VOLUME 5 / 2010

THE JOURNAL OF INDEPENDENT TEACHING AND LEARNING

The Journal of Independent Teaching and Learning

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- book reviews that comprise a clear and concise evaluation of recently published books.

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Editorial

Dolina Dowling

Along with the exponential growth of institutions of higher learning to meet the expectations of governments to have a highly educated and skilled workforce in order to meet the demands of the 21st century economy, there has been another major shift that has impacted upon the provision of higher education; namely, the growth of information and communication technologies (ICT) and its concomitant use in teaching and learning. This shift is not only in response to the explosion of ICT but also to the emerging learning styles of the new generation of school leavers that has come to be known as the 'net generation'. These learners have grown up in a world surrounded by web-enabled devices and thus possess an ease of communication with friends anywhere in the world. As a consequence, their perception of the world and the ways in which they assimilate information is different to that of previous generations. For instance, the former is more likely to want to know where to find information rather than to internalise knowledge or as another author puts it 'engage in surface rather than deep learning'.

Of course, for many learners who come from developing countries, particularly in sub-Saharan Africa there is a disjuncture here. While their counterparts in developed and major economies have been weaned (*sic*) in instant communication, like Facebook, Twitter, and other social media, the technologically disadvantaged can only look on in envy, that is, if they are aware of ICT and its many uses. Hence the term 'digital divide' has been coined to indicate those that have access to advanced technologies and thereby live in a globalised world and those that do not.

Nevertheless, as technology continues to develop at an increasingly rapid rate and as inexpensive technological devices like mobile (cellular) phones are increasingly used to provide information and support for rural and underprivileged communities (e.g. in health and banking), there are also moves afoot to use these devices to support the learning experience of students. At present, this is generally limited, particularly in developing countries like South Africa, to the provision of student support services, like registration, receiving examination results, and the notification of social and extra-curricular events.

Questions that need to be asked are: (i) What are the learning styles that characterise this generation? and (ii) are they so different to previous generations of students that new pedagogy is required for optimal success? It would be imprudent to make the assumption that such traits are 'set in stone' and that these are expected to be found in all young people who are exposed to ICT. Furthermore, even if students have limited technological exposure there still will be generational as well as individual differences in learning styles. For example, some researchers claim that net generation students 'have a need for immediacy and immediate gratification' and are 'habituated to media and multi-tasking', others suggest that, they learn better through discovery and experiential learning, and yet others talk about these students' need

for personally meaningful learning experiences. While some of these traits can be applied only to the net generation, the need to find personal meaning in learning and to learn better through doing (e.g. experiential learning, work integrated learning, or service learning), has been an accepted hallmark of good teaching for the last several decades in the developed world.

Nevertheless, as can be seen in the first two articles in this fifth edition of *The Journal of Independent Teaching and Learning*, the need for pedagogy to be adapted to meet the requirements of technologically knowledgeable students is a *sine qua non*. The first author discusses the importance of universities whose students come from disadvantaged backgrounds to find innovative and appropriate ways for its students to become comfortable with ICT as well as ensure an adequacy of provision so that technology becomes an enabling tool in their learning experience. He shows how access to ICT needs to be taken into account on many levels for the successful use of ICT in learning and the implications for curriculum design. The second article provides an interesting counterpoint to the first through contrasting the differences in student learning when institutional enrolment mainly comprises students that are aptly described as being of the 'net generation'. The author in this article explores the attitudes of the teaching staff in response to this type of student and makes suggestions on ways that faculty can integrate ICT into their teaching and thereby accommodate these students' learning styles.

In the third and fourth articles attention is paid to the need for meaning in learning and the application of such learning in 'real world' situations. While as noted above, these needs are often used with reference to the net generation, they are not such new ideas. It is a tautology to say that learning needs to be meaningful; in most cases it should be able to be applied to the world of work; and to provide graduates with the basis to contribute to building a better and more prosperous society, both in terms of economics and in social mores. In the third article entitled 'Institutionalising service-learning' the author shows how service-learning as an aspect of community engagement can be integrated into the curriculum and be credit-bearing. Thus, meeting the requirement for meaningful learning as well as providing a significant interaction between students and the communities which their higher education institutions serve.

The fourth article shows that tourism programmes do not fare so well on the criterion of students possessing the graduate attributes appropriate for successful industry employment. The author investigates the match between the programme content with industry needs and the extent to which programmes in three public institutions in the province of KwaZulu-Natal meet this need. He finds that there is a gap between employers, and alumni expectations about tourism programmes preparing the students adequately to be industry ready.

