitioners’ Corner New lecturer orientation as ‘celebrating what we know’: A case for pen and paper, not powerpoint</td>
<td>JOHN BOUGHEY</td>
</tr>
</tbody>
</table>
The Journal of Independent Teaching and Learning is a peer-reviewed journal, which focuses on making a difference to educators at the primary, secondary and tertiary levels. It publishes original contributions of interest to researchers and practitioners in the field of education.

The following types of contribution will be considered for publication:
• research-based empirical, reflective or synoptic articles that would be of interest to the educational practitioner
• review articles that critically examine research carried out in a specific field
• discussion or advocacy papers suitable for publication in the section entitled ‘Practitioners’ Corner’
• book reviews that comprise a clear and concise evaluation of recently published books.

Editor
Professor Dolina Dowling BA; Dip Ed; Dip Sp Ed; APhS; MA; PhD.

Editorial Advisory Board
Professor Carmel McNaught BSc (Hons); Dip Ed; MEd; PhD.
Professor Andile Mji BSc; HDE; BEd; MEd; DEd.
Professor Michael Glencross BSc; PGCE; BEd; BSc(Hons); MPhil; DPhil.
Dr Felicity Coughlan B SocSc Hons (SW); B SocSc Hons (Psych); MSc; DPhil.

Publisher
The Journal of Independent Teaching and Learning
is published by
The Independent Institute of Education (Pty) Ltd.
ADVTech House
Indaba Greens Business Park
54 Wierda Road West
Wierda Valley, Sandton
South Africa
www.iie.edu.za

Disclaimer
The publisher and the editor cannot be held responsible for any consequences arising from the use of information contained in this journal. The views and opinions expressed do not necessarily reflect those of the publisher or the editor.

Address for correspondence
Professor Dolina Dowling
The Editor
The Journal for Independent Teaching and Learning
PO Box 2369
Randburg 2125
South Africa
E-mail: editor@iie.edu.za
Contents

Volume 4 2009

1. Notes on Contributors

3. Editorial
   Dolina Dowling

5. Does using the self-test tool in the online classroom lead to inspired learning?
   Sue Oellermann

16. Paving the Way: Academic excellence and the ACN101 Tutorial Programme at Varsity College, Rondebosch
   Carla Lever

23. Self-efficacy and performance in Mathematics at an African university
   Tuntufye S. Mwamwenda

29. Co-operative task design and delivery: Moving staff and students
   James Garraway and Cecilia Jacobs

37. ‘Only a name change’: The move from Technikon to University of Technology
   Sioux McKenna and Paulette Powell

49. Practitioners’ Corner
   New lecturer orientation as ‘celebrating what we know’: A case for pen and paper, not powerpoint
   John Boughey
Notes on contributors

John Boughey is currently Director of Academic Development at the University of Zululand, South Africa with a principal responsibility for academic staff development. Additionally, he edits the University’s in-house research magazine Umewaningi and is Chair of the Community Engagement Working Group. British by birth, and with a background in Applied Linguistics and English Language teaching he came to South Africa in 1990 to work at the University of the Western Cape as an Overseas Development Administration/British Council English Language specialist. Previously, after graduating from St Andrews University, Dr Boughey worked in the Canary Islands, Qatar, Abu Dhabi, and Yemen.

James Garraway is Head of Department responsible for foundation provision and academic development at the Cape Peninsula University of Technology, South Africa. He leads the Foundation Special Interest Group for the SA Academic Development Association (HELTASA) and has produced two manuals on teaching and managing foundation respectively. His main research interest and field of publication is knowledge transfer between academic programmes and the workplace. Cecilia Jacobs is the teaching and learning co-ordinator in the Engineering Faculty at the Cape Peninsula University of Technology. In her capacity as Associate Professor, she is the co-leader of the Work-Integrated Learning Research Unit, an institutional niche area within the National Research Foundation. Dr Jacobs’ research interests are in disciplinary literacies, the way in which knowledge is structured in different disciplines, and how that knowledge is communicated through discipline-specific language. Current research focuses on the teaching of disciplinary literacies within disciplinary domains and its implications for academic developers and disciplinary specialists in higher education.

Carla Lever completed her Masters in English and Gender at the University of Cape Town in 2006. Since 2007, she has been employed as a full-time English Lecturer at Varsity College Cape Town (VCCT), where she is involved in student result tracking across the UNISA and The Independent Institute of Education programmes of study. These experiences in monitoring student trends of academic behaviour, combined with her background in English, have aided her in promoting academic development on the VCCT campus. As such, she is currently involved in piloting a second language academic literacy tutorial programme, as well as offering writing and examination support initiatives. Her academic interests include gender issues, theatre and contemporary visual culture. She is passionate about encouraging student participation in the arts and offers extra-curricular cultural events for students on campus.

Sioux McKenna works at the University of KwaZulu-Natal in South Africa where she supervises a number of Masters and PhD students undertaking research in the broad area of Higher Education studies. Her publications and conference presentations reflect her interest in the Higher Education sector. She is a
member of the Accreditation Committee of the South African Higher Education Quality Committee (HEQC). She has participated in quality audits in South Africa for the HEQC and in Bahrain for the Quality Assurance Authority for Education and Training. **Paulette Powell** is a Director of Skill Factor Consultants. She has spent many years working in the Higher Education sector in a university of technology (UoT) where she was responsible for curriculum development. Paulette has published on her work and presented aspects thereof at various conferences. She is currently doing a PhD which looks at the discourses of academics at a UoT and considers how issues of curriculum development are understood.

**Tuntufye Mwamwenda** holds a doctorate in Educational Psychology from the University of Alberta in Canada. For over twenty years, he has lectured Educational Psychology in Botswana, South Africa, Canada and the USA. Apart from lecturing, he has engaged in research and has publications in peer-reviewed journals nationally and internationally. His research interests are based on a wide range of topics with emphasis on cognitive development based on Piaget’s theory of cognitive, as it applies to African children and academic achievement. As part of his university teaching career, Professor Mwamwenda has served as Dean of Education at the universities of Transkei, Natal, and KwaZulu-Natal. Most recently he has been the Director of the South Africa Center, Long Island University in New York, which has a satellite in Durban.

**Sue Oellermann** was born in Pietermaritzburg and studied at the then University of Natal (now University of KwaZulu-Natal) for an Economics degree. This was followed by a higher diploma in Management and more recently she has been studying for a Masters degree in Business Administration. For the last 16 years she has been employed at the Durban University of Technology, Department of Applied Management, Riverside Campus in Pietermaritzburg, as a lecturer and coordinator of the Bridging programme. She has a special interest in using digital technology in education and is presently creating online classrooms for all four of the courses she teaches.
The post-1994 government initiated a number of reforms to address the fragmentation and different educational systems instituted by apartheid. One of these was the introduction of outcomes-based education, which underpinned Curriculum 2005. Another was the replacement of the matriculation examination system by the new National Senior Certificate (NSC) in 2008. This aligned the national examination system with Curriculum 2005.

The introduction of the NSC set off a flurry of activity and debate in both schools and higher education institutions alike. With regard to the former, schools prepared their learners for the examinations knowing that the results would be viewed as a measure of their success in delivering the new curriculum. In terms of the latter, there was uncertainty about the efficacy of the NSC as an admission criterion to higher education. Some institutions responded by developing and implementing their own entrance examinations. There was also a host of debates within the public arena as parents, employers and students wondered about the credibility of a NSC, which has a pass mark set at 30%.

In the event, the 2008 NSC produced a national average pass rate of 62.5%, with approximately 38% of the 533561 learners not qualifying for a place in higher education. This, of course triggered another round of angst-driven debate about the quality of the schooling system.

But for higher education institutions to focus too much on the efficacy of the NSC is to miss the point. Over the past ten years the majority of students entering higher education have come from disadvantaged schools and as a consequence there have been poor success and throughput rates across the sector. The introduction of the NSC does not add anything new to the mix. Institutions will continue admitting large numbers of underprepared students and so there will continue to be the need to have a range of interventions to support such students, if they are to have the chance to succeed in their studies.

Some institutions have responded by introducing foundation or extended learning programmes. These provide students with a year of study to bridge the gap between school and first year university education. Others have established academic development centres to provide support for students as they enter the mainstream programmes. And yet others have left it to the lecturers themselves to develop innovative support mechanisms for underprepared and at-risk students.

In this fourth edition of the Journal of Independent Teaching and Learning the underlying theme is how to ensure that the continued widening of access to higher education leads to success. The responses to this challenge are varied and interesting. The author of the first article reflects on her use of an on-line activity,
a self-test tool with true and false questions, as a supplement to face-to-face teaching. This was used to try to get her students to take responsibility for their learning as well as to raise pass rates. She found that this interaction achieved both objectives. Student motivation to study and their performance in tests and examinations were enhanced. The second article shows that student success rates in a first year level module improved over a three year period since the introduction of a tutorial support system.

The third article considers the role of a student’s self-perception about their abilities – self-efficacy – as a predictor for academic success. If students believe they will succeed in their learning, they do. After reviewing the fairly extensive literature on the subject the author tests the validity of the correlation between self-efficacy and Mathematics with male and female students in an African university. He found the hypothesis held up. This finding provides educators with another factor to take into consideration as they develop interventions to support students for success in their studies.

The authors in the fourth article discuss the challenges involved in getting lecturers to cooperate with each other in designing interdisciplinary, work-related tasks to ensure that transdisciplinary learning takes place. Such learning would equip students better to participate successfully in the workplace.

The fifth article is concerned with institutional types. The authors discuss the change of nomenclature of technikons to universities of technology. The authors argue that at least in one UoT this was largely a re-branding exercise and a re-positioning of the institution within the higher education sector rather than a substantial shift in institutional identity and ethos. They also remind readers of the strength that the technikon system had in providing career focused programmes. They argue that this should be taken into account as universities of technology reconsider their programme qualification mix.

In Practitioners’ Corner an interesting review is provided of a university induction programme for new lecturers. They are asked to describe metaphorically and graphically their teaching philosophy before comparing these with other ‘established’ teaching metaphors. Such reflection is important if success rates are to improve at South African higher education institutions.
ABSTRACT
Previous attempts to overcome the problem of my students not engaging with their work and taking responsibility for their learning have had limited success. The core of this paper describes the intervention of an online activity using the self-test tool with true and false questions to overcome this problem. First, the broader educational climate, policies and trends are outlined, theories relating to the specific problem are cited in support of my intervention and the rationale for the use of the methodology of action research is described. Secondly, I explain how a specific online activity was implemented, outline the feedback received and reflect on my findings from this activity as well as subsequent online student engagement and their implications for future action. Based on these findings I conclude that student motivation to study and their performance in tests and examinations is enhanced by offering them self-tests as a means of engaging effectively with their discipline.

INTRODUCTION
This paper describes the intervention of an online activity in a course at the Durban University of Technology (DUT), which was planned to overcome the problem of students not engaging with their work and taking responsibility for their learning. This is a problem that I have previously attempted to overcome with limited success. The broader educational climate, policies and trends are briefly outlined, theories relating to the problem are cited and the rationale for the use of the methodology of action research is explained. I then report on the implementation of a self-test activity I designed to address the problem. I consider the findings and subsequent online interventions. I conclude with reflections on the changes and transformation that has taken place as a result of the activity and my future plans for the next cycle of action research.

THE BROADER EDUCATIONAL CLIMATE
Prominent pundits of e-learning suggest that tertiary institutions globally could lose their monopoly as providers of education if they do not become more technologically innovative and consumer oriented (Kanuka, 2006). While e-learning has been extensively applied in institutions of higher learning, like Harvard and Stanford, over the last decade (Stanford Report, 2000), there has been significant teacher resistance to it due to a number of concerns (Kanuka, 2006). Nevertheless it is widely considered that e-learning can enhance many aspects of the learning process as well as produce graduates who are technologically literate. This enables them to apply their skills effectively in our digital global village.

The interactive nature of the carefully designed e-learning environment renders it more authentic than traditional methods with the online classroom providing students with an avenue of access to the real
world and the potential to engage with it online (Herrington, Jeeves, Oliver and Woo, 2004). These, and other important benefits, like improved quality, increased access and reduced costs (Hermes in d’Antoni, n.d.) have resulted in further interest across the whole spectrum of higher education in the possibilities that the e-learning environment provides. Many higher education institutions that have embraced e-learning have learned that blending it with traditional methods, like face-to-face interaction with students, serves to temper its inadequacies (Kanuka, 2006).

NATIONAL POLICIES AND TRENDS

The intention at national level in South Africa to enhance access to learning for all learners is echoed in the mission statement of DUT. According to Badenhorst and de Beer (2004) this can be achieved by having more than one method of delivery. Furthermore, the Department of Education (DoE) has clearly spelled out that the changing needs of the South African student body demands a change in teaching methods. According to a 1997 DoE paper on Outcomes Based Education in South Africa (Tayler, McBain, McCullough and Oellermann, 2007), the focus should include, inter alia, learning that is authentic, learning through formative assessment, innovative and creative learning programmes and emphasis on outcomes (what the learner becomes and understands).

PROBLEMS IN OUR TEACHING ENVIRONMENT AT THE DURBAN UNIVERSITY OF TECHNOLOGY

Tertiary level educators have to contend with a host of teaching problems because most of our students are poorly prepared for study at this level due to the following factors:

- Students generally lack reading skills, learn in their second language and Curriculum 2005 focuses on oral development at the expense of explicit teaching of literacy (Hart, 2007).
- Most students come from poorly resourced schools where learner input is discouraged.
- Many students appear to have been raised in an environment with little structure or discipline.

As a result, students do not have a sound foundation of knowledge and skills (particularly in academic and business discourse), are undisciplined, and have little idea of how to begin or structure their studies. Most resort to rote learning and many carry these problems over to their second and even third year of study. In addition, students are generally reluctant to interact in class because they lack confidence in expressing themselves and since classes are usually large. The constraint of lecturers having to cover a large syllabus does not allow for protracted drawing out of student feedback. Exacerbating this is the apparent general student mindset that the lecturer will do the work while the former sit as passive observers, obliged only to take notes.

In the past I have tried to assist students to engage with the material by issuing them with lists of true and false worksheets. They were given the correct answers in class once they had completed the tests. However, this involved many reminders and a constant trickle of students into my office asking for the worksheets because they had not attended the lectures. Although the worksheets were of some help to students, the responsibility for their learning rested with me.

A SPECIFIC PROBLEM

In an age of innovation and advancing technology, it seemed logical to explore online learning in an effort to help overcome the above teaching and learning problems. It was, therefore, decided to explore the use of the self-test tool with feedback as part of an online classroom in an effort to inspire students to engage with their studies. The hypothesis being that this would result in more effective learning, as reflected in their improved performance in tests and examinations and their perception of learning as a positive experience.
**THEORY**

Kruse (2002) states that ‘the success or failure of any e-learning initiative can be closely correlated to learner motivation’ and recommends that Keller’s (1987) ARCS (attention, relevance, confidence, satisfaction) model be kept in mind when designing any online programme. In the ARCS approach the learner’s attention must be attained and sustained, the relevance of training demonstrated, learner confidence instilled and learner satisfaction imparted.

Keller’s strategy for gaining and maintaining learner attention includes the use of sensory stimuli. Hence I decided that visual stimuli and using the allegory of hiking in my online classrooms would make them more appealing. Colourful images, including some of myself hiking and students learning, would create a personal presence, arouse student curiosity and a sense of inquiry as they enter and investigate the potential of the online classroom.