In the article on reflective practice in Mathematics, the author discusses the results of a reflective writing assignment given to Bachelor of Education students to develop a better understanding of the mathematical learning process and in identifying gaps in knowledge. The author found that this was a difficult assignment and student comments endorsed the hypothesis stated above that the desire is for 'surface' rather than 'deep' learning. This presents significant challenges for the Academy, as a core function of higher education institutions is knowledge production and dissemination, which necessarily requires that deep learning takes place.

Lastly, in *Practitioners' Corner*, a new direction is taken. The author considers the role of higher education quality reviews and suggests interventions that could be made to strengthen reviews in these institutions.

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Bridging the digital divide through multiple layers of access

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ABSTRACT

Drawing on data gathered from thirteen semi-structured interviews with disadvantaged students, this article describes the challenges faced by university students in accessing Information and Communication Technology (ICT) resources. Students are constrained by access to ICT on many levels: physical access, psychosocial access, epistemological access and content access. This suggests that curriculum designers planning to include ICT in a programme need to consider access in its broadest sense if they are to prevent students from being on the wrong side of the digital divide.

INTRODUCTION

The call to include Information and Communication Technology (ICT) in higher education encompasses multiple agendas. The ways in which ICT enriches education prepares students for a technologically advanced world; it can make education more efficient; and it can transform pedagogical approaches. These are among the many reasons espoused by proponents of new technologies (Czerniewicz, Ravjee and Mlitwa, 2006). Whatever the rationale, the issue of distributive justice associated with introducing ICTs into education in a country with highly uneven access to technology, remains troublesome (Broekman, Enslin and Pendlebury, 2002).

This article focuses on issues of access arising in interviews with students in a Foundation programme at the University of KwaZulu-Natal (UKZN).[1] Students in the Foundation programme are from historically disadvantaged schools, and do not meet the University's entrance criteria in their National Senior Certificate examination (NSC). As a result, through a combination of selection tests along with their NSC results, these students gain access to a university education *via* the Foundation programme within the Centre for Science Access at UKZN. During their study of Mathematics, these students are introduced to a number of ICT enhanced activities. In evaluating this exploration through student interviews, access to ICT emerged as a dominant theme whereby the digital divide has a major impact on the potential for such innovations to succeed.

The digital divide is a phrase used to describe the gap between 'digital haves' and 'digital have-nots' (Kozma, McGhee, Quellmalz and Zalles, 2004). Such a gap is a measure of social inequality which can

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1 This article arises from a larger study undertaken by Aungamuthu (2009), which considered the implementation of an ICT enriched Mathematics class more broadly.

prevent a country from competing equally with other countries (Tien and Fu, 2008). The digital divide may cause social, economic and educational disparities among inhabitants thereby amplifying existing social differentials (Kozma *et al*, 2004). By not understanding and addressing the digital divide and its effects, a country like South Africa, with its apartheid past, runs the risk of creating a 'digital apartheid' (Thatcher, 2007: 352). This could produce social instability within a country (Herselman and Britton, 2002). Effectively, a failure to understand and address the digital divide could have negative implications for a developing country like South Africa.

The concept of access to ICT is often understood in terms of physical access to resources. Issues such as whether there are sufficient computers for students to use and whether they have sufficient time to use them are of course vitally important for anyone considering implementing ICT enriched learning. However the discussion of the data in this study argues that these are merely necessary conditions and are far from sufficient. In describing the ICT access constraints faced by Foundation students, the argument is that the issue of access to ICT needs to be considered in a far broader sense than simply physical access. This paper concludes by making recommendations for course designers who wish to make use of ICT for teaching and learning purposes.

CONCEPTUAL FRAMEWORK OF ACCESS TO ICT

The notion of 'access to ICT' was expanded by Wilson (2004) from being strictly understood as physical access to a broader notion that encompasses the following conceptualisations:

Financial access refers to the cost of using and maintaining ICT relative to a user's income. In this study, the software chosen was either shareware or that maintained by UKZN, thereby minimising the financial ICT burden on students. However, with regard to printing credits, students had to draw on their own financial resources. With the exception of solutions to assessment tasks, the nature and the content of the ICT resources used did not require printing.

Cognitive access[2] refers to the knowledge and skills needed by users to use ICT effectively. In this study, training in the form of classroom teacher demonstration and group based ICT activities on specific software, together with the Foundation programme's computer literacy sessions sought to address the issue of cognitive access. However, given the South African context of under-preparedness (Czerniewicz *et al*, 2006), this is not viewed as a panacea. Rather, training is viewed as a socially inclusive intervention to get all students interested in using ICT as a tool to support their understanding of mathematical concepts.