Confidence would be instilled through easy access to the classroom and its contents including self-tests with immediate feedback. A clear advantage of using true and false self-testing with feedback for learning and revision purposes is that the results are encouraging for students. With only two choices, the student is likely to guess correctly on half the questions even if he/she has done no studying and does not know the answers. First year students need this sort of belief that they are achieving significantly. The hope is that their scores and sense of satisfaction would increase every time they repeat the test. Improved summative assessment results, particularly in the multiple choice sections of the tests and examinations would increase student satisfaction.

True and false questions are widely considered to be a suitable method for testing student knowledge or comprehension. According to the Alabama Department of Education (2001-2002: 1), ‘students can generally respond to many questions, covering a lot of content, and demonstrate understanding of simple logic in a fairly short amount of time.’ Although some educationists may categorise quizzes at the lowest level of learning according to Bloom’s Taxonomy of Cognitive levels, the Alabama Department of Education (2001-2002: 5) suggests that they can be used at higher levels. For example, students can be provided with a set of information that is new to them – a set of data or written work – then asked various forced choice questions related to the content or the presence/absence of certain characteristics in the work.

McCombs and Whistler (1997) see a link between motivation and control in ‘the abundant and accumulating evidence that motivation, learning and achievement are enhanced where learner-centred principles and practices are in place.’ The online classroom provides a student-centred approach to learning that focuses the instructional process on the learner and where the lecturer’s role is that of facilitator or ‘guide on the side’ (Kempe in Australian Flexible Learning Framework, Effective Online Facilitation, 2002). Based on the above, the expectation is that once students are familiar with online learning, they will enjoy being more involved in their learning and feel more empowered through the control afforded them over the pace and timing of their learning.

**METHODOLOGY**

The method of investigation used in this study is action research which involves ‘learning by doing’ in a continuous cycle of plan, act, observe and reflect ‘where theory informs practice and practice informs theory in a continuous cycle’ (O’Brien, 1998).

As mentioned before, I have previously attempted to support student learning with true and false tests. Feedback confirms some success but at a cost of time and money. An online activity was therefore planned and implemented in the hope that it would be more effective. Feedback from students was obtained and
reflected upon. The findings are used to refine future activities for the following cycle of action research, and so on, until problems are resolved.

According to the ABL group as quoted by O’Brien (1998) ‘there is a dual commitment in action research to study a system and concurrently to collaborate with members of the system in changing it in what is together regarded as a desirable direction.’ This implies discussing and exchanging insights, experiences and knowledge with my peers in a collegial atmosphere of relationship building. Students will be encouraged to collaborate in identifying problem areas for my further investigation and remedial action as an ongoing process.

My skill in research and the art of praxis, or putting theory into practice, should improve with successive action research cycles. Such research falls in the category of qualitative research as it ‘seeks insights through loosely structured, mainly verbal data rather than measurements’ and ‘analysis is interpretative… impressionistic and diagnostic’ (MRS Glossary of Terms).

I plan to have fully functioning and effective online classrooms as a core feature of all four of the courses I teach in 2009 and to enable the ongoing evolution and refinement of these classrooms through the opportunities for discussion, reflection and assessment afforded by action research.

**INTERVENTION**

*The Long-term Plan for the Online Classroom*

WebCT, a Learning Management System (LMS), was used to construct my online classroom. Table 1 shows the tools of the WebCT classroom I used for the four subjects I teach according to the following timeframe:

<table>
<thead>
<tr>
<th>Date</th>
<th>Tool</th>
<th>Rationale for using the tool</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 2009</td>
<td>All the learning modules</td>
<td>Students read more easily from a lit up screen. Useful hyperlinks, encouraging students to search through hyperspace for further information, create an opportunity for ‘incidental learning’ (Cronje, 1997).</td>
</tr>
<tr>
<td></td>
<td>Announcements</td>
<td>This alerts students to any new material, tests and assignments.</td>
</tr>
<tr>
<td></td>
<td>Calendar</td>
<td>This indicates important dates, e.g. tests.</td>
</tr>
<tr>
<td>February 2009</td>
<td>Discussion tool</td>
<td>This will be activated for student questions on course topics that they want clarified and I will respond with personal answers. Students will be encouraged to open discussions to the whole class as this will foster peer learning. According to Berge (2006) it is important for online facilitators to provide an environment in which interaction with content and interpersonal interaction can occur to enable higher order learning to take place.</td>
</tr>
<tr>
<td></td>
<td>Media library and web-links</td>
<td>Resources in the media library and in web-links provide access to relevant, ‘real life’ situations and should stimulate curiosity and make student learning more authentic.</td>
</tr>
<tr>
<td>Date</td>
<td>Tool</td>
<td>Rationale for using the tool</td>
</tr>
<tr>
<td>----------------------------------</td>
<td>----------------</td>
<td>---------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Throughout 2009</td>
<td>Slide shows</td>
<td>They will add variety.</td>
</tr>
<tr>
<td></td>
<td>Student roster</td>
<td>Having their photographs in the roster gives students a sense of ownership of the online classroom.</td>
</tr>
<tr>
<td></td>
<td>Students’ homepages</td>
<td>Interested students will be assisted in creating their own homepage with a picture. This should stimulate them to explore the possibilities of web-based learning.</td>
</tr>
<tr>
<td></td>
<td>Self-test tool</td>
<td>The question bank will cover topics as they are completed in class and will assist student learning and preparation for tests and examinations.</td>
</tr>
<tr>
<td>From April / May 2009 (in foundation class)</td>
<td>Discussion tool</td>
<td>I will use this tool to teach and develop student argument. This has been successfully achieved by Dube, Lamberti and Ndlangamandla (2007) at the University of Johannesburg. In an effort to improve literacy and to facilitate higher order learning, students will be given a discipline related passage and asked to comment on it and submit it for formative assessment. I will comment on and guide their argument, pointing out any unnecessary emotion or unreasonable assumptions made. The student will resubmit again and again until he/she decides to submit for summative assessment.</td>
</tr>
</tbody>
</table>

I hope to conduct the multiple choice question (MCQ) part of all term tests in the online classroom. I have assisted Lorna McCullough, a colleague with online experience, with this in the online classroom for Business Management 1 in 2007 and 2008 with significant success. I will draw on this experience in facilitating the administration of online MCQ tests and self-test quizzes. I learned that students need detailed instructions when logging on for the first time and finding content or tests. Some students initially resist online learning but we found that informing them that tests will be conducted online prompts them to log on.

**The Initial Design and Development of an Online Classroom**

Online classrooms were designed and provided in 2008 for two of the courses I teach as an adjunct to traditional face-to-face contact with students, thereby including another method of delivery in the programme, enhancing student access to learning (Badenhorst and de Beer, 2004) as well as making learning more interactive and therefore more interesting and inspiring for the student. Learning material, which covered all specific outcomes, old examination and test questions and a slide show, was loaded in both classrooms in the *learning modules*. Learner guides were loaded into the *course content*.

In both classrooms, extensive use was made of the assessment tool which consisted of mainly true and false self-tests. Self-test tools are extremely important as self-tests with feedback satisfy the DoE’s call for learning through formative assessment (Tayler et al, 2007) as well as all four aspects of Keller’s motivation model:

- They capture and maintain student attention because they are relevant and interactive and reading from a screen is easier for the ‘Y generation’ who tend to be visual learners.
- They inspire confidence and are satisfying because students grow in knowledge and understanding from obtaining feedback and repeating the tests.
The calendar and notice-board tools were activated and the discussion tool provides a 24/7 avenue for student questions and my personal online replies, which overcomes the problem of student embarrassment when speaking up in class.

A media library and web-links provide windows to the real world through papers, articles and other resources appropriate to the specific courses, thereby promoting authentic learning (Herrington et al., 2004). The Homepage was designed with a link to a page containing a welcome message. Here the allegory of hiking is introduced together with a colourful image with the intention of making the classroom more visually stimulating, interesting and therefore motivating for students (see Figure 1).

**Figure 1**

*Cropped screen dump introducing the allegory of hiking to the online classroom for Management*

Allegory is considered appropriate as it is defined as ‘the figurative treatment of one subject under the guise of another’ or ‘the representation of ideas or principles by characters, figures or events in narrative, dramatic or pictorial form’ ([Dictionary.com](https://dictionary.com)). Allegory was used as far back as Plato to instruct or express truths in symbolic terms (JSTOR, 1929). I believe it will appeal to my learners.

I continue with the symbolic use of hiking in presenting the learning modules. Where appropriate I have included pictures of myself hiking in an effort to develop both the allegory as well as maintain the personal presence initiated by the photograph of myself on my homepage.

**THE IMPLEMENTATION AND FACILITATION OF AN ONLINE LEARNING ACTIVITY**

In an effort to gauge the value of online learning, I conducted an online activity whereby a group of students were presented with true and false questions with immediate feedback using the self-test tool. According to the Alabama Department of Education (2001-2002), a well-designed set of true and false questions should not contain ambiguous or vague statements and terms, such as ‘regularly’, ‘usually’, or ‘some’ in the interest of clarity as these terms may be interpreted differently. Each statement should be short and simple and preferably contain only one idea as some parts of the statement could be true and other parts false which would leave the student confused about how to answer.

For the same reason, ‘cleverness, trickery and verbal complexity’ should be avoided (Landsberger, 2007). The same applies to negatives or double negatives which, if used, should be highlighted in some way to call attention to them. I have found that second language students in particular struggle with double negatives as these add an unintended complexity to the statement. At the same time, answers should not
be obvious to students who do not know the material. To achieve this, ‘true statements should be about the same length as false statements’ and ‘sweeping, broad, general statements or absolutes’ (like, ‘all’, ‘always’, ‘never’, ‘none’ and ‘only’) should be avoided as they tend to be false (Alabama Department of Education, 2001-2002).

Test tips are available (‘Test tips. True or false’). These state that a set of true statements that cover the material should first be written. Half of these statements should then be converted to false though not negative statements. Obviously one would need to randomise the sequences of true/false responses to avoid a discernable pattern. I have noted that ‘true’ is marked more often in guessing and that assessing false statements tends to be more challenging for the students (Landsberger, 2007).

Ten foundation students registered for my first online classroom and seven turned up for the activity. Two students had an initial problem logging on but this did not take long to sort out. I directed the students to the self-test tool where they were presented with fifteen true or false questions with feedback. I carefully primed them with the procedure. They repeated the test a number of times with results in one instance increasing from 53% to 87%.

Students were intrigued with the classroom and some, satisfied with their improved results, explored it further. One student located the student roster and loaded his photograph onto it from his cell phone. Others expressed interest in the pictures, photographs and course content and verbalised their surprise that I undertook hiking as a pastime. At the end of the 80 minute session it was difficult to extricate the students from the training room, such was their absorption, enthusiasm and seeming fascination with my classroom. For the first time they appeared to consider learning ‘serious fun’ (Tayler et al, 2007: 7).

OBTAINING FEEDBACK FROM LEARNERS

Students were requested to provide feedback concerning the online activity by rating the extent of their agreement with each of ten statements from A, strongly agree, to D, strongly disagree.

All but one student (who later successfully logged on to another computer) agreed that they logged on and could follow instructions without much difficulty. Most agreed/strongly agreed that:

- doing the test repeatedly enhanced their learning
- it helps them answer MCQ test questions
- obtaining immediate results helped them understand why answers were incorrect
- their computer skills improved
- they were encouraged to spend more time studying
- they prefer learning online.

Comments made revealed that:

- the self-test helped them quickly gauge the extent of their knowledge
- they want the whole syllabus to be covered in this way
- they believe online learning to be quicker, more fun, more interesting and more helpful, it helps them study independently and should be the main method of learning and submitting assignments.
A REFLECTION ON FUTURE PLANS FOR THE NEXT ROUND OF IMPLEMENTATION

Student feedback was overwhelmingly positive regarding the value of the self-test true and false quiz. All students who engaged in the activity appeared to grow in confidence in their academic abilities and returned a number of times, in the short time before the examination, to the online classroom to repeat the quiz. This enthusiasm prompted me to add more questions to the quiz. A tracking report later recorded 33 sessions of student activity from the 7 students in this online classroom. Clearly, this intervention inspired them to study and it appeared to have assisted them in obtaining high marks in the MCQ section and probably in achieving overall success in the year-end examination.

I was pleasantly surprised at their interest in the classroom as a whole. It was not their classroom – I merely allowed them in to perform the test and had explained this to them. Nonetheless they were very curious and enjoyed navigating around the classroom, stopping to ask questions about the content and making positive comments. It was clear that the students enjoyed seeing me in a different role (i.e. as a hiker) to that of a more boring ‘chalk and talker’. I am therefore persuaded that the instructor’s personal presence in the classroom is important and helps create a bond between lecturer and student. This initial success inspired me to build online classrooms for my Management 1 and Organisational Management 3 class groups in 2008. Self-testing with feedback was an important component of both classrooms to assist students to cover the basics of the discipline fairly quickly.

2008 pass rates increased by 23.5% in Management 1 compared to 2006 (when I last taught this class) and by 5% in Organisational Management 3 compared to 2007 results. (Lecturers who taught the students enrolled in the Organisational 3 class for 2008 noted that the students were academically weaker than in previous years.) Two more of my classes are being put online in 2009. Once this is established I will teach students argument using the discussion tool to achieve higher levels of learning.

CONCLUSION

I have already benefited and will continue to benefit from implementing the online true and false quiz in the following ways:

- I have started and will continue to build up a bank of questions online, obviating the need to generate pages of hardcopy to hand out to students.
- Students get immediate feedback, removing the need for me to explain in class.
- Students did not come to my office for help before examinations as was the case previous to the introduction of online learning.
- Students verbalised appreciation that I am doing my best for them which has given me more fulfilment on the job and motivated me to continue with online learning.
- Students were more motivated and took responsibility for their learning.
- I have had more time to put other courses online and my job is enriched.

Benefits to my students

These include:

- improved computer skills
- their learning was more interactive, fun, interesting, quicker and effective
- learning independently at their own pace and in their own time meant that they took ownership of their studies and developed a sense of responsibility
their confidence in their abilities, and motivation to learn, increased
pass rates in the online courses improved.

Student evaluation of courses reflects a very favourable response to blended learning.

**Improved Curriculum**
Although my students verbalised their appreciation of my online classrooms they still need lecturer interaction, guidance and support. Therefore adopting a learning strategy that is a blend of online instruction and traditional face-to-face teaching is ideal.

Since students can use the self-quiz activity to cover and consolidate the large amount of subject content in a relatively short period, they appear to learn the basics of a course quicker than when learning only through traditional means. This means that there is time to teach them at higher levels of learning. For example, the development of discipline-specific argument should enhance understanding, improve literacy levels and achieve critical cross-field outcomes.

**Benefits to the Durban University of Technology**
There are a number of benefits that work in this area could bring to DUT. First, research could be done on aspects of online learning and papers published or presented at conferences. These would supplement the coffers of the institution or could be used to fund more computer laboratories. For example, in a conference paper we mentioned the benefits derived from putting the Maths for Business course online in 2007 (McCullough, Oellermann and Schofield, 2007). Secondly, improved examination results, as were apparently achieved through using the self-test tool as part of an online classroom, would likely make our courses more attractive to prospective students. Hence enrolment at DUT would increase.

Thirdly, more lecturers engaging in online studies and activities could help in developing the DUT, Riverside Campus, as a preferred centre for tertiary study. Riverside campus has one computer for every nine students at present, which makes this a possibility, although constraints could be the inadequate bandwidth and maintenance of up-to-date computer laboratories.