Design access refers to the ease with which a user can operate and interact with ICT. In other words, it refers to the user friendliness of an ICT tool, which allows users to use ICT to meet their needs. Design access encompasses taking the special needs of users into account. In this study, the design of the ICT application in Excel made use of English vocabulary that students, who are not English mother tongue speakers, would be familiar from their classroom activities. For the other ICT tools used in this study, the training provided was meant to support students' access to the design of the tool.

Content access refers to the meaning and relevance of ICT to users' needs. In the study, during demonstrations and classroom activities involving ICT, the reason for using ICT was explained to students.

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2 For the purposes of this article, 'cognitive access' is referred to as 'epistemological access' as the latter term is more appropriately aligned to the paradigm of the study from which data for this article has been used. Further, cognitive access may convey a message which suggests that there is a deficit with the user's intellect. Rather than convey such a message the word 'epistemological' is preferred, which calls for transparency and explicitness on the part of the ICT design. Epistemological access is thus to do with access to knowledge and the ways in which such knowledge is constructed (Morrow, 2007).

Students were told, at the beginning of a lecture, that the tool was being used to help them develop their understanding of a particular mathematical concept and to give them an opportunity to practice that concept. In this way, students were made aware of the potential role ICT could play in their learning.

Production access refers to the degree to which a user can create products related to their needs. While the ICT tools used in this study gave students the freedom to experiment by using their own examples as inputs, this freedom was limited to a particular class problem; for example, the ICT tools used could only solve a system of three linear equations in three unknowns. A student curious about other systems of linear equations would have to engage with alternate resources, such as the internet, library, peers, and the lecturer. While this is acknowledged as a limitation of the ICT tools used, production access did not emerge as a theme in the data. This may be related to the ICT competence of the participants and suggests a line of enquiry for future research.

Institutional access refers to the availability of ICT vendors within a potential user's geographic and social radius. It is the location, both geographically and socially, of these vendors that give shape and structure to how physical access to ICT is controlled, regulated and policed. Physical access in Wilson's (2004) understanding is either blocked or facilitated depending on a potential user's geographic and social proximity to an ICT vendor. For example, ICT located at a university local area network (LAN) (vendor) may only be accessible to members of the university community. Even though the institution's geographic distance may be accessible to the general public, for those who are not members of the University, it is outside their social radius. Further, depending on structures within the University, membership does not necessarily translate into ICT use. In this study, by virtue of their status as students of UKZN, students could be assumed to have institutional access. However, it was this assumption that the gathered data challenged.

Political access is concerned with a potential ICT user's participation in the process of determining how best to tailor ICT to the user's needs. Political access is about involving the potential user in all aspects surrounding the use and governance of ICT. While the students were not involved in the choice of ICT tools, the nature of this study aimed to hear their voice which, to a degree, underlies the spirit of political access.

METHODOLOGY

During 2008, Pietermaritzburg students in the Foundation programme were exposed to a number of ICT augmented classes. These included: PowerPoint slideshows, which used animation and graphics to introduce students to concepts associated with types of sets and types of real numbers; Venn diagram software which allows visual representation of union, intersection and complement, etc; and a Gauss Tutor, developed on Excel, on which students check their calculations by providing feedback after each row in the Gauss Reduction Table is populated, and which provides clues for executing the algorithm. These technology infused classes and tasks were augmented by personal email correspondence from the lecturer.

While many of these interventions may seem simple, the nature of disadvantage experienced by many of the students meant that most were unfamiliar with computer use. Students were trained during lectures, in groups of four to six, to use the software. Through the Foundation programme's computer literacy sessions, students were taught to operate an email system.

Thirteen semi-structured interviews were carried out with students who had volunteered to participate in the larger study from which this paper arises. Interviews were recorded, transcribed and imported into Nvivo

software. Nvivo facilitated the storing of codes, themes and sub-themes that were part of the qualitative thematic content analysis. The themes and sub-themes generated through the data analysis were validated by a focus group consisting of twelve participants - one participant failed to attend - thereby establishing cultural validity. One of the major themes which arose was that of access to ICT. The data revealed that access is not a simple concept with one level of meaning but rather that there were a variety of forms of access to ICT which made the use of ICT problematic. This article considers the theme of access in greater depth.

PARTICIPANTS' ICT ACCESS CONSTRAINTS

This section describes the guises in which participants' access to ICT was constrained. The complex and multi-dimensional layers associated with ICT access (Czerniewicz, Ravjee and Mlitwa, 2006; Wilson, 2004) were very much in evidence in the data and so the ways in which ICT was being introduced and used in the course had to be re-considered. The data highlighted that assumptions made around issues of access failed to reflect their nuanced nature. The data is presented and discussed under four themes; namely, physical access, psychosocial access, epistemological access, and content access.

Physical Access

Participants expressed concern at having insufficient time during their academic day to make use of the university computer LANs. Participants' lecture schedules coupled with the demand for computers in the LANs constrained participants' use and engagement with ICT. This concern of participants is captured in the following extract:

Ja, 'cos you'll go to LANs, computer LANs and you'll find out that they are two courses booked and if you look at it there's only one [LAN] left and its crowded and you're looking at some okay I've only got forty five minutes … (Tsepo).

Tsepo explained that he found it difficult to use computers in university LANs because he was competing with students from others courses for use of the computers. Nomonde, another participant, indicated that the length of the queue in the LAN was the main determinant of whether or not she used a computer. Tsepo and Nomonde explained that if a student was lucky enough to get a computer he or she could only use the computer for a short time, a maximum of thirty to forty minutes less waiting time, before rushing off to their next lecture.

During the focus group discussion, participants reiterated their concern about having insufficient time to engage with ICT resources. Participants who lived in the university residence felt sorry for their peers who lived off campus and could not use the time at the end of the academic day to engage with ICT resources. Students who lived off campus had to rush from university to ensure they had transport home:

…but most people who like live off campus or away from the campus they have a problem in that they sometimes have to get special transport to maybe take taxis… they never really get time to do the work [on a computer] (Lu).

Participants' concerns regarding their physical access to ICT resources mirror the findings of other ICT studies (see Kozma *et al*, 2004; Yu and Smith, 2008). Participants' experience with regard to physical access to ICT should signal a planning concern for course designers wishing to use ICT in their curriculum. It highlights how institutional structures, such as the Foundation students' busy timetable, blocked participants' physical access to institutional ICT resources.

Czerniewicz *et al* (2006) estimate that 7.2% of South Africans own personal computers; Fuchs and Horak (2008) put the figure at approximately 8.27% whilst Statistics South Africa's Community Survey (2007) has the figure at 15.7%. While these figures suggest a rise in computer ownership, these are low when compared to developed countries like the United States of America, with 61.8% of Americans in 2003 having access to a computer in their home (Day, Janus and Davis, 2005), and Taiwan with 73% of households owning a computer (Tien and Fu, 2008).

With such low ownership rates in South Africa it is unlikely that participants owned personal computers, particularly given the disadvantaged nature of the students in this study. In 1999, 0.9% of black women and 1.3% of black men had a computer at home (Fuchs and Horak, 2008). This, coupled with institutional structures that constrained participants' physical access to ICT resources, prevented participants from reaping the learning benefits commonly associated with ICT learning environments. Learning benefits, such as learner centeredness (Heemskerk, Brink, Volman and ten Dam, 2005); self-regulation (Yu and Smith, 2008); and conceptual development (Hartley, Treagust and Ogunniyi, 2008) were rendered intangible to participants. Thus, while participants had institutional access by virtue of their status as students, their membership did not translate into physical access.

Psychosocial Access

This theme was reflected in participants' expressed need to be supported socially by their peers and friends in using ICT resources. Given their lack of ICT confidence, participants explained that learning with their peers and friends gave them the emotional support to risk engagement with the various ICT resources. In this way, participants emphasised their need to be provided with psychosocial access to ICT.

Participant's felt that part of having access to ICT meant having access to peer support. As one explained:

> Cos if you have to go like alone [to the LAN] we sometimes just ignore the [stammers a bit]…Yes, the software, cos we know we are afraid to do anything [by ourselves]… (Siphamandla).

For many participants a computer was something new to them, something that they got to experience for the first time during Mathematics lessons and the Foundation programme computer training sessions. Due to their computer inexperience, students in this study explained that using a computer stirred up 'fear and anxiety' within them. To help students overcome their fear and lack of computer confidence, participants felt that students should have about a week to evaluate and experiment with software:

> … We have sessions where they work with the computer during the week and then on Fridays they [students] would have feedbacks … Like when they would not talk to you as the lecturer but talk to their peers what they understood and what they didn't understand (Justice).

By having an opportunity to share their ICT experiences with each other, participants believed that they could learn from each other and so learn how students are using the available ICT resources. In this way they would feel encouraged to risk engagement with ICT and so allay their ICT anxiety. This experience of participants draws attention to the integration of ICT into a curriculum and the associated pedagogical implications of such integration. This resonates with the ICT literature in education (see, for instance, McCarney, 2004; Martin and Vallance, 2008). The data suggests that in order to integrate ICT into a curriculum, a teacher needs to embrace a pedagogy which fosters co-operation with students and among students, reflective of political access. Such pedagogy needs to be focussed on learning, where learning entails students' active support of each other in the meaning-making process. This requires practice and nurturing and needs to permeate all aspects of a curriculum.