**Lessons Learned**
Based on the above successes I feel confident in answering the initial question posed in the title in the affirmative: students were clearly inspired to study by the self-test quiz and it appears that this has translated into better performance in the year-end examinations for my online classes. However, the question of the effectiveness of the learning still remains. While students learn the correct answers through multiple repeats of the test and say that the feedback helps them understand the material, in many cases this understanding is not reflected in written answers where students are required to explain concepts. Also, true and false self-testing does not give students a good idea of how they will perform in an examination.

In the light of this, true and false self-testing at higher levels should follow once students have grasped the basics of the discipline. When students have gained sufficient confidence in their ability to learn, introducing MCQ self-testing with feedback should give them a more realistic idea of how they would perform in an examination and provide greater potential for testing at higher cognitive levels than does true and false testing. MCQs can be used for testing at five of the six levels of Bloom’s Taxonomy (‘Designing and Managing MCQs’, n.d.). Neither of these two assessment methods ‘tests the students’ ability to organise ideas and present these in argument’ (Ballantyne, 2004). Using the discussion tool to teach students argument would be a suitable method for coaching and assessing them in this regard.
All three of the above-mentioned interventions hold the promise of delivering more effective learning and offer the potential of more accurate assessment of such learning. My intervention in this study indicates that immediate online feedback is an important factor in student motivation as students read better from a lit up screen, written feedback appeals to their predominantly visual style of learning (as opposed to oral in class) and it is immediate and interactive so demands their full concentration. I have also learned that students respond with enthusiasm to visual stimuli and a personal presence in an online classroom.

It appears that most students understand the importance of being computer literate and are keen to master the skills needed to achieve competence in an increasingly digital business world. However, I have found that students need a lot of face-to-face direction and support in the initial stages of online learning as they are nervous and unsure of anything outside their own experience. A great deal of detailed instruction and patience is required from the facilitator to create a safe and supportive learning environment.

Setting up an online classroom with self-tests is far more time-consuming than I initially assumed it to be. Nevertheless, I now dare to assume that ongoing refinements made to my online classrooms following successive cycles of action research will result in better throughput and quality of student learning. I am therefore working on two more online classrooms for 2009.

REFERENCES


Australian Flexible Learning Framework. (2002) ‘Effective online facilitation’


D’Antoni, S. (n.d.) ‘The Virtual University. Models and Messages’

‘Designing and managing MCQ’s: Appendix C: MCQs and Bloom’s Taxonomy’ (n.d.)


Paving the way: Academic excellence and the ACN101 tutorial programme at Varsity College, Rondebosch

Carla Lever - Varsity College, Rondebosch, South Africa

ABSTRACT
Varsity College Rondebosch has experienced a pleasing three year trend of dramatic improvement in first year Commerce student results. This paper examines the contributing factors towards this result and attributes the ACN101 tutorial programme as the major contributing factor. An examination of the tutorial ethos on the Rondebosch campus, together with further research on the function and development of this academic resource, follows.

DEMOGRAPHICS
The Varsity College trading division of the Independent Institute of Education traditionally works within a matriculant applicant pool with an average ‘D’ aggregate (Varsity College, 2007). Even at public tertiary education providers – traditionally the first port of call for the top matriculants – first year results are historically poor (Scott, 2000 cited in Pandor, 2006). Students struggle to maintain their commitment to studies as well as to bridge the gap between the secondary and tertiary environment. As such, it is understood that first year students in general – and the Varsity College student base in particular – require additional support during the transition to tertiary education. Specifically, Varsity College Rondebosch has a unique demographic amongst national campus trends. The campus is heavily weighted towards providing tutorial support for UNISA undergraduates, with Diploma courses comprising only a 12% share of the enrolled student body. Of the 1450 UNISA registered students on the Rondebosch campus, roughly 48% are enrolled in a commerce-based degree.1

OUTCOMES BASED EDUCATION
The tertiary education sector is poised for change. The government initiative – Outcomes Based Education (OBE) – will begin to affect our student demographic from the 2009 intake, bringing with it new challenges and requiring new academic adjustment strategies. As such, the applicant pool of students seeking admission to their baccalaureate degree (where assessment strategies are, crucially, not based on the OBE methodology) will be significantly altered, though much of the impact of this is, as yet, unquantifiable. The transition will be interesting and unpredictable. What can be anticipated, however, is the need for advance support mechanisms to be put in place to smooth possible effects of this transition before they become of issue.

1 The distinction between the Bachelor of Commerce (BComm) and Bachelor of Accounting Science (BCompt) degree is that a BCompt is a specialised ‘pure accountancy’ degree with a fixed course schedule, leading to a role as a chartered accountant.
Specifically, Accounting as a discipline of study in South Africa is poised in an uncertain position. At the time of writing this paper (September 2008), UNISA entrance requirements to the BComm/BCompt degrees are unresolved around the issue of the possible inclusion of entrance examinations or aptitude tests. Crucially, secondary school Accounting is not a prerequisite for entrance into the degree, though ACN101 is a base module. As research (Mazwi and Stack, 2006) shows, students who do not have an Accounts background tend to struggle in the transition to tertiary studies. Lecturer feedback (Lesch, 2008) has suggested that the skills deficit is by no means insurmountable, but merely tends to fall in the area of unfamiliar terminology or jargon. This is a skills gap that can, indeed should, be bridged through correct – and timely – intervention.

**ACN101 STATISTICS**

As can be seen from Table 1, Bachelor of Commerce (BComm) and Bachelor of Accounting Science (BCompt) students\(^2\) moved from a 42% pass rate in 2006 to a 69.9% pass rate in 2008.

<table>
<thead>
<tr>
<th>2006 pass rate</th>
<th>2007 pass rate</th>
<th>2008 pass rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>ACN101 42 %</td>
<td>ACN101 65 %</td>
<td>ACN101 69.9 %</td>
</tr>
</tbody>
</table>

This 27.9% average increase in the ACN101 pass rate over a three year period is remarkable. Since Rondebosch’s Accounting lecturer complement has remained largely the same over this time, the increase in pass rate cannot necessarily be attributed to a change in faculty. It is also a unique achievement when measured amongst success rates nationally (Varsity College, 2006-8). The academic standard of first year Rondebosch students over the past two years has also remained stable in its quality, with no instances of unusually high matriculation (high school graduation) results. If not attributable to external influences, we need to look to other causes for this performance increase.

**TEACHING AND LEARNING DEVELOPMENT**

In the past three years, student support strategies have shifted focus. A two pronged approach has been taken with regard to combating problematic results in the Commerce programmes. Firstly, academic support has become a full-time concern on the campus. Academic Development Co-ordinators (ADCs) were appointed in January of 2006 and tasked with prioritising academic support with a view to maximizing student and lecturer performance. A concerted effort was made to enhance knowledge of teaching and learning practices in the classroom through the use of lecturer development workshops, as well as individual evaluations and feedback sessions. These practices can be defined as prioritising an active classroom environment, as opposed to the chiefly passive learning styles of the past. This has become a top concern amongst education providers, and is widely seen as encompassing the best contemporary practices and yielding high academic success rates. As such, lecturers were challenged to include active and participatory student learning into their teaching methods. This has had encouraging results. However, since the Teaching and Learning emphasis has been administered across all faculties on the campus, it does not solely explain the very localised and unusual gains in student performance experienced in ACN101.

---

\(^2\) Both groups have ACN101 (Accounting 101) as a core module.
This brings us to an examination of the second prong of Rondebosch’s support strategy. A concerted effort has been made to support students in the base module for a Commerce degree. ACN101 has long been identified as a ‘benchmark’ of competence in financial modules. Since all students in the BComm/BCompt programmes are required to complete this module, results from this course historically give a strong indication of future student performance. It is due to this that extra support has been provided for students in this particular programme. Based on the poor performance of our students in this core module, a tutorial schedule was devised and rolled out in 2006. This consisted of a set of optional weekly classes in a small group format, where practical application of lecture concepts could be explored under the direct supervision of the lecturer. Run at different times in the week outside of standard class times to accommodate differing student schedules, the tutorials followed the recent movement in higher education towards the value of the small group environment.

Trends in recent years show that the use of small group teaching is increasing in universities. This is because, since early days, it has always been well-suited to the development of deep and meaningful learning at higher cognitive levels, but now it has been found equally beneficial for the range of professional competencies, personal skills and desirable attitudinal traits. More specifically, learning in interactive groups enhances critical thinking, problem-solving, communication skills, innovativeness, and both interpersonal and team skills. All of these are much in demand today with current external pressures and market forces affecting university practices (Matiru, Mwangi and Schlette, 1995).

For the purposes of this description, it becomes necessary to clarify the difference between the Rondebosh ACN101 tutorial programme and the week-long examination preparation and revision workshops.

Tutorials are practical, exercise-based classes that run on an ongoing basis through the semester. They run weekly, with each topic of discussion being taken from the previous week’s lectures. Thus, material covered in week three of lectures will form the basis of the tutorial material examined in week four of the tutorial programme. To accommodate differing student schedules as well as to ensure that numbers are kept manageable, tutorials are repeated four times in the week, with students being given free reign as to which support class they wish to attend.

Examination workshops, by comparison, are intensive preparation sessions, run only in the twelfth week of classes (revision week). Different lecturers are allocated to present these classes and each session is four hours long. Unsurprisingly, these classes are remarkably popular and attendance typically peaks at eighty percent of all registered students for the course (Lesch, 2008).

Strategic timing is required to implement the tutorials and examination workshops during the period when they will be most effective at reversing negative trends timely for examinations and ensuring attendance is strong by targeting students at the psychological peak of their examination anxiety. Correct timing is vital, since incorrectly placed programmes could have negative implications both for student performance and budget considerations. Observations (Lesch, 2008) have shown that, for examination workshops, the ideal period tends to fall within the last week of the semester. Student anticipation of the reality of the final examination, combined with the termination of official Varsity College classes – and, with this, lecturer contact – tends to motivate learners into taking a more active and responsible role in negotiating the success of their studies.

3 Griffiths (in Fry, Ketteridge and Marshal, 2000) notes that this is ‘any teaching and learning occasion which brings together between 2 and 20 participants.’
The tutorial timing is a more complex issue. Given the need for ongoing support, it is a clear imperative to begin the tutorial programme early in the semester as a preventative measure for problems that may otherwise surface. With lectures running on an eleven week, semesterised cycle, Rondebosch tutorials have, since their 2006 inception, been run from week three of the start of the class – a move designed to make allowance for two pertinent contextual issues. Firstly, this provides a much-needed period of adjustment for first year students – the majority of whom are freshly out of the school environment – to the structures and demands of tertiary education. Additionally, it allocates a three week cushion for the communication of basic skills, concepts and knowledge to the students in lectures. As theory suggests (Matiru, Mwangi and Schlette, 1995), the command of such base concepts and content is of vital importance for the overtly practical, exercise-based environment of the tutorial to be of benefit.

LECTURE AND TUTORIAL DISTINCTION

One of the major differences between the role of the lecture versus that of the tutorial falls in the emphasis on student participation. Whilst Teaching and Learning strategies have been implemented to increase just such participation at a lecture level, in the tutorial the onus is almost solely on the students to set the scope for the class. It should be stressed, then, that a tutorial is not – nor should be – a re-lecture. Students who wish to ‘catch up’ on material missed due to absenteeism should not use this as an opportunity to commandeer lecturer attention and request additional information on basic concepts. Rather, the tutorial should be run as an opportunity for providing further support, where the theoretical concepts absorbed in the lecture are put to practical use. As Sandra Griffiths observes, ‘The [tutorial] process is identified not as a didactic one but rather as a participatory experience in which students are encouraged to take responsibility, along with tutors, for their own learning’ (cited in Fry, Ketteridge and Marshal, 2000).

Students can bring their own questions to work through, under the supervision of the lecturer (and, if required, student tutor). Past papers, supplemented by lecturer-sourced questions, can also be utilised. Whilst it is appreciated that, in regrettably many cases, UNISA confidentiality agreements do not extend to passing examination papers on to Varsity College, we are fortunate to have a number of Commerce papers (often sourced from tutorial letters) that can be used in such a tutorial system. (We strongly encourage any campuses with alternate UNISA assessments to pool such material, so as to provide a national ‘bank’ of available resources.) The learning process itself is very much workshop orientated. Material is themed and linked to the topic covered in class the previous week. In this manner, a ‘revise and refresh’ approach is used to cement lecture concepts. The importance of this method has been noted by theorists.

The deeper learning that results from small group teaching occurs in two ways. Firstly, through revision, that is, the reinforcement of existing knowledge, and secondly, through re-structuring or the modification of previous knowledge into new conceptual framework. Revision takes place through discussion modes, mostly in tutorials, while restructuring is developed through deeper exploration, reflection and pilot testing, mostly in problem-solving activities with discussion…each participant’s knowledge is supplemented with information possessed by other members and then interpreted (Matiru, Mwangi and Schlette, 1995).

ROLE OF THE STUDENT TUTOR

Recognition of the student demand for extra tutorial assistance has prompted the move towards introducing additional lecturer support in the form of student tutors. Students who performed exceptionally well in their second and third year were approached in 2007 to assist with the running of the tutorial programme in both the Law and Commerce Faculties. Their role was defined as being a support to the lecturer, without having any primary responsibilities. During the tutorial, they are tasked with running focus groups, circulating round the class to aid student progress and providing individualised student support that the student-to-lecturer ratio would otherwise not enable.
As is always the case, not all students accept the challenge of higher education. Attendance is always a challenge, particularly in the case of a voluntary attendance programme. Further, with tutorial attendance often being associated with struggling students, there is a certain dynamic of social stigma that must be combated in the marketing of the programme. It is encouraging to note that, as tutorial culture on the Rondebosch campus has become cemented over the past two-and-a-half years, tutorial attendance has increased. Noticeably, with this increase in attendance, the pass rate has experienced further improvement. This clear and direct correlation between positive attendance and positive results should encourage further Varsity College efforts in combating student apathy. Instilling a culture of student academic responsibility should be of the highest priority on campus, with lecturers and support staff committed to working together in achieving these ends.

It must be acknowledged, though, that lecturers are also often overworked and their time is stretched by the end of semester. Administrative staff may not always be fully informed about the particulars of classroom dynamics. These factors, together with the above point that student attendance at tutorials is optional, suggest that value-add (from both a student performance and college financial perspective) is not guaranteed.

This brings us to the inevitable consideration of budget constraints. It is undoubtedly a strain on resources to provide such comprehensive support, going above and beyond the stipulated requirements as laid out in basic tuition agreements. As Griffiths notes, ‘[b]ecause of the relatively small numbers of students involved, the financial cost of the [tutorial] method can be high’ (cited in Fry, Ketteridge and Marshal, 2000). This being said, such expenditure can be seen as a proven investment in the achievement of academic excellence on campus – a factor that, no doubt, will be a draw card for students considering a tertiary education provider in the future. Motivation and marketing are clearly key to the programme’s success. Both lecturer and student ‘buy in’ is essential, and we have identified key areas where this can be achieved.

Again, as of 2008, there are no formal recorded statistics about which demographic group is attending the ACN101 tutorial programme, though empirical lecturer assessment (Lesch, 2008) suggests that tutorial attendance appears to be targeting successfully the desired pool of struggling students.

**TUTORIAL MARKETING STRATEGY**

The primary means of communication to the targeted student groups will always be through in-class lecturer promotion. Whilst this is effective in reaching the weaker yet diligent candidate, it is patently insufficient to reach the more problematic academic performers. Since there is a correlation between poor attendance and poor results (Cleary-Holdforth, 2007; Maxwell, 1998, as cited in Stephen, 2003), such students are often not present during the very classes where outreach attempts are being made to contact them.

It is important to note that the tutorial programme is not aimed solely at students in danger of achieving a failing grade in the final examinations, but rather has a more holistic view towards improving student performance at all academic levels. However, the pass/fail benchmark remains the most crucial towards improving student success and campus throughput rates, particularly in a foundation module such as ACN101.

In such cases of chronic student absenteeism, alternative methods of contact become necessary. Emails, phone text messages and posters are all valuable communication strategies that have been employed on the Rondebosch campus to boost student awareness of the tutorial programme option. Information of
registered students, identifiable by both class and degree, can be obtained across the Varsity College trading division on the Alias internal systems. Clickatell Mobile Solutions technology provides Rondebosch campus with a convenient online text messaging service that allows for messages to be sent directly to the mobile telephones of our students en masse. This service has been utilized, in conjunction with the more conventional methods of email and posters, with great success. For contacting the struggling student with financial constraints (and, therefore, limited access to email), it has proved invaluable.

SUGGESTIONS FOR FURTHER IMPROVEMENT

Lecturer feedback (Lesch, 2008) suggests that the primary desire for improvement of the Rondebosch tutorial system is successfully making contact with a wider student base, so as to avoid last-minute examination anxiety. Clearly, Varsity College’s dynamic with UNISA presents a unique challenge in this regard, as course constraints are fixed and weighted assessment is the sole prerogative of external assessors. However, there is much that can be done to empower the system at site level.

Lecturers (ibid) have recommended making the tutorial system central to Varsity College’s academic concerns from semester start. This can be achieved in several ways. An excellent starting point could be the formalised inclusion of the tutorial schedule on all Commerce timetables, as distributed at the start of the academic calendar. Not only would this dispel initial scheduling confusion, but it would also serve to cement student perceptions regarding the system’s centrality to Varsity College’s academic structures. Currently, the tutorial programme is viewed as an informal inclusion, disseminated on an ad hoc basis. Formalising its position can surely only enhance student academic perception and, as such, student success.

CONCLUSION

Varsity College is a market leader in South African private education, based on a publicly professed ethos of facilitating a well-supported small group learning environment. The piloted programme of tutorials at the Rondebosch campus has clearly raised the standard of academic excellence across its Commerce programmes. Whilst recognising that each campus has its own unique dynamic and challenges, there is strong motivation for Varsity College to endorse fully the development of this programme at a national level. Current academic theorists are in agreement about the benefits of this trend in higher education. ‘It is desirable that a student-centered approach with an open, non-threatening climate is acceptable to both staff and students, and the department is committed to this form of learning’ (Matiru, Mwangi and Schlette, 1995).

Whilst the ultimate impetus for success rests with the students themselves accepting responsibility for their learning, Varsity College must accept the responsibility of providing every feasible support opportunity available to its students. If this programme is rolled out with full endorsement from all levels of campus support staff, indications are positive that first year Commerce results may continue this positive trend of improvement at a national level – surely a goal that Varsity College, with its passion for academic excellence, will prioritise.

REFERENCES


Self-efficacy and performance in Mathematics at an African university

Tuntufye S. Mwamwenda - Long Island University, Global College, Durban

ABSTRACT

Mathematics self-efficacy is a person’s assessment of how good he or she feels he or she is in dealing with the subject of Mathematics. The purpose of this study was to examine a relationship between performance in Mathematics and students’ self-efficacy. The results showed a statistically significant correlation between Mathematics efficacy and one’s performance. The findings confirmed what other studies have previously reported. It was clear therefore that one’s self-efficacy can boost performance in Mathematics as well as in other subjects.

INTRODUCTION

The purpose of this study was to examine the relationship between self-efficacy and academic performance in university-based Mathematics at first year level. Before proceeding with the theoretical basis of the study, it is important that self-efficacy be defined. Self-efficacy is ‘one’s self-judgements of personal capabilities to initiate and successfully perform specified tasks at designated levels, expend greater effort and persevere in the face of adversity’ (Blake and Lesser, 2006: 655). Mathematics self-efficacy is a person’s assessment of their capability to solve problems in Mathematics, and deal with Mathematics related tasks successfully and satisfactorily (Pajares and Miller, 1994).

According to Bandura (1986, 1977), self-efficacy is instrumental in students concluding whether they are capable of dealing with a given task successfully. It is further pointed out that self-efficacy belief has an impact on the choices people make, the effort they exert in executing such tasks, and the level of anxiety experienced. Such a view is supported by Schunk (1989, 1991) who argues that students with high self-efficacy work harder and longer in problem-solving compared to their counterparts whose level of self-efficacy is rather low. Bandura (1997) further argues that as a result of self-efficacy belief, there emerges task choice, effort, perseverance, resilience and achievement. Once students entertain the fact that they are indeed capable of dealing with a given problem, they are invariably motivated to participate more actively, work harder, and persist longer should they experience barriers of one form or other.

Research findings have shown that self-efficacy is a powerful predictor of one’s performance in different domains (Efficacy, 2005). The success of students in school subjects, such as reading, writing, arithmetic, and thinking is dependent on their self-efficacy to the point that those who believe in their ability and potentiality will do better than those who lack such self-efficacy (Pajares and Schunk, 2001). In fact, Gore (2006) states that there is a growing body of research showing a relationship between self-efficacy beliefs and academic performance in general.
Many researchers have examined a relationship between self-efficacy and performance in Mathematics and other school subjects, and the majority found such a relationship (Marat, 2005; Blake and Lesser, 2006; Isiksal, 2005; Schunk, 1991; Simpson, Licht, Wagner and Stander, 1996; Skaalvik and Rankin, 1994; Randhawa, Beamer and Lundburg, 1993; Stage and Kloosterman, 1995). Williams (2006) conducted an investigation based on 131 high school students who were assessed on English, Mathematics, Reading, and Science. Students who reported a higher level of self-efficacy, also scored higher in the subjects tested. For some reason, the relationship was even more distinct in Mathematics (Williams, 2006). Collins and Bissell (2004) studied high school students on their performance in the study of Grammar and concluded that the higher their self-efficacy, the better they performed in Grammar. Along the same line, Blake and Lesser (2006) explored a relationship between Texas Assessment of Knowledge and Skills and self-efficacy. The results were that there was a correlation between those who scored high in self-efficacy and their performance on Knowledge and Skills.

In New Zealand, Marat (2005) researched diverse students’ self-efficacy and performance in Mathematics. There were 137 participants who completed the questionnaire and their marks in Mathematics and mid-examinations were obtained from the schools. The results showed that the correlations between self-efficacy and Mathematics were positive and statistically significant.

In a study of 236 (95 women, 141 men) university students studying remedial Mathematics during their first and second year, Stage and Kloosterman (1995) postulated that what mattered in students’ successful performance in Mathematics was their self-efficacy, belief, self-perception more than their previous experience in Mathematics or cognitive abilities. While there were no significant gender differences in belief, previous exposure to Mathematics (at high school level) was related to final examination marks in Mathematics for male students. As for females, there was a significant correlation between their beliefs and performance in the final examination. Stage and Kloosterman (1995: 308) write: ‘For this study, women who had more positive beliefs about the nature of mathematics and about their own ability were more likely to succeed’. Vrugt (1994) investigated a relationship between first year Psychology students’ self-efficacy and performance and their final examination marks. The results showed a statistically significant relation between self-efficacy and performance in the final examination. It is further reported that self-efficacy is not only related to course marks, but also to academic staff members’ performance, people’s performance with computers and use of computer programmes (Vrugt, 1994). In a study of 5th graders, it was reported that their self-perception was significantly correlated with their academic achievement in Mathematics, reading and general school performance (Simpson, Licht, Wagner and Stader, 1996). In this context, it is argued that children’s ability-related self-perceptions can serve as predictors of academic achievement (Simpson et al 1996). Eshel and Kurman (1991) perceive a symbiotic relationship between self-efficacy and academic achievement so that self-efficacy affects attainment as attainment affects self-efficacy. On this ground, they argue that perceived ability is significantly associated with academic achievement.

Pajares and Miller (1994) examined variables such as gender, high university Mathematics and self-efficacy as predictors of achievement in Mathematics. Self-efficacy emerged as a better predictor than all the other variables. In the study men had stronger self-efficacy than women and as such their performance was superior to that of women. Therefore the gender differences are principally attributed to self-efficacy.

Bandura (1986) postulates that as part of self-efficacy, people engage in tasks for which they are confident that they have the necessary competence and that where self-efficacy is lacking, such tasks are not generally attempted. People associated with a high level of self-efficacy are characterised as pursuing a relatively high level of performance and do not easily get discouraged in the activities they have committed themselves to accomplish (Vrugt, 1994). In whatever they do they are guided by excellence, they look for new solutions, and are prepared to persevere when they encounter difficulties (Randhawa, Beamer and Lundburg, 1993).
It can be reasonably argued, therefore, that successful performance in Mathematics and other academic subjects goes hand in hand with self-efficacy (Stage and Kloosterman, 1995). In view of this, it can be argued also that what matters most is not what people can do, but their self-efficacy in which they hold high confidence in their capabilities (Bandura, 1986). ‘How people behave can often be better predicted by their beliefs about their capabilities than by what they are actually capable of accomplishing’ (Pajares and Miller, 1994).

In the context of Mathematics, as children grow and are exposed to the learning of Mathematics, they develop the attitude of either being capable or incapable of solving mathematical problems (Efficacy, 2005). Such attitude or self-efficacy is influenced by a number of factors which may be personal, environmental and behavioural (ibid). Whereas in a school context, the attitude or self-efficacy develops as a result of making a comparison between one’s performance and that of peers (ibid). It may also be as a result of how they perform in mathematics activities and the feedback they receive from parents, peers, and teachers (ibid).

Students, whose perception is high, are characterised by taking Mathematics as a challenge; they persevere when they experience problems and exert themselves in seeking a solution which pays off with more success in their effort (Bandura, 1986). On the other hand, students who are not sure about their capability in Mathematics have a tendency to despair the moment they experience problems and quickly give up trying, as a mode of keeping their self-worth (ibid).

While numerous studies have examined the relationship between self-efficacy and performance in Mathematics in Western countries, hardly any studies of this nature have been carried out in African countries. Given the importance of self-efficacy and performance in Mathematics, it is vital that similar studies be carried out among African university students. It was on this understanding, that the present study was conducted. It aimed at exploring a correlation between university students’ performance in Mathematics and their self-efficacy.

**METHOD**

**Sample**

Participants in this study were first-year mathematics students registered at the then University of Transkei in South Africa, (now Walter Sisulu University). The total sample was 76 (43 women and 30 men) students whose age ranged from 16 to 34 with a mean age of 20 and a standard deviation of 3.

**Questionnaire**

As part of self-efficacy, participants were asked to indicate on a scale ranging from excellent to satisfactory how good they thought they were in Mathematics. Each category was given a mark symbol of A B C D E, which is generally the case in the matriculation examination. In this case if a participant thought he or she was excellent in Mathematics they got a symbol A whereas the one who said they were good got a symbol C. The symbols for statistical analysis were further converted into the equivalent numerical figures as interpreted by the Matriculation Examinations Board. For example, an A symbol is equivalent to marks ranging from 75-80% whereas a C ranges from 55-64%. For the purpose of this study the mean of each range was used as a mark obtained by the student.

**RESULTS**

The purpose of this study was to examine the extent to which self-efficacy can be used as a predictor of students’ performance in a university mathematics course at first year level. By means of a Pearson-Moment Correlation Coefficient, a statistical analysis was carried out to see whether indeed such a
relationship does exist. Table 1 shows the results of the analysis. Correlations were statistically significant for both female (r (33) = 0.77, t = 6.9, p ≤ 0.001) and male (r (28) = 0.66, t = 4.7, p ≤ 0.001) students in terms of their self-efficacy and performance in a first year university mathematics course.

Table 1
Pearson Correlation Coefficients Between Self-Efficacy And Performance in a University Mathematics Course For Female And Male Students

<table>
<thead>
<tr>
<th>Participants</th>
<th>df</th>
<th>Corr. Coefficient</th>
<th>t2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female Students</td>
<td>33</td>
<td>0.77</td>
<td>6.9 xxx</td>
</tr>
<tr>
<td>Male Students</td>
<td>28</td>
<td>0.66</td>
<td>4.7 xxx</td>
</tr>
</tbody>
</table>

xxx p < .001

Discussion

Research has amply shown that there exists a relationship between Mathematics achievement and self-efficacy. The relationship is such that those with self-efficacy, which is confidence in one's capability to engage in a given task successfully, are successful at subjects such as Mathematics (Blake and Lesser, 2006; Williams, 2006). In view of this, the objective of the present study was to test the hypothesis that African university students' performance in Mathematics would be predicted on the basis of their self-efficacy.

As shown in the analysis of data, there was a statistically significant correlation between self-efficacy and Mathematics performance for both university women and men students. It was evident therefore, as indicated in the literature review, that performance in Mathematics by African students can be predicted on the basis of their self-efficacy. The findings of this study confirm the underlying philosophy of self-efficacy in which it is argued that what matters is how people perceive their capability for successfully dealing with a task at hand (Marat, 2005; Pajares and Schunk, 2001; Bandura, 1986). Such perception is often a better predictor of their capabilities than their natural abilities (Williams, 2006; Blake and Lesser, 2006; Bandura, 1986; Pajares and Miller, 1994; Stage and Kloosterman, 1995).

Moreover, the findings are a further confirmation of similar studies in which it has been reported that self-efficacy is significantly associated with successful performance in Mathematics at various ladders of formal educational development. For example, in a study of Mathematics performance at University, Stage and Kloosterman (1995) reported that there was a significant correlation between their self-efficacy and their final year marks in the course (Vrugt, 1994). At primary school level, Simpson, Licht, Wagner and Stader (1996) concluded that grade 5 pupils' school performance could be predicted on the basis of their self-efficacy. It was in the context of this overwhelming evidence supporting a relationship between self-efficacy and academic achievement, that Pajares and Miller (1994) were compelled to conclude ‘It should come as no surprise that what people believe they can do predicts what they can actually do. How could it be otherwise?’

Conclusion

In this study, it has been shown that what researchers have reported about self-efficacy and performance in Mathematics in the United States, United Kingdom and elsewhere also holds true among African university students studying Mathematics. While variables such as gender and prior experience in Mathematics are associated with performance in Mathematics, self-efficacy appears to be yet another powerful indicator.
Along this line, Blake and Lesser (2006) argue that while it might be difficult to measure students’ affective aspects, there is no question that they have an impact on their interests in their mathematics performance and mathematics-based career. Furthermore, Pajares (1996) and Schunk (1995) have shown that self-efficacy has influence on one’s academic motivation. Once students are persuaded in their minds, that they are capable of handling a mathematical problem, they work harder at it, participate more actively, and persist longer, should there be difficulty in arriving at a solution (Bandura, 1997; Efficacy, 2005). Without pontificating a causal-effect relationship, it is within reason to conclude that the educational and research implication is that there is a need for mathematics educators to focus on self-efficacy as one of the ways performance in the subject can be improved.