While important for most participants, peer support had its detractors. Some participants felt that they would have benefited more had groups been arranged around friendship groups:

> Ja you are in the same class but there's not that bond, ja so it's kinda difficult to like [say to the group you are in]hey errrr I don't understand now … Ja [I felt] embarrassed to ask (Minenhle).

Minenhle explained that he felt uncomfortable asking questions of his group members and he unquestioningly followed their instructions when they gave him advice. He felt pressured to accept their advice, feigning understanding in order to protect his self-esteem and social status within the group. When the lesson had finished, he left the classroom not understanding the mathematical concept being studied. For other participants, having their friends as their group members made their learning meaningful and fun. This diminished their ICT anxiety and fostered their development of mathematical concepts:

> It was nice 'coz like by that time we were not familiar with software. We had to go with our partners in groups of four, you find someone making mistake you laugh at him and then you correct him and do another mistake and they correct each other (Thulani).

Thulani explained that he did not feel anxious to ask questions because he was learning from his friends. Thulani agreed that he may have been reluctant to ask questions had he not been in a group with his friends. Some participants explained that having access to their friends in the evenings helped them engage with ICT resources, further highlighting the importance of learning with their friends:

> We were arguing about one problem. I was saying no this was supposed to be two and the other said no it can't be two it must be six because of this and this… So no one wants to believe each other, so the best solution is to go to the LAN… (Khumalo).

It was clear from the interviews and the focus group discussions that participants not only needed physical access to ICT, but also psychosocial access to ICT. In other words, by having more opportunities to share their ICT practice with their peers and friends, participants felt that they could have gained greater and deeper access to the potential learning opportunities afforded by ICT.

Participants' need for support from peers and friends not only emphasises their need for the provision of psychosocial access to ICT; it signals that the classroom learning environment had an influence on participants' access to ICT. Participants' reluctance to ask questions of group members who were not their friends constrained their meaningful use of ICT resources; limiting their personal meaning-making of mathematical concepts. Where the group is not well-structured and managed, it does not serve the purpose of providing psychosocial access to the use of ICT, instead the peer support and group work is superficial (Kirschner, Beers, Boshuizen and Gijselaers, 2008). Thus, underlying participants' need for psychosocial access to ICT was their need for a safe, supportive learning environment where each person is respected and learning is understood as a co-operative process.

Epistemological Access

While South African universities can boast of successes in terms of greater equity of access, they cannot claim the same successes in terms of equity of outcomes (Cooper and Subotzky, 2001; Scott, Yeld and Hendry, 2007). Epistemological access is about providing the kinds of access to knowledge structures and academic practices that can lead to equity of outcomes (McKenna, 2003; Boughey, 2005). The notion of epistemological access to higher education generally is thus much discussed (see Scott *et al*, 2007; Morrow, 2007).

The suggestion in this paper is that introducing ICTs into a Mathematics class would allow the students to understand some aspects of the ways in which mathematical knowledge is constructed at university. The ICT interventions allowed students to see visually the processes they were required to implement and to 'play' with concepts for which they would need to take ownership. The idea of epistemological access thus underpinned the introduction of these ICT applications as a means to make the mathematical practices required for success in higher education overt.

However, the use of ICTs entails a set of practices of its own. The data indicates that students' lack of experience with computers rendered much of the engagement difficult. Epistemological access to Mathematics was not facilitated by the use of ICTs where students did not have the requisite technical proficiency. The inability to use the software was a major issue of access arising in the data. Such access was understood both in terms of the technical facility in using computers and in terms of an understanding of how the computer learning related to the practices required of them in class.

As one participant explained:

> It was totally scary. At some point I thought ah, what's the use 'cos we're not gonna get tested for this so I, I didn't even bother myself with knowing them. I think it was because it was the first er, er, software we used. … It was very useful only like showing us in the class. But the fact that I couldn't access it on my own … (Gugu).

Gugu's comments above captured participants' despondence at being unable to access the software sent as attachments to emails. Without the necessary computer skills at their disposal or an understanding of how these computer practices related to the mathematics practices the software was designed to develop, some participants withdrew from engaging with the ICT resources.

Participants felt that they would have benefited from regular training:

> [If I were a lecturer] I will not just give it [software] to them [students] but they must first know how it works and then may have tutors (Moe).

Participants believed that they needed some introductory training before working on specific software. They felt that such training would remove the anxiety they had experienced by giving them confidence to work with ICT. This suggests that participants needed to be trained first as competent ICT users in order for them to gain epistemological access. The author is not oblivious to this need, but assumed that the introduction and training on the use of specific software provided in class was sufficient. The data clearly shows otherwise. The need for such transparent access to ICT has pedagogical ramifications for course designers wanting to integrate ICT into their curriculum. This is discussed in the recommendations section of this article.

Content Access

Content access refers to the meaning and relevance of ICT to users' needs (Wilson, 2004) and relates closely to the issue of epistemological access above. In this study, during ICT demonstrations and classroom activities, the reason for using ICT was explained to students. Students were told, at the beginning of a lecture, that the tool was being used to help them develop their understanding of a particular mathematical concept and to give them an opportunity to practice that concept. In this way, efforts were undertaken to make students aware of the potential role ICT could play in their learning.

Despite this, some participants expressed the need for ICT to have more direct relevance to their learning. Some participants felt that it was pointless to use software when they could have solved the problem without the aid of software:

> There's no sense in doing it with the computer 'cos you've got another way to do it (Justice).

Justice felt that the software was redundant because he could confidently apply the Gauss Reduction algorithm without needing the software to help him. This sentiment was further echoed:

> Yes there has to be the need [to use the software]… (Se).

Se felt that due to her academic workload, she needed to use her time strategically and was only willing to use ICT when she perceived that ICT would afford her something different from her classroom experience. This mirrors findings of other studies where students used ICT to meet their specific learning needs (see Czerniewicz and Brown, 2005; Conole, de Laat, Dillon and Darby, 2008). Czerniewicz *et al* indicate that this call for ICT use to be more than add-on approaches, and to incorporate 'adding value in the form of follow-up, interactive learning activities, [and to address] issues of curriculum transformation' (2006: 39) is fairly widespread. This suggests that clear reasons for using ICT needed to be discussed with participants; along with discussions on how to use ICT as a learning resource. Such discussions could help students understand how to use ICT resources to support and meet their learning needs thereby providing students with content access to ICT.

While the author believes that the software was directly relevant to the Mathematics curriculum and would allow for better epistemological access to mathematical concepts, not all the participants could see this connection. This raises concerns about implementing ICT as an add-on or *ad hoc* venture by individual lecturers rather than as a fully curriculated approach. Participants' need for relevance reflects their desire to understand the decision-making process within their learning environment. By sharing the decision-making process with students, lecturers can help students become critical users of ICT resources. This is related to the psychosocial access theme discussed above where participants wanted opportunities to discuss and critique ICT resources with their peers. Further, this suggests that the learning environment influenced participants' engagement with ICT, which, along with pedagogy, has implications for course designers.

RECOMMENDATIONS AND CONCLUSION

Participants' experience of the digital divide reveals that their access to ICT was affected by three factors: the tension between institutional structures and institutional ICT resources; pedagogy; and the classroom climate. These three factors need to be addressed by curriculum designers wanting to integrate ICT into a curriculum. As such, the following recommendations are made.

The tension between institutional structures such as students' timetables and institutional ICT resources suggests that proper planning needs to go into making ICT physically accessible to students. ICT cannot be simply an add-on to a curriculum, where it is assumed that students will find the time to use ICT resources on their own. Students' timetables need to be considered so that ICT can be meaningfully embedded into their curriculum. Future research could explore the ICT needs of UKZN students. Such research is important as it will shed light on students ICT needs and inform university planning and resource provision.

An educator's pedagogy needs to develop the ICT skills and knowledge that students bring to the classroom. Such pedagogy needs to enhance students' ICT skills and knowledge through curriculated training sessions while maintaining a focus on discipline specific learning goals. The ICT medium must not

become the message but must be used to help students achieve discipline specific learning goals (Yoon, Ho and Hedberg, 2005). In order to promote such 'pedagogy of access' to ICT, students and teachers need to be engaged in dialogue so that meaning-making becomes a socially shared and constructed practice (Hendricks and Quinn, 2000: 456). In other words, the educator's pedagogy must provide students with political access to the curriculum (Wilson 2004). In this way, students may be able to see ICT as a relevant learning tool and use it to satisfy their learning needs and teachers may be able to harness effectively the learning potential of ICT.

A pedagogy of access, which facilitates socially constructed meaning-making, needs to be supported by a classroom climate that embraces sharing and co-operation between all students. The classroom needs to offer each student a safe climate in which to risk engagement with all learning activities. Students need to share a bond that unites them and focuses them to achieve their learning goals together. In this way, students can maximise their use of ICT learning tools.

REFERENCES

Aungamuthu, Y. (2009) *An exploration of foundation students' perceptions of learning mathematics with the aid of Information and Communication Technology.* MEd dissertation. Pietermaritzburg: University of KwaZulu-Natal, South Africa.

Boughey, C. (2005) 'Epistemological access to the university: An alternative perspective' *South African Journal of Higher Education* 19(3) pp.230-242.