REFERENCES


Co-operative task design and delivery: Moving staff and students

James Garraway and Cecilia Jacobs – Cape Peninsula University of Technology, Cape Town, South Africa

ABSTRACT
This paper is concerned with curriculum renewal in departments at a South African higher education and training institution with a career orientated focus. The driving forces for curriculum change derive, firstly, from government documentation which itself draws on aspects of the need for new knowledge workers in industry described by Gibbons et al in 1994. The features of such workers would be their ability to apply transdisciplinary knowledge in flexible ways to solve problems. Secondly, there is a need to retain students in the system and to help scaffold their learning through providing a workplace focus and fostering learning to learn skills. In an attempt to meet these needs co-operative staff groups were set up to design interdisciplinary, work-related tasks with associated explanatory and guiding criteria. In observing and talking to staff developing these tasks, difficulties were detected in working co-operatively, moving from evaluative to learner-support criteria, integration and allowing for more learner-centred control in assessment.

CONTEXTUAL BACKGROUND
This paper describes the initial findings of a project to implement integrated, criterion referenced assessment into a South African higher education and training institution with a career orientated focus or as referred to in this paper ‘the Institution’. It is a work in progress. The first question that needs to be addressed is ‘Why should we change the curriculum?’

Developed society is in a process of changing and the changes are reflected in the institutions, including universities, which make up that society. Post-modern society has a tendency towards pluralism, diversity, volatility, uncertainty of outcomes and transgressivity (Nowotny, Scott and Gibbons, 2001). Previously separate institutions such as science, politics, culture and industry now more readily inter-penetrate one another and even the notion of the ‘nation-state’ is being eroded both from the top (for example, in the formation of blocs such as the European Union) and from the bottom through diversity (Nowotny et al, 2001). In 1994 and again in 2001 Nowotny, Gibbons, et al coined the now familiar term ‘mode 2’ and mode 2 society in an attempt to pin down a move from a more regulated society of separate entities, a mode 1 society, to one in which boundaries were continually being crossed and new knowledge, mode 2 knowledge, was being produced in the context of application (Gibbons, Limpoges, Nowotny, Scott and Trow, 1994; Nowotny et al, 2001).

In mode 1, problems are set and solved in a context governed by the largely academic interests of a specific community. By contrast, mode 2 knowledge is carried out in the context of application. Mode
1 is disciplinary while mode 2 is transdisciplinary ... mode 1 is hierarchical and tends to preserve its form, while mode 2 is more heterarchial and transient ... mode 2 is more socially accountable and reflexive. It includes a wider, more temporary and heterogeneous set of practitioners, collaborating on a problem defined in a specific and localized context (Gibbons et al, 1994: 3).

Co-evolving with mode 2 knowledge and society are scientific and technological developments, for example, advances in telecommunications, which both enable and are enabled by mode 2 knowledge production (Nowotny et al, 2001:33).

Stromquist and Monkman (2000) and Gibbons (1998) suggest that universities will have to become different sorts of places in response to globalising influences. Firstly, there is an imperative to form alliances with industry in research projects so as to better serve the need for knowledge development for economic advantage. Secondly, there are changes in undergraduate courses which begin to reflect the sorts of integrated knowledge and qualities needed in new, highly competitive workplaces.

Gibbons (1998: 40) had this to say on the subject of new curricula:

New curricula can no longer be intellectually driven to the extent they have been. To the intellectual content now needs to be added suitability for purpose ... in problem solving, in interpersonal communications and learning how to learn ...

In South Africa over the last six years there have been pushes from government to change the current approach to higher education. Broadly, this has involved a change from subject teaching towards subject orientated goals, to more marketable programme teaching towards more workplace orientated goals. This shift was initially signalled in the National Commission on Higher Education Report of 1993, and later in the Education White Paper 3 of 1997 and the National Plan for Higher Education in 2001. Muller and Subotzky (2001) claim that much of the focus for change in higher education was influenced by the work of Gibbons et al with the publication of their book The New Production of Knowledge in 1994.

**CURRICULUM RESPONSES**

The Institution is a medium sized (approximately 9 000 students), career focused higher education institution situated in the lower middle class/working class areas of the Western Cape. It offers degree courses predominantly in engineering, applied sciences and business studies.

In 2001, as part of a curriculum development process, the Institution embarked on an ambitious project to change approaches to assessment. Traditional assessment practices at the Institution have been predominantly summative (pass/fail), subject-based and tacit. The re-curriculation process has involved a shift to more formative (guiding towards attainment), transdisciplinary (across subjects and including critical outcomes) and transparent (open to learners’ scrutiny) assessment practices. These shifts were derived from national (South African Qualifications Authority [SAQA] 2000) and international (Coates, 2001) trends in changing assessment practices. The approach to assessment taken by the Institution can be summed up as ‘integrated assessment’. This is assessment which:

- cuts across discipline boundaries by including the critical cross-field outcomes and sections of other subjects
- simulates complex occupational roles. In other words it reflects the sorts of problems students would be expected to deal with in the workplace.
- can be broken down into a number of smaller sub-tasks which may be discipline-bound. However, the important factor is not whether or not students can successfully perform each of the discipline-based
assessments but whether they can integrate their knowledge in performing the integrated assessment. To some extent the sub-assessments will be formative towards the achievement of the larger, integrated assessment.

- is criterion referenced. This means that what counts as an acceptable response to the assessment, the assessment criteria, are described and handed over to the learners before they do the assessment.

This shift is of importance to the Institution for two reasons. Firstly, it wishes to develop in its students the ability to assess their own performance and to monitor their progress. The development of this ability - which is an important aspect of ‘life-long learning’ - is an educational aim of the Institution. It is also an aim of other higher education institutions across the world. According to Tight (1996) the ideal of life-long learning was adopted as a master concept by UNESCO in 1970. Secondly, there is the wish to make assessment tasks more authentic in terms of what learners will be expected to do in the world as they progress through the institution. This is in line with Gibbons’ theory of mode 2 knowledge production outlined in a paper delivered at the UNESCO World Conference (Gibbons, 1998).

The assessment task was at the level of a project or an assignment typically given after a significant block of teaching. In writing criteria lecturers had to state up-front what counted as knowledge in both the discipline and in the workplace. And where they were talking about the workplace they had to work co-operatively as no one subject could cover a workplace problem. The criteria were co-operatively planned in workshops, then graded. By grading it is meant that the difference between a pass, good, and fail for a particular criterion had to be described in student-accessible terms. The criteria had to include the critical cross-field outcomes (similar to Britain’s key and Australia’s Mayer competencies).

**WORK IN THE DIFFERENT DEPARTMENTS**

The data was collected on tape by the authors during staff planning and debriefing sessions on the integrated tasks and in interviews with students about their understanding and ability to work with criteria. These texts were transcribed and segments selected which underlined the main processes emerging. The tasks were: Design a parking lot on the campus (Civil Engineering, Year Three), Design a steam plant to produce electricity (Mechanical Engineering, Year One), Design a display/advert for ‘Lenin’ sunglasses (Graphic Design, Year Three), and Design a low cost house suitable for a family of 6 (Building, Year One). The primary role of the data collection was to help us guide staff in co-operative task development. The data we collected on the integrated tasks seemed to sit, broadly, at some point on each of the following four trajectories.

We located two axes of description for co-operation in task design and delivery. The first is that of staff and their willingness and perceived ability to work co-operatively with one another. This is a necessary movement from individual more subject orientated platforms to new shared and co-operative platforms (Gibbons, 1998). The second is that of staff and student co-operation in which staff members are prepared, and students ready, to pass some of the control for assessment to their students.

**Staff individual subject to more co-operative platforms**

Many departments, at least where issues around teaching and learning occur, are individually orientated. Individual staff report on what they are doing in the classroom to a senior lecturer/manager. Staff meetings focus primarily on operational issues, such as student pass rates and problems, staff development, teaching loads, and so on.

In working on the integrated tasks co-operatively many staff were clearly uneasy with one another. One group continuously referred to one another in formal mode by their surnames, though they had been
colleagues for two years or more. In another group staff believed that collaboration could expose them to critique:

They do not want other staff to know how they do it (teach), that this is mine, the subject. They do not want to talk about teaching and learning so that others get the impression they don’t know what they are doing. They make it clear they do not want to be interrupted in the classroom.

In general staff had difficulties with sustaining group planning. As one group member expressed it:

I think initially we started off with great intentions of meeting on a regular basis but as the semester progressed, due to whatever reasons, time constraints, we eventually went off to an individual sort of subject approach.

This approach contrasts strongly with, for example, institutions like Alverno College (Jenkins, 2000) where staff work co-operatively on curriculum tasks in interdisciplinary teams, often at set times each week. The whole notion of interdisciplinarity is embedded as part of the ethos of the institution; such teamwork seemed to be ‘part of the job’ with clear endpoints, rather than something separate which was foisted onto them.

Reflection/ learning orientated → Endpoint competency/evaluation orientated

In this trajectory we looked predominately at how the task was assessed. Where learners were involved significantly in assessing their work against meaningful and rich criteria, which often involved benchmarking and the inclusion of critical cross-field outcomes such as problem solving and infolit, the task would fall to the left of the trajectory. Competency referred here to the learners ‘getting it right’ according to more ‘bare’ technical criteria, often related to industrial standards. On the competency side the criteria were more a means to test if learners had got it right than to guide them in their learning.

Criterion referenced assessment was seen predominately as an assessor tool. Comments such as ‘learners need to use the criteria to get it right’ and ‘if they make a balls-up they can’t come crying to me’ supported the use of criteria as an evaluative tool. The criteria tended to include lists of task-related competencies rather than more cognitive skills such as reflection, problem solving, systemic thinking, and so on. In general lecturers had great difficulty with explanatory criteria which could be used by students to direct their own learning.

Where staff groups did attempt to come up with explanatory criteria students often found them too vague or complicated; Carlson et al (2000) working on using criteria in Australian universities experienced similar problems with student understanding but got around the problem by providing learners with exemplars of the criteria in texts.

Predominately subject organized → predominately workplace problem organized

This trajectory referred primarily to how the task was designed and what its relationship was to the subjects. Where subjects were the primary organisers then the task was probably more interdisciplinary in nature and more transdisciplinary where the problem was the organiser.

In all the tasks it was found that lecturers were concerned with the inclusion of as much subject knowledge as possible; the question raised in meetings was often ‘have we got enough maths/drawing in the project?’ In one instance we were told outright that the project ‘would not be done in industry’. What was important for the lecturers was that the task taught underlying reasoning necessary to operate in that field. The task was predominately a teaching tool rather than a real/simulated complex industrial problem.
One area with which we struggled was to get the lecturers to see the project as an integrated whole. They were generally quite adamant that the final product from the student would be marked in subject sections according to their different areas of expertise. As one lecturer put it ‘it is years since I last studied design and I would not know how to assess it’. If it was to be fully integrated then, as the lecturer below indicates, there could be dire consequences:

(Task: Design a steam plant for a particular purpose and output)

Derek: .... how a lecture when they sit down. I don’t know what is taught in design. I left it 20 years ago and I kind of work intuitively now. I can’t tell what a student has heard in a classroom or a lecturer has taught that student in the class. So I can’t assess them against what they’ve heard in the classroom. So specific information like the thermodynamics in the motor, how will that be assessed?

Cecilia: That will have to be assessed by the sub-task (subject task) which is very thermodynamics-specific, that’s my sense.

Derek: But what about all the other groups that are not being assessed by Oscar (the thermodynamics lecturer)?

Cecilia: Oscar will simply assess, for example, the group he has been mentoring and somebody else will assess another group. So any lecturer involved in an integrated project will assess two or three reports.

Derek: How will they assess?

Leon: That’s the whole reason we are coming up with these three columns, to say that you and you and you and you assess communications, assess design principles, assess argument and assess that so when you look at it you don’t go ‘I am fluids, cheerio to thermodynamics, cheerio to the design…’

Derek: I am questioning how that will be achieved.

Keith: Well, you will have to have correct criteria for different pieces.

Derek: If you just don’t know about the thermodynamics of a boiler.

Leon: Well you’ve got, I mean, there is no way a student is going to know more than you do. I am serious. So what the student puts in his report is not going to fly straight over your head. It should be well within anyone in this meetings grasp to see, if they say the aeroplane weighs 300 tonnes and has a lift of two Km you know they are talking rubbish, and don’t know what they are on about. So, like I say, I don’t think the students are going to put anything in their report which is going to be beyond any of our …

Cecilia: Every, every lecturer at S3 (year two, second semester) level should know how and where his particular subject area fits into this project.

Derek: I just get a sense you are going to get a watered down, um, practical, um, project, that is going to end up being a communications exercise which might as well be assessed by the communications lecturer.
Leon: There’s ‘die klip in die bosse’! (There’s the cat amongst the pigeons!)

The first thing this transcript tells us is that boundary crossing between subjects is not easy. There is a real sense of others having expertise for which they alone should be responsible, and that crossing boundaries and transgressing on others’ subject areas is necessarily a dangerous thing (one could, for example, misread or fail to understand the subject). The result of transgression across subject boundaries is likely to be a sort of contentless object which has little importance in the field of engineering training. There seems to be a difficulty with recognizing that the object, the problem or task at hand, demands the reconfiguration of the subjects in new ways so that they form a new whole around the integrated task.

This leaves the question of how to push for collaborative work and knowledge reconfiguration amongst our staff where there is an entry-price to this new domain; it costs and it hurts, and the product may be integrated into nothingness.

Lecturer directed → criterion directed

This trajectory involved the locus of control over what was counted as acceptable in the project. Firstly, it involved the extent to which learners were to be allowed to ‘take control’ of their own learning, via self and peer assessment against criteria.

The following report from a member of the curriculum development team, who was attempting to organise a session in which learners worked with a set of criteria on their first draft of an integrated task, is illuminating in illustrating difficulties with control.

I started to go through the criteria and the sub-criteria, pointing out where learners should fill in their comments. At this point the lecturer said, ‘OK, enough of this’ and pointed to a student in the back row and asked, ‘You! What’s your name? Have you got a draft? Why not? Who are you working with? Well go and sit next to him?’ About half the students gathered around the lecturer who started telling them what they must do in their assignments, asking them if doing such and such was good enough and why not. He started telling them about a good introduction (which was not in the criteria) … the lecturer was happily taking on this role as supervisor rather than using the criteria.

The narrative serves to illustrate a problem with such projects which both cross subject boundaries and move responsibility for assessment to learners – they are just too volatile and uncontrollable. It is also, seemingly, difficult for learners to take over the mantle of control for the project by relying on interpreting the criteria.

Yet we find that at least in some knowledge areas, such as graphic design, peer evaluation may be essential as part of a fuller assessment. In interviewing graphics students on 7/8/2002 the conversation essentially described the difficulty students had in being marked by their graphics lecturers. The lecturers could, broadly, say whether or not someone was technically competent but could not necessarily make a value judgement between good and excellent. At first students avoided trying to pin this quality down, by saying that some people are just ‘good’ or ‘creative’. But we found that there was a way of adjudging work and that was to put it to fellow students and ask them to adjudge. They felt that these students were of a more appropriate age group for the products they were designing and were less contained by what the students saw as ‘hidden’ academic standards.
We will continue with our integrated task initiative, and engage at least some of our lecturers in reflective development cycles, aimed at further task development. However, we are well aware of the dangers of radical integration before learners have grasped the essentials of subject knowledge needed to solve problems and implement procedures, as pointed out by Muller (Muller and Subotzky, section 2, 2001). Thus integrated work needs to be preceded by, and matched by, parallel subject task work.

If such integrated tasks are workplace orientated, then they can begin to apprentice learners to the sorts of complex knowledge application ‘likely to be encountered in real life’, as well as provide a coherent rationale for studying the separate subjects, particularly for those first year students most vulnerable to failure.

The essential base to such integrated tasks is co-operative work by lecturers. It is only through co-operative work that lecturers can begin to share what they do in their separate subjects and come up with representative criteria that they all understand and in which they have confidence. Importantly, such criteria would go some way to allowing lecturers to relinquish control of assessment to learners. In this way it is hoped that lecturers will be able to focus their subject teaching towards some real-life endpoint and be themselves able to assess the whole project. As pointed out earlier, it is through the use of such criteria that we hope to develop in students the ability to ‘learn how to learn’.

Co-operative assessment design from staff requires that this work is prioritised by departments and the institution, and that regular time is set aside for it (Jenkins, 2000), a problem we have not managed to resolve in our institution. It also requires a commitment on the part of staff to self-reflection, review and quality (Smith et al, 1997), qualities which require time to develop and leadership and rationale from curriculum developers. On the other side of the coin, we also need to train students on how to cope with such curricula, a process we are just beginning to explore.

REFERENCES


ABSTRACT

A significant change within South Africa’s restructured higher education landscape has been the conversion of technikons into universities of technology. This paper explores the position, role and functions of universities of technology and the extent to which academic staff are experiencing a University of Technology (UoT) as different to a technikon. Conversations with eleven academic staff members at one UoT indicate that the change is perceived largely to have been about the re-branding of the institution-type and re-positioning it within the market sector. An analysis of the views of these academics about how the roles and functions of a UoT should differ from those of a technikon and from those of a traditional university provide insights into how UoTs are likely to function within the new higher education landscape. We argue that if South Africa is to maintain a diverse higher education sector, the roles and functions of different ‘types’ of institutions should remain distinct. UoTs should resist the urge to homogenize with established universities.

INTRODUCTION

Within South Africa’s restructured higher education landscape, a number of initiatives have been implemented to create a single unified public higher education sector. A significant change, proposed by the Committee of Technikon Principals (CTP) and announced by the Minister of Education in October 2003, is that Technikons are now known as Universities of Technology (UoTs). Other changes have included the merging of many public higher education institutions, and the creation of three ‘types’ of institutions; traditional universities, hybrid comprehensive universities and universities of technology, as prescribed by Professor Kadar Asmal, the Minister of Education in October 2003 (CTP, 2003a). Through this process it would seem that the need for a diverse range of higher education institutions to serve different purposes has been accommodated. Within this restructured milieu, a few universities have remained unmodified, though probably not unaffected by the changes within the sector.

While all of these developments have enormous implications for those working and studying within the sector, this paper is focused on issues relating to the transition of technikons into UoTs. Our interest lies specifically in considering the extent to which academic staff experience a UoT as different to a technikon, and to explore the implications of this for the sector. After a review of the process whereby UoTs came into being, this paper turns to consider how eleven academics within one UoT understand the new institutional identity.

During the time of discussions between the CTP and the Minister of Education (CTP, 2003a), there were very particular reasons given for the name change from technikon to UoT. While some of these related to
national and international market perceptions of technikons, there were also various other reasons given
for advocating the change. However, as will be shown by the data, thus far the focus of academics’
understanding within one particular institution seems predominantly to have been on issues related to the
revised nomenclature and the resultant ‘marketing exercise’ to re-brand the institution. While it is fair to say
that it is necessary to position strategically the UoTs within the market, our view is that in undertaking the
restructuring, the former technikons should also attend to other key issues that will serve to make their new
UoTs distinctive from the old technikons. Further to this, we also argue that if South Africa is to maintain
a diverse higher education sector, the roles and functions of these different ‘types’ of institutions should
remain distinct and UoTs should resist the urge to move closer to the purposes of established universities.

TECHNIKON FOCUS

The Department of Education, Report 150, describes technikon education as being ‘at the tertiary
educational level and is aimed primarily at the provision and development of personpower for promoting
and practising technology’ (Department of Education, 1997b). One of the two key strategic objectives
of technikons is described as follows: ‘Technikons must prepare people for a particular occupation or
industry and are oriented towards the practice, promotion and transfer of technology’ (Department of
Education, 1997b). Technikons evolved out of the Colleges for Advanced Technical Education in 1979,
and a number of new technikons were established until there were eventually fifteen in South Africa, all
existing to serve a common purpose.

Kraak (2006) states that ‘one of the defining features of the ex-technikon sector in South Africa has been
its production of skilled personnel to meet the intermediate skill needs of the national economy’. Further
evidence of their over-riding purpose to meet ‘intermediate skills needs’ is manifest in the nature of their
offerings, particularly prior to 1993 when they were not entitled to offer post-graduate programmes. With
the rapid advancement of technology and the growing need for high-level industry-focused programmes, a
decision was made to extend technikon programmes to include under-graduate and post-graduate degree-
awarding offerings (Department of Education, 1993) and to encourage the advancement of applied
research for the benefit of the industries it served. Prior to this, technikons had only been able to offer two
year certificates and three year diplomas. Clearly this impacted on their capacity to conduct research,
as ‘technikons could neither attract the calibre of students to enrol for postgraduate degrees nor the staff
members who could conduct research and supervise postgraduate studies. This was a major impediment
for the prospect of research development at technikons’ (Ogude, Netswara and Mavundla 2001). Chand
and Misra (1999) suggest that the granting of degree-awarding status has played a large part in bringing
the universities and technikons closer ‘since cross-movement between the two sectors at the post-graduate
level now became a possibility’.  

The CTP (2002a) describe technikons as offering a ‘career-focused, hands-on approach to education and
training and the delivery of graduates with knowledge that is immediately relevant in the workplace’. This
committee also pointed out (2003b) that ‘technikons provide a broad variety of learning opportunities
focused on the needs of a developing economy, they also have an ethos of being more employer-centred
and are continuously striving to make their students more competent, more employable, more directly
supportive of entrepreneurial activities and economic growth’. The central thrust and purpose of technikons
thus seemed to be their very strong ties with industry and their commitment to providing education and
training that included workplace experience (now called work-integrated learning) as part of their
programmes, and produce work-ready graduates. Why then the need to change the status of technikons
when their role and functions had been clearly defined and widely recognised within South Africa?

---

4 The extent to which the new Higher Education Qualifications Framework encourages or impedes such articulation is not the
subject of this paper.
Although UoTs had been conceptualised some years earlier, the current government only granted permission for technikons to change their status to UoTs in 2005, a time when the higher education sector was undergoing dramatic changes. The impact of globalisation, technology transfer and, in South Africa, a government committed to ridding the higher education sector of the divisions within it, all placed pressure on this sector to transform. During the apartheid era, the rigid divisions between universities, technikons and technical colleges were cemented by the Van Wyk de Vries Commission of Inquiry into Universities in 1974 (Kraak, 2006). The boundaries, rooted in the social order of apartheid, had clearly become unacceptable within the changed context, and the new government policy framework sought to address issues of fragmentation and inequity within the higher education sector.

The National Commission on Higher Education (NCHE) Framework for Transformation was the culmination of a process of investigation and consultation that began with the establishment of the NCHE in February 1995. Included in the NCHE’s terms of reference was the undertaking to advise the Minister on the size and shape of higher education (Department of Education, 1996). The Commission report pronounced that ‘the system should recognise, in name and in broad function and mission, the existence of universities, technikons and colleges as types of institutions offering higher education programmes. But these institutional types should not be regarded as discrete sectors with mutually exclusive missions and programme offerings’ (Department of Education, 1996). It was unclear at this stage what the differentiation between the institution-types would be. The Education White Paper 3 – A Programme for Higher Education Transformation, published on 24 July 1997 and influenced by the NCHE report, outlined the broad policy framework for Higher Education and stated that the Higher Education system was to be planned, governed and funded as a single national co-ordinated system (Department of Education, 1997a).

There was some resistance to the proposed changes, and a concern that the closely-guarded autonomy of universities was being undermined by these government initiatives. In this regard Ramsden states that ‘Mass education is expensive and it attracts greater attention from its patrons – especially governments committed to reducing public expenditure. It implies accountability to stakeholders and open economic, technological and intellectual interchange with them, not closure and insularity’ (1998). Kemmis (cited in McKenna and Sutherland, 2006) cautions that education is increasingly being functionally integrated into the imperatives of the economy and occupational system and to the political and legal administrative systems, under the influence of the steering media of money and administrative power.

**FROM TECHNIKON TO UNIVERSITY OF TECHNOLOGY**

**HOMOGENIZATION OF THE HIGHER EDUCATION SECTOR**

Added to the concern that economic efficiency drives would reduce institutional autonomy, came other growing concerns, including the view that a single unified system was leading to an increasingly homogenous provision within higher education. Kraak (2006) refers to ‘academic drift’, as ‘unintended and often opportunistic movement of technikon-type institutions up the qualification hierarchy and across the academic/vocational divide in search of new learner markets, programme fields and income sources. In moving upwards in this way, institutions such as technikons begin to mimic key attributes of university-based institutions’.

We would suggest that there has been an element of drift in more than one direction, as both university and technikon programmes have seemed to be moving across the ‘academic/vocational divide’. As technikons have ‘drifted’ closer to traditional universities, so too are these universities increasingly offering workplace focused curricula and programmes that include practical experiential learning components previously largely the domain of technikons.
A comprehensive list of arguments in favour of differentiation are given by Van Vucht (2007), some of which we will draw on here. A diversified system allows access to a broader range of students in terms of educational background of those students and approaches to learning. Homogenization decreases the extent to which the higher education sector can address the increasing specializations of the labour market. Institutional specialization, according to the Carnegie Commission (1973, in Van Vucht, 2007), allows institutions to focus and thereby become more effective. Diversified higher education systems can ‘produce higher levels of client-orientation (both regarding the needs of students and of the labour market), social mobility, effectiveness, flexibility, innovativeness, and stability’ (ibid).

As a way of reviewing the higher education landscape, the then Minister of Education requested the Council on Higher Education (CHE) to provide him with a set of concrete proposals on the shape and size of the higher education system. In ‘Towards a New Higher Education Landscape: Meeting the Equity, Quality and Social Development Imperatives of South Africa in the 21st Century’, usually referred to as ‘The Size and Shape Report’, the CHE reported that, ‘the inherited system is not effectively responding to the new needs of the country and it is essential to reconfigure it to serve the new democracy’ (Council on Higher Education, 2000). There was also recognition by the CHE appointed task team that ‘the pervasive dysfunctionality that characterizes parts of the higher education system reduces its great potential’ (Council on Higher Education, 2000). This ‘dysfunctionality’ was spelt out and some of the problems were identified: the poor student retention and success rates; skewed racial and gender distribution of academic and administrative staff and students in certain fields; fragile management capacity; and low research outputs at most institutions. One of the most controversial recommendations in the Size and Shape Report was the proposed implementation of ‘a new three-tiered institutional landscape’. The three institutional types were defined primarily by prescriptions imposed on their core teaching and research functions (Kraak, 2006).

Given the concerns expressed in the report (including those that are not the focus of this paper), a National Plan was published in 2001. One of the intentions of this plan was to shape the sector into one that would better address the broad range of social and economic needs of South Africa. This is expressed as a strategic objective ‘to ensure diversity in the organisational form and institutional landscape of the higher education system through mission and programme differentiation’ (Department of Education, 2001). Through the National Plan, the Ministry expressed concern that despite its request for ‘institutions to locate their plans within a strategic framework informed by the institution’s location and context and its strengths and weaknesses’ it was evident ‘that many institutions aspire to a common “gold” standard as represented by the major research institutions, both nationally and internationally’ (Department of Education, 2001).

**SIMULTANEOUS MERGER PROCESS**

The CHE recommended that the restructuring of the higher education system to ensure its sustainability, including in particular, the efficient and effective use of resources, required a reduction in the ‘present number of institutions through combining institutions’ (Council on Higher Education, 2000). The Ministry agreed ‘that the sustainability and transformation of the higher education system requires a reduction in the number of institutions’ (Department of Education, 2001) and after an ‘intensive political process’ (Jansen, 2004) and wide contestation, the institutional mergers and incorporations were finalised.

Resistance to the mergers was widespread, with the voice of the technikon sector being amongst the most vociferous. Some examples of this resistance can be seen in documents released by the CTP. ‘The technikon sector is facing the greatest challenge to its existence since its establishment in 1979’, ‘Proceeding with mergers which are illogical, irrational and costly…might deal Higher Education a fatal blow….’, ‘To cut down the number of technikons would deal a severe blow to the thousands who are already finding it
difficult to gain access to higher education’ (CTP, 2002a), and ‘Prospective mergers will further complicate any rational distinction between institutions’ (CTP, 2002b). Pityana, Vice-Chancellor and Principal of UNISA (2004) claims that the policy on mergers ‘as a tool towards restructuring the higher education landscape in South Africa has been very controversial. Controversial because it was predicated on assumptions that many of us consider contentious and lacked rational focus’.

Despite the dissension, the mergers went ahead and there are now 11 universities (there were 21 universities), 6 universities of technology (there were 15 technikons), and 5 comprehensive institutions (largely the result of mergers between technikons and universities). This has resulted in a significantly changed higher education landscape, but it has come at a price. While it is not our intention to focus on the merger issues, it is clear that the merger challenges cannot be neatly separated from the establishment of UoTs, as those technikons that became UoTs did so at the time of the mergers. The merger processes have been fraught with power struggles, internal politics, staff tensions and uncertainty. These mergers have had a profound effect on the institutions involved, and Garside (2005) claims that ‘not much “melding” appears to have happened…the chance to define a new hybrid intellectual culture and identity appears to have been lost’. What it has meant is that a great deal of institutional time and energy have been spent facilitating the transition. To some extent, this has possibly meant that in certain cases, institutional managements have had less capacity to engage meaningfully with the challenges of becoming UoTs.

What is significant is that the single system resulting from the new policy framework encompasses differentiations ‘derived not from some historically acquired institutional role but via programmes which would be identified through systematic planning and coordination in order to steer the entire national system in directions consonant with national socio-economic priorities’ (Kraak, 2006).

**WHAT IS A UNIVERSITY OF TECHNOLOGY?**

The perceptions of academic staff about what it means to work in a public university of technology and the extent to which they experience their particular UoT as different to a technikon, also provide insights into the issues and challenges that these institutions face in their evolution from technikons to UoTs.

Given the pressure on the higher education sector to meet national economic and social imperatives, it is inevitable that the boundaries between university-type programmes and ex-technikon-type programmes have become more permeable. The trend towards increased flexibility and permeability is not unique to South Africa. Referring to international trends in higher education, Ramsden (1998) states that ‘Differences between types of post-secondary institutions are becoming more permeable and fuzzy, and priorities can no longer be derived from single ideals such as the university as a liberal community of scholars, or the polytechnic as a training ground for the “real world”’. So what then distinguishes universities of technology from universities?

We must surely believe that there would be sound and significant reasons for the technikon movement’s repeated and urgent requests to the Ministry for permission to become UoTs. The CTP arguments in support of this change focused chiefly on perceptions, both national and international, of technikons, ‘[T]he name still has connotations with the apartheid era and the binary system in which it existed’ and ‘With the onset of globalisation and the technikons’ drive towards internationalisation and optimal utilisation of South Africa’s brainpower and creative skills, the name has become a stumbling block’ (CTP, 2003b), ‘the name “technikon” is not competitive locally and is totally misunderstood’ (CTP, 2003a). The use of the word ‘competitive’ is intriguing as it might be interpreted to mean that the UoTs will be better placed to compete with established universities, but it is also likely to refer to its desire to compete with the growing number of private providers in higher education.
The CTP stated that ‘It is extremely difficult (if not impossible) to explain why technikons are degree-awarding institutions, but are not called universities’ (CTP, 2003b). If we unpack this statement it would seem to suggest that the status change should involve nothing more than a renaming of the technikons – after all, both types of institutions at the time of renaming offered degrees. Interestingly, while the issue of branding was used by the CTP as an argument to resist the merging of institutions ‘[Branding is a risky and costly business’ [CTP, 2003a]), the CTP did not refer to the cost and ‘risk’ of branding the new UoTs as an obstacle to this renaming process.