Broekman, I., Enslin, P. and Pendlebury, S. (2002) 'Distributive Justice and Information Communication Technologies in Higher Education in South Africa' *South African Journal of Higher Education* 16(1) pp.29-35.

Community Survey 2007. http://www.statssa.gov.za/community_new/content.asp (Accessed 5 June 2009).

Conole, G., de Laat, M., Dillon, T. and Darby, J. (2008) '"Disruptive technologies", "pedagogical innovation": What's new? Findings from an in depth study of students' use and perception of technology' *Computers & Education 50* pp.511-524.

Cooper, D. and Subotzky, G. (2001) *The Skewed Revolution: Trends in South African Higher Education 1988–1998.* Education Policy Unit: University of the Western Cape, South Africa.

Czerniewicz, L. and Brown, C. (2005) 'The uses of information and communication (ICT) in teaching and learning in South African higher education practices in the Western Cape' *Perspectives in Education* 23(4) pp.1-18.

Czerniewicz, L., Ravjee, N. and Mlitwa, N. (2006) *Information and communication technologies (ICTs) and South African Higher Education: Mapping the landscape.* Pretoria: The Council on Higher Education.

Day, J.C., Janus, A. and Davis, J. (2005) *Computer and Internet Use in the United States: 2003.* http://www.census.gov/prod/2005pubs/p23-208.pdf (Accessed 5 June 2009).

Fuchs, C. and Horak, E. (2008) 'Africa and the digital divide' *Telematics and Informatics* 25 pp.99-116.

Hartley, M.S., Treagust, D.F. and Ogunniyi, M.B. (2008) 'The application of a CAL strategy in science and mathematics for disadvantaged Grade 12 learners in South Africa' *International Journal of Educational Development* 28 pp.596–611.

Heemskerk, I., Brink, A., Volman, M. and ten Dam, G. (2005) 'Inclusiveness and ICT in education: a focus on gender, ethnicity and social class' *Journal of computer assisted learning* 21 pp.1-16.

Hendricks. H. and Quinn, L. (2000) 'Teaching referencing as an introduction to epistemological empowerment' *Teaching in Higher Education* 5(4) pp.447-457.

Herselman, M. and Britton, K.G. (2002) 'Analysing the role of ICT in bridging the digital divide amongst learners' *South African Journal of Education* 22(4) pp.270-274.

Kirschner, P.A., Beers, P.J., Boshuizen, H.P.A. and Gijselaers, W.H. (2008) 'Coercing shared knowledge in collaborative learning environments' *Computers in Human Behavior* 24 pp.403–420.

Kozma, R., McGhee, R., Quellmalz, E. and Zalles, D. (2004) 'Closing the digital divide: evaluation of the World Links program' *International Journal of Educational Development* 24 pp.361-381.

Martin, S. and Vallance, M. (2008) 'The impact of synchronous inter-networked teacher training in Information and Communication Technology integration' *Computers & Education* 51 pp.34–53.

McCarney, J. (2004) 'Effective models of staff development in ICT' *European Journal of Teacher Education* 27(1) pp.61-72.

McKenna, S. (2003) 'Changing discourses of Academic Development' *South African Journal of Higher Education* 17(2) pp.60-67.

Morrow, W. (2007) *Learning to teach in South Africa.* Cape Town: HSRC Press.

Scott, I., Yeld, N. and Hendry, J. (2007) 'A case for improving teaching and learning in South African higher education' *Higher Education Monitor* 6. Pretoria: The Council on Higher Education.

Thatcher, A. (2007) 'Using the World Wide Web to support classroom lectures in a psychology course' *South African Journal of Psychology* 37(2) pp.348–353.

Tien, F.F. and Fu, T. (2008) 'The correlates of the digital divide and their impact on college student learning' *Computers & Education* 50 pp.421-436.

Wilson, E.J. (2004) *The information revolution and developing countries.* Cambridge: MIT Press.

Yoon, F.S., Ho, J. and Hedberg, J.G. (2005) 'Teacher understandings of technology affordances and their impact on the design of engaging learning experiences' *Educational Media International* 42(4) pp.297-316.

Yu, C. and Smith, M.L. (2008) 'Powerpoint: Is it an answer to interactive classrooms?' *International Journal of Instructional Media* 35(3) pp.271-282.

Back to the future: Varsity College lecturers' views of the net generation student

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ABSTRACT

The net generation (Oblinger and Oblinger, 2005) was born around the time of the emergence of the personal computer, and, as a result has grown up with access to technology. Higher education institutions now face this generation of students in their classrooms. This paper discusses how technology has influenced the way these students process information and learn. The author, an Academic Development Coordinator at Varsity College, investigates the thoughts and perceptions of the teaching faculty about this generation and how the former can integrate technology into their teaching to support student learning. Suggestions are made regarding ways in which lecturers can respond to these students' learning styles.