Throughout the process of appealing for the name change, the focus was on the inappropriateness of ‘technikon’ as a title for career-focused institutions, and the elevation in status and perception that would transpire as a result of the name change. It seems, therefore, that aside from issues of perception and ‘raised status’, there were no other significant reasons given for the proposed change. This is borne out in the following CTP statement ‘Where the ethos and focus of the five technikons remaining in the transformed educational landscape will be very similar, the CTP strongly urges that the name “University of Technology” be used for these institutions’ (CTP, 2003b). The Ministry took a more pragmatic view than the CTP, stating that ‘The reason for this [drive by a number of technikons to be called universities of technology], aside from the desire for prestige and status, is that the existing subsidy formula for higher education is weighted in favour of universities, in particular, in relation to research funding’ (Department of Education, 2001).

We now turn to data from eleven interviews with academics at a UoT which seem to support the view that working within a UoT has brought with it no changes in the way the institution operates. Participant 6 had this to say

Just a name change…I don’t think it’s done anything

while Participant 5 seemed to think that the change should bring with it some more significant differences

It should make a difference but currently personally it hasn’t…

In defining what a UoT would be, the CTP declared that a UoT would ‘typically be an institution that has the capacity to create and apply knowledge and to conduct basic applied research within the context of innovation, entrepreneurship and the commercialisation of research results’ (CTP, 2003b). Significantly this report went on to state that ‘A healthy balance of the above attributes translates into a university of technology with general and career-focused streams that will develop competencies and supply learning opportunities to meet the relevant professional, socio-economic and human resource demands of South Africa’ [our italics] (CTP, 2003b). The inclusion of a ‘general’ stream seems to contradict the CTP’s frequent assertion that there is a need for a diverse range of institutions that are differentiated in terms of their missions, and that ‘our economy needs more work-focused degrees’ (CTP, 2003b). Further to this, it gives more credence to the argument that increasing ‘academic drift’ could give rise to a more uniform sector and further erode the distinctions between university and UoT missions, entrance requirements, qualifications and programmes, and research focus areas. Is the assumption then that the only quality that currently differentiates a university from an ex-technikon is the ‘technology’ focus of the ex-technikons?

Participants in this study were unanimous in their opinion that as a UoT there should be considerable changes within their institution. Participant 1 said

We have this fancy university name change and everything else but in terms of delivery I can’t tell you 100% that I’m happy…
while Participant 8 clearly saw significant differences between the ways that universities and ex-technikons operate,

…if you’re going to be a UoT you’ve got to put in an infrastructure, you’ve got to make sure you’ve got the supports, you’ve got to …and you’ve got to find a way to engage the students in a way that will motivate them to learn…we have no real student culture….

At this point it must be acknowledged that a comparison between South African universities and UoTs is in danger of giving the impression that traditional universities are a single entity, and that UoTs too have indistinguishable visions and purposes. Aside from the differences among universities and universities of technology in terms of their resources, target student populations, access requirements to programmes, niche areas, staff expertise, and the different experiences they can offer their students, there is also ‘an imbalance between the historically black disadvantaged universities and technikons and the historically white advantaged institutions’ (Ogude et al, 2001) that cannot been overlooked. Participant 7 indicated that there are few differences in the academic standards between a UoT and a historically disadvantaged university where he had previously taught,

Not that much, but there’s a big difference between white universities and black universities, that is clear.

Given the history of technikons, it seems that the shift towards being a university of technology is fraught with challenges that will not easily be met. This is a perception shared by participants in the study who expressed a view, not so much that universities and UoTs serve different purposes within the sector, but rather that universities are ‘better’ than the ex-technikons:

…a university is higher…we should be higher obviously (Participant 6),

and

…universities are way ahead at the moment… (Participant 2).

The fact that these kinds of comparisons are being made, suggests that if indeed this particular UoT has clearly defined its vision and purposes, it has until now not sufficiently engaged with stakeholders, both internal and external, in ways that enable them to support the UoT’s vision and purpose, and promote the growth of this UoT’s particular niche.

Without a sound understanding of what it means to be a UoT, the name change of this particular institution has inevitably led some staff members to compare unfavourably this UoT with what they believe to be the attributes of universities,

…standards are different, let me just put it that way, standards are different… (Participant 7).

Our concern is that without meaningful debate to understand and challenge what it means to work in a UoT, academic staff will just continue to operate in ways with which they are familiar.

UoTs must establish their own purpose and believe in their raison d’être. In response to a comment about the increased emphasis on research and post-graduate study in his UoT, Participant 2 stated forcefully,

…we’re not a research university…forget it….250 of our students are studying [at postgraduate level]… less than 5% of our students… so let’s get that straight…. we are not a research university…..
The Education Ministry has been aware of the tendency towards programme uniformity expressed in institutional plans, ‘…there is evidence to suggest that imitative behaviour and lack of diversity are common in the absence of regulatory and policy frameworks designed to ensure diversity in the higher education system’ (Department of Education, 2001). As Professor Nico Cloete indicated in a recent conference presentation, there is now ‘a more homogeneous system in terms of mission and vision, with the main form of differentiation being institutional inequalities rather than different functions and choices’ (University World News, 2008).

The policy framework and subsequent reshaping and resizing exercise were intended to create a single coordinated system comprising different types of institutions with a variety of programmes serving the diverse needs of our country. The intention was not to create a number of similar universities all striving to do the same things in the same ways. There is, therefore, increasing policy pressure on the ex-technikon sector to have fitness of purpose, that is, to fashion an identity best suited to the particular students they teach and the industry stakeholders with whom they have formed long-standing relationships. In his argument that UoTs should not aspire to become more like established universities and should acknowledge their purpose as UoTs, Participant 2 stated that

our focus is undergraduate…we are an institution that’s vocational…our training is basically aimed at preparing people for a specific career path.

The Ministry has gone some way towards trying to ensure that despite ‘institutional aspirations’ (Department of Education, 2001), the differentiations remain in place so that the student population traditionally served by the ex-technikons, continues to benefit.

In the interviews on which this study is based, it was apparent that the participants valued their own status as ‘professionals’ and although they were all quick to state that their primary role was to educate, it was clear that they also took pride in their own industry experience and networks. This is reflected in Participant 3’s comment that

…you’ve still got to meet the requirements of the profession…you still can’t lower the standards because in our profession it’s people’s lives we’re talking about.

They all valued the role that their particular industry or profession played in reviewing their programmes, serving on departmental advisory boards or liaison committees, keeping academic staff abreast of industry trends and providing input into the development of curricula:

…I mean we have a lot of contact with outside, um, you know with the city and with the province, and with private practitioners… (Participant 9).

In the interview data, there is a clear sense that the learning programmes are driven by industry needs.

…it [industry] don’t mince their words when they say what it is that they want from the students (Participant 9).

This is not to suggest that the integration of industry in the curriculum was seen as unproblematic. Until recently, the experiential learning undertaken by students within many programmes had not been curriculated and student assessments undertaken in the workplace were seldom prepared, conducted or moderated with the same academic rigour as those conducted at the institution. This is borne out by Participant 2’s comments:
...it's six months in industry pouring the tea or photocopying, doing what you like...it's not curriculated ...you don't at the end of it write an academic report or you don't do a study or...oh please, man no wonder the university people say it's not a three year diploma...it's a two year diploma....

There was a clear view that the link with Industry needed to be rigorously interrogated and that it should be carefully managed to ensure that a sound vocationally focused, academic qualification is offered. Participant 10 offered the view that becoming a UoT necessitated a change in the way in which vocationally-focused education is constructed:

the fact that we've now become a university, I think, um, we need to be more critical because we've kind of – in the past have been teaching people to do a job, but we haven't been teaching them to think about the way they do their job.

With over 90% of technikon students studying at under-graduate level, and post-graduate degree-awarding only beginning in 1995 (after the promulgation of the 1993 Technikons Act), there has not been a driving need to attract academic staff with Masters and Doctoral degrees. Until very shortly before the change in nomenclature, it was seen to be more significant that academic staff at technikons should have workplace experience and expertise in their field of study. Participant 7 who had worked both in a university and at a UoT firmly explained:

I think they're [historically advantaged universities] a little bit more...they have more qualified people at the end of the day, it comes down to that, I think.

UoTs, determined to offer post-graduate degrees, are providing incentives for their own staff to study further, and are increasingly employing more highly-qualified staff with less industry experience. Participant 3 seemed to indicate a concern that being a UoT would shift the role of the academic:

the core business of this institution is teaching and learning and...and if you haven't realised that and you think that this is a glorified position of being a lecturer...

Prior to 2005, a convenorship system existed through which the curriculum for technikon qualifications was developed by a convening technikon that assumed national responsibility for disseminating the curriculum to the other technikons offering the qualification. Although all technikons were free to participate in this process, the system was technicist and ‘highly bureaucratic, power being vested in those technikons which hold convenorship for particular programmes’ (Naidoo and Cooke, 1998). So while universities exercised local control over their curriculum processes, the technikon system was less flexible and a key result is that there is a significant lack of curriculum development capacity among academic staff members at ex-technikons. In response to a question about the demise of the convenorship system, Participant 2’s response was

Excellent! ...I think we must mould our own identity...every department should mould their own identity and their own qualification in collaboration with other departments.

But there was also concern about what this would entail for academics unfamiliar with undertaking programme development.

Another challenge for UoTs is that technikon staff have always had very heavy teaching loads. This was partly because research was not part of the academics’ job description and partly because of the training approach taken for teaching:
Our training is basically aimed at preparing people for a specific career path… (Participant 2).

This training approach is very labour intensive and many UoT staff are allocated twenty and more teaching periods a week. There was evidence in our data, that the academics did not see any other way of approaching teaching. Participant 1 stated with concern that

...to convince the mindset to change is a very difficult thing because people have been here for twenty years...they’re used to doing it that way and now they say ‘if it ain’t broke, don’t fix it’.

More recently, with the changed context, including advancements in technology and the dire need for applied research outputs within South Africa, there has been growing pressure on technikons (and now UoTs) to conduct applied research and develop post-graduate technology students. There have been ‘expectations that the applied nature of technikon research will focus on “research in context” and produce results that can make a substantial difference to the economy and the material needs and conditions of people in the country’ (Ogude et al, 2001). This has not, however, led to lighter teaching loads for academic staff. Participant 9 echoes the view of several participants about the difficulty they are having with the demands placed on them.

I think the expectation that you are this person who does your teaching work plus you do community outreach and research, I mean where’s the time?...you need to have like three bodies to do all of this, um, so ja, and I think it’s a serious problem now….

CONCLUSION

In the process of reshaping the South African higher education landscape, the intention of government was not to create a unified higher education sector designed to undermine the diverse purposes of institutions within the sector. If UoTs choose to focus on offering degrees at the expense of diplomas, we must accept that there will be implications for the students currently served by them. While each university and UoT has its own admissions policy and procedures, ex-technikons, and now UoTs, have less stringent admission requirements than universities, thereby providing access to many students who could not enter the traditional university sector. The pressing need to reduce unemployment and increase the skilled mid-level workforce means that there are immense opportunities within UoTs to provide learners with relevant well-designed career focused programmes. However, replacing existing diploma programmes with increasing numbers of degree programmes will restrict student access and will severely disadvantage those learners whose Senior Certificate results prevent them from entry into degree programmes.

The data in this study reflected a belief that the creation of the UoT identity was largely a marketing exercise. But there was also evidence to show that the research participants have an understanding that the new identity reflects an attempt to become a homogenous higher education sector. We believe that it remains to the individual UoTs to revisit their institutional plans, visions and missions and to develop strategic plans strongly positioning themselves as distinct institutions that will strive to take on relevant characteristics of universities while more rigorously developing those qualities of technikons that made them valuable for many years. The focus of UoTs should be firmly fixed on improving their capacity to generate new knowledge and contribute to increasing technology transfer while offering technology-focused, vocationally relevant programmes that meet the needs of learners, the economy and society at large.


Committee of Technikon Principals. (2003b) ‘Change in the Name for the Technikons in South Africa’ Committee of Technikon Principals: Pretoria.


ABSTRACT

The power relations of ‘expert’ and ‘trainee’ often obtain in Higher Education capacity building interventions, particularly those aimed at academic staff new to the profession of teaching. However, as Jean McNiff argues in ‘Action Research for Professional Development’ (2002), what they really need in their professional learning is an appropriate form of support ‘to help them celebrate what they already know’, (hence the title of this article). In the article, the author describes a technique for orientating new academics to their roles of teaching and learning, research and community engagement by asking them to describe graphically and metaphorically their personal understanding of the relationship between ‘the lecturer’, ‘the student’, ‘the curriculum’, ‘teaching/learning’, ‘research’, ‘community engagement’, in the context of ‘a comprehensive university’ situated in a ‘local community’ but also serving the needs of ‘wider society’. Participants are asked to compare their own teaching and learning metaphors with those put forward by Fox (1983). The author argues that the technique of ‘celebrating what we know’ by combining the metaphorical and pictorial and sharing with colleagues, is enjoyed by participants and provides a useful starting point for practitioners to reflect on, and interrogate, their own practice.

INTRODUCTION

In her ‘Action Research for Professional Development’, Jean McNiff (2002) observes that traditional professional education takes the form of ‘an acknowledged expert’ offering advice to professionals who are cast as ‘trainees’. ‘More enlightened’ forms of professional learning programmes, she maintains, work on the assumption that these so-called trainees already have a body of professional knowledge and, moreover, are well able to learn for themselves. In her view, what they really need in their professional learning is an appropriate form of support ‘to help them celebrate what they already know’, (hence the title of this article). This act of celebration also generates new knowledge – principally through ‘a dialogue of equals’ with others who are interested in the process of learning, with no one telling another what to do.

The power relations of ‘expert’ and ‘trainee’ often obtain in Higher Education capacity building interventions, particularly those aimed at academic staff new to the profession of teaching. However, in my experience over a number of years of running orientation programmes for new lecturers, these ‘trainees’ have either had some previous teaching experience elsewhere, or have already been thrust straight into the lecture hall whilst I have been waiting for the Human Resources department to provide me with a list of the latest recruits. And, of course, they have all had experience of being taught in a higher education setting – something which influences how they teach.
The three pillars of the academic endeavour continue to be teaching and learning, research, and community engagement. The prominence of any particular one of these and the closeness of the relationship between them is to a great extent dependent on the institutional context. My own university, for example, was redesignated as a ‘comprehensive institution’ after the deliberations of the Minister of Education’s National Working Group (2001), with a specific mandate to develop vocationally oriented sub-degree programmes (certificates and diplomas) catering to the needs of the local communities.

Given the above, when meeting a group of new lecturers formally for the first time, after we have all introduced ourselves, I give them each a sheet of newsprint and felt-tip pens and ask them to draw their conceptions of the relationships between the following: ‘the lecturer’, ‘the student’, ‘the curriculum’, ‘teaching/learning’, ‘research’, ‘community engagement’, in the context of ‘a comprehensive university’ situated in a ‘local community’ but also serving the needs of ‘wider society’. While doing this, I also ask them to think carefully about the metaphors they are using in their conceptions. At this point in proceedings, someone will invariably, and quite rightly, ask me what I mean by ‘metaphor’.