INTRODUCTION

Few people would disagree with the statement that 'we live in ever changing times'. The exponential nature of information development means that yesterday's fact can be today's fiction and even tomorrow's folly. The generation and flow of information is based on technology and to remain 'connected' to what is current requires information technology literacy. As a result today's students typically access his/her world of information constantly through internet connected devices, like cell phones, smart phones, laptops and net books. By contrast the integration of technology within some of our classrooms is not always at the levels at which technology is integrated into students' lives. Although some lecturers attempt to integrate technology in their teaching styles, even if it be only with the use of PowerPoint presentations as a visual aid to teaching, they are often the minority. This paper defines and discusses the implications of having the net generation in our classrooms. It argues that due to the characteristic ways in which these students process information and engage with technology, faculty need to think about adapting their teaching styles to accommodate them (Barton and Skilba, 2006). Yet despite the rate at which technology has integrated into daily life and is influencing the learning styles and practices of students – traditional teaching methods are often used, this in itself is not necessarily the problem. It may be that the choice of teaching practice may lack interrogation and that lecturers do not think often enough about whether or not these choices are still of value to this new generation of students. This paper provides a synopsis of faculty's perceptions about the net generation of students and the use of technology to support student learning.

VARSITY COLLEGE CONTEXT

Varsity College is a private higher education institution in South Africa consisting of seven campuses located across the country. The participants in this research are located at the Cape Town campus.

This campus has an average number of 2000 students, half of whom are enrolled for diploma courses conferred by The Independent Institute of Education (IIE), the International College of Hotel Management (ICHM) and the IMM Graduate School of Marketing. The remaining half is dual-registered with both the University of South Africa (UNISA) and Varsity College. (UNISA is an open and distance learning university.) Students at Varsity College completing UNISA degrees attend Varsity College for tuition which supplements the curriculum they receive directly from UNISA.

It is important to note that the relative higher cost of private education suggests that Varsity College students may have privileged socio-economic backgrounds and therefore have fairly good access to technology when compared to the average South African university student who comes from disadvantaged backgrounds in both urban and rural areas and so is unlikely to have access to computers and the internet at home. Access to technology is further enhanced for Varsity College, Cape Town students as there is an average ratio of one computer per ten students. Hence the term 'net generation' in this paper refers to middle-class students and is not to be seen as a term that can encompass all South African students. The extent to which the term could be applied to this generation of school leavers is another topic of research.

The majority of the teaching faculty of Varsity College are independently contracted by Varsity College to provide lecturing for specific modules based upon their academic qualifications and their industry experience. This model is based on the premise that current industry knowledge and experience enriches the learning experience of the students. The faculty do not necessarily hold professional educational qualifications and so it has been necessary to provide opportunities for teaching and learning support to lecturers. This is the role of the Academic Development Coordinator (ADC) who is the education specialist on a Varsity College campus. It is his or her role to run workshops on teaching and learning related topics as well as conduct peer reviews with faculty in order to support good teaching practice and generally maintain contact with lecturers to keep the quality of teaching and learning foremost in their minds.

THE NET GENERATION

The net generation are those students born around the time that the personal computer was introduced and as a result they grew up with computers as a part of their life (Oblinger and Oblinger, 2005). Other terms that are used in literature for this generation include 'generation-C' (for content) and the 'millennial generation' (Benson, Bedford, Eubanks, Lehnguth, Li and Shaw, 2008). Prensky (2001) refers to this generation, that have always lived with emerging technologies, as 'digital natives' and he suggests that they use technology differently to those from previous generations who he refers to as 'digital immigrants'. The former students are comfortable in environments that are technologically rich and where multimedia is used, especially audio and visual media (Sandars and Homer, 2008). Izzo (2002, cited in Munro, 2006:1-2) characterises the net generation as being 'digitally literate and connected; experiential; entrepreneurial and independent; rejecting micromanagement; and valuing empowerment, collaboration, and immediacy.'

Oblinger and Oblinger (2005) highlight several important characteristics of the net generation. Firstly, they are more visually literate than previous generations. They express themselves easily using visual images and integrate these visuals with text and audio with ease. Secondly, as shown by Munro (2006), they value immediacy. This is evident in how fast they expect a response to their output as well as how fast they expect to receive information. They have an ability to multi-task and therefore often complete many tasks and activities simultaneously. Lecturers will be aware of how students communicate *via* text message and Facebook while in class. When students are working on an assignment at a computer, texting continues as well as their connection to social networking and instant messaging applications online. Multi-tasking is also evident