Metaphors, as St Clair (2000) notes, ‘are really statements based on some kind of analogy where two things are compared to each other’. More formally, Northcote and Fetherston (2006), define metaphor as ‘a figure of speech in which a term or phrase is applied to something to which it is not literally applicable in order to suggest a resemblance’. Examples would include describing life as ‘a bowl of cherries’, and assessing the state of your health by saying you are ‘as fit as a fiddle’. Northcote and Fetherston (2006) further aver that metaphors facilitate the communication of ideas. Metaphor thus concerns reality, symbolic likeness and communication.

As St Clair (2000) observes, ‘Metaphors tell us much about those who use them. They provide insight into how these individuals view the world’. Metaphors give access (for ourselves and for others) to our beliefs. The National Centre for Excellence in the Teaching of Mathematics (2007) exemplifies its own point about metaphor when, in talking about metaphors for teaching, it says that ‘the language we use often betrays ways of thinking of which we may not be aware’ [emphasis added]. Metaphors may be ‘frozen’ in that they become so embedded in our language that we are unaware of them. The use of such metaphors might even unconsciously contradict what we actually think we are saying.

Northcote and Fetherston (2006) provide a comprehensive literature survey of research into the metaphors of higher education, citing popular metaphorical conceptions of the teaching process as including transmission, persuasion, nurturing, building, cultivation and coaching. Northcote and Fetherston’s (ibid) research expands previous studies by revealing stronger perceived links between teaching and learning processes, a new awareness of the role of ‘community’ (as applied to groups of learners, not as in Community Engagement) in education, and more varied levels of complexity.

Whilst acknowledging the value of Northcote and Fetherston’s survey, I prefer to use as my source some earlier research carried out by Fox (1983). It is this article which I give to participants for further reading on the New Lecturer Orientation programme after they have chosen their own metaphors.

Fox (1983) developed his conceptual model for thinking about teaching and learning, by asking teachers to respond to the question ‘What do you mean by teaching?’ From the answers, he constructed four basic theories of teaching, within a binary distinction he draws between simple theories, (involving the notions
of ‘transfer’, and ‘shaping’), and developed theories, whereby students ‘travel’ and ‘grow’. Figure 1 summarises the main characteristics of the four models.

**Figure 1**

Personal Theories of Teaching, (Fox, D. 1983 Studies in HE, 8(2))

<table>
<thead>
<tr>
<th>Summary Sheet</th>
<th>Simple Transfer Theory</th>
<th>Developed Shaping Theory</th>
<th>Developed Travelling Theory</th>
<th>Developed Growing Theory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbs commonly used</td>
<td>Convey, impart, implant, imbue, give, expound, transmit, put over, propound, tell</td>
<td>Develop, mould, demonstrate, produce, instruct, condition, prepare, direct (give orders)</td>
<td>Lead, point the way, guide, initiate, help, show, direct (show the way)</td>
<td>Cultivate, encourage, nurture, develop, foster, enable, help, bring out</td>
</tr>
<tr>
<td>The subject matter</td>
<td>Commodity to be transferred, to fill a container</td>
<td>Shaping tools, pattern, blue print</td>
<td>Terrain to be explored, vantage points</td>
<td>Experiences to be incorporated into developing personality</td>
</tr>
<tr>
<td>The student</td>
<td>Container to be filled</td>
<td>Insert material (clay, wood, metal) to be shaped</td>
<td>Explorer</td>
<td>Develop personality, growing plants</td>
</tr>
<tr>
<td>The teacher</td>
<td>Pump attendant, food processor, bar maid</td>
<td>Skilled craftsman working on raw material or selecting and assembling components</td>
<td>Experienced and expert traveling companion, guide, provider of traveling aids</td>
<td>Resource provider, gardener.</td>
</tr>
<tr>
<td>Standard teaching methods</td>
<td>Lectures, reading lists, duplicated notes</td>
<td>Laboratory, workshops, practical instructions like recipes, exercises with predictable outcomes</td>
<td>Simulations, projects, etc., exercises with unpredictable outcomes, discussions, independent learning</td>
<td>Experiential methods similar to traveling theory but less structured and more spontaneous</td>
</tr>
<tr>
<td>Monitoring progress</td>
<td>Measuring and sampling contents of vessel</td>
<td>Checking size and shape of product</td>
<td>Comparing notes with traveling companion</td>
<td>Listening to reflections in personal development</td>
</tr>
<tr>
<td>Explanations of failure – teacher’s view</td>
<td>Leaky vessels, small container</td>
<td>Flawed, faulty raw material</td>
<td>Blinkered vision, lack of stamina, unadventurous, lethargic</td>
<td>Poor start, inadequately prepared, no will to develop</td>
</tr>
<tr>
<td>Explanations of failure – student’s view</td>
<td>Poor transfer skills, poor aim</td>
<td>Incompetent craftsman, poor or missing blueprint</td>
<td>Poor guides, poor equipment, too many restrictions on route</td>
<td>Restricted diet, unsuitable food, incompetent gardener</td>
</tr>
<tr>
<td>Attitude to training</td>
<td>Need simple skills of transfer</td>
<td>Need shaping to British Standard Teacher</td>
<td>Need skills of expert guide as well as knowledge of terrain</td>
<td>Need skills of diagnosing needs of individual plants</td>
</tr>
</tbody>
</table>
‘Simple’ theories of teaching are so-called because they imply a simple relationship between teaching and learning, one of cause and effect. If something has been taught it must have been learned. The teacher is in total control of the commodity to be taught, in terms of its shape and size. ‘End positions’ can, and should, be determined.

The first of these ‘simple’ theories Fox calls the transfer theory, in which knowledge is seen as a commodity or quantity to be passed from teacher to learner. The metaphor of an empty vessel being filled is an image which springs readily to mind. (As Fox notes, the lecture is the classic manifestation of this theory in action.)

Fox identifies two variants of the transfer theory: the ‘baby food’ variant, in which teachers see their jobs as one of ‘processing very tough material into more easily digestible nutrients for rather simple minds’, and the ‘broadcast’ theory, in which the metaphors are the scattering of seeds, the casting of pearls or the delivery of ‘nuggets of wisdom’, rather than the filling of vessels.

Shaping theories also fall under the ‘simple’ category. Here the metaphors are the ‘shaping’, ‘producing’ or ‘developing’ of finished articles from the raw material of metal, wood or clay.

Between the four basic ‘simple’ and ‘developed’ theories Fox identifies a hybrid, or a bridge, which he labels the building theory. The minds of students are seen as a building site, with the teacher having not only the responsibility of delivering the raw materials but also of supervising construction according to a predetermined plan. Conceptualising teaching in this way fits with a transfer theory of learning, but when teachers realize that design and construction are also influenced by the student their teaching passes from the ‘simple’ to the ‘developed’.

Herein lies Fox’s basic distinction between the two. Whereas, in so-called ‘simple’ theories the teacher is the sole owner, purveyor and shaper of the commodity of learning, in ‘developed’ theories, students are viewed as contributing partners in their own learning, (my emphasis). They contribute to the process of learning in terms of its pace and its direction. They are ‘fellow travelers’ with individual and valuable experiences, abilities, motives and objectives, which are not always well-defined, well organised or, indeed, very useful. The teacher’s job is ‘to help the students to get their own ideas in order so that they can make more sense of their experience and of what lies ahead still to be mastered’ (Fox, 1983).

Within the developed theory category, Fox distinguishes between the traveling theory and the growing theory. In the former, (the commoner of the two, according to Fox), education is seen as a journey of exploration and challenge through a continually changing landscape, with the teacher ‘guiding’, ‘leading’ or ‘pointing the way’. Teachers subscribing to a ‘growing’ theory are more likely to see themselves as gardeners and their students as plants to be tended. The essential distinction which Fox draws between these two so-called developed theories is on the focus of emphasis. In the ‘traveling’ theory, the focus is on the subject, (the terrain to be covered, the world to be seen), while the ‘growing’ theory tends to place more emphasis on the student as a person.

I am mindful of Haggis’ (2003) warning about the tendency to pathologise students against normative formulations about ‘teachers’ and ‘learners’. I therefore note that Fox (1983) is careful to say that developed theories are not always better than simple theories, but that ‘…a person who has reflected deeply on the teaching and learning process and whose thinking has advanced from the constraints of simple theories to the broader perspectives of the developed theories will be in a better position to choose the most appropriate approaches.’
Why do I ask workshop participants to visualize key higher education relationships rather than simply write about them? Stokes (2002) notes that educational literature on the topic of ‘visual literacy’ – which she defines as ‘the ability to interpret images as well as to generate images for communicating ideas and concepts’ - suggests that using visuals in teaching results in a greater degree of learning. Stokes (ibid) illustrates this with the following anecdote:

‘During a rehearsal of Debussy’s La Mer, Toscanini found himself unable to describe the effect he hoped to achieve from a particular passage. After a moment’s thought, he took a silk handkerchief from his pocket and tossed it high into the air. The orchestra, mesmerized, watched the slow, graceful descent of the silken square. Toscanini smiled with satisfaction as it finally settled on the floor. “There,” he said, “play it like that”.

One of my workshop participants captured the sentiment as follows: ‘The visual explains everything; you don’t really need the words. Drawing something, then writing the words, makes it easier.’

Another participant, after the exercise, concluded that ‘talking in metaphors is very useful’. About being asked to draw something, he said that he had initially found it difficult to understand what I was requiring, but after I had explained it more clearly it led to ‘deep contemplation on my roles in the institution’. He saw himself at the centre, and the drawing of the graphic made that centrality real (Figure 2). He was grateful for the opportunity to draw, as it made his role in the university mentally clearer to himself. (Incidentally, in a follow-up interview with him two years later, he immediately recalled his drawing, again stressing the importance of his own centrality.)
I have also used this technique successfully with students. Some of their visualizations are included in the examples below.

The spatial and relational aspects of the metaphors, captured in the posters, make for more immediate comprehension, and facilitate access to discussion. In the figures, it is interesting to note how some pictures are linear (A → B → C) as in Figure 3, while others are circular and/or spiral (Figures 4 and 5), and others more pictorial (Figures 6 and 7).
Figure 8 provides a classic interpretation of ‘student as plant to be nurtured’. (Recently I interviewed this lecturer two years after he had drawn this. He still maintains that this is the most apt metaphor for his teaching and his students’ learning.)
Figure 9, in addition to being a striking visualization, provides a discussion point by simultaneously describing students as ‘pot plants’ and ‘blank computers’ – a contradiction?

Figure 10 in which a lecturer visualizes herself as a lighthouse for her students (the illuminator), contrasts intriguingly with the student’s picture in Figure 11, in which he sees himself as the candle (the illuminator) and his lecturer as the lighter of the candle.
CONCLUSION

The development technique of ‘celebrating what we know’, by asking staff to participate actively, share with each other, and contribute what they think and value, rather than simply listening to what ‘the expert’ thinks he/she knows seems to find favour, judging by the following feedback received from new lecturers:

I learnt about some more practical ways of teaching from the presentations of how other lecturers are teaching.

It clarifies your role as an educator and gives one a sense of belonging.

Participatory strategies used allowed participants to understand one another’s view point on issues regarding teaching and learning at the University level.

I thoroughly enjoyed the interactive sessions. Good opportunity to share experiences and exchange ideas. Friendly atmosphere and good approach conducive to discussions.

Approach used in conducting the workshop was interesting. Listening to views of colleagues and sharing our experiences was really eye-opening. Workshop was very informative, I have learnt a lot and I am now able to use and incorporate different ideas in my teaching and assessment.

I found it enjoyable because we were fully involved in every activity, and that made me to understand easier and quicker.

As a result of having given this idea more thought while writing this article, I realise that I could make more use of the posters. My practice has been to let the lecturer describe their model and then let fellow participants ask questions. After that I distribute copies of the Fox matrix in Figure 1, pointing out his comment about the difference between simple and complex theories, but basically leaving them to draw their own conclusions. I could be a bit more challenging, by interrogating their conceptualisations more closely and asking questions such as: do any of the graphics pose any questions about the status quo - about what we teach, why we are teaching it, what sort of graduate do we want to produce?

Incidentally, I have also used this pen and paper technique with experienced lecturers to get them to articulate the academic literacies (the values and practices) of their own and cognate disciplines. Sitting back and watching a group of seasoned auditors, accountants and economists enthusiastically creating metaphors and pictures in answer to these questions is a surprising but exciting and edifying experience!

REFERENCES


Notes for Contributors

Manuscripts should be sent to the Editor. They should be typed in double space, in A4 format, in MS Word and should not exceed 5000 words in length, excluding tables, figures and references. Manuscripts may be submitted by e-mail or on a CD. Tables and figures must be typed on separate sheets and not included as part of the text. Their positions should be indicated in the manuscript. They should be numbered by Arabic numerals. Each manuscript should be accompanied by a title page and an Abstract of 100-150 words on a separate sheet. Manuscripts not conforming to these requirements will not be considered for publication.

The full postal and e-mail address of the author should be included on the title page. Proofs will be sent to authors if there is sufficient time to do so. They should be corrected and returned within 48 hours of receipt. The editor reserves the right to publish without proofs having been signed-off by the author.
A time-honoured tradition of higher education institutions both locally and globally, academic regalia are an emblem of the defining moment when a student becomes a graduate. The gowns and stoles worn at graduation ceremonies have particular significance as they are symbols of the conferring institution, the field of knowledge and the level of qualification.

In 2008, The Independent Institute of Education (IIE) embarked on designing new academic regalia which would best symbolise the dynamic and innovative educational platform The IIE occupies. Our unique academic regalia will be worn for the first time at graduation ceremonies this year. The newly designed regalia personifies the high quality of education offered by The IIE and embraces the spirit of innovation and African pride, with which The IIE provides academic leadership to various facets of South African society.

The IIE office bearers leading the academic procession at the graduation ceremonies this year will be wearing new gowns that have been made using a light, pin-striped black fabric. Not only is this fabric far more suitable to our climate, but the pin stripes also exemplify excellence in career-focused education, in which the IIE prides itself. The number of epaulettes on an office bearer’s gown and cuffs indicate their position in the academic hierarchy of The IIE.

Graduates will be wearing the new IIE stoles. The stoles are categorised by a colour-coded series of woven ribbons on black fabric with gold pin stripes, also typifying excellence in career-focused education. Each faculty wears a unique colour against this back drop, which is indicative of the faculty and qualification level of graduates. Together, the colours form a graphic rhythm echoing the African continent.

The Applied Humanities Faculty is represented by the colour red. Red is an emotionally intense colour, associated with energy, strength, determination, passion and love. This embodies the personality of graduates that excel in this field.

Since 1983, The London Financial Times has used a distinctive salmon orange colour for its newsprint to distinguish itself from competitors. We have thus chosen salmon orange to represent our Business Faculty, as our graduates in this discipline are equipped to bolster our economy as they rise up to the challenges of the business sector and embark on their journey as future business leaders.

The colour blue represents the Information Technology Faculty and personifies the drive for precision, depth, expertise and adaptability that are characteristics of the graduates of this faculty as they enter into an ever increasing technologically enhanced world.

The Leisure Faculty is represented by green. With its natural associations, green is a colour that exemplifies the mantra of the Leisure faculty – Green is a colour best characterised by its calming effect and restful effect on the human eye.

The rich symbolism in the academic regalia is a measure of The IIE’s distinctive contribution to excellence in career-focused education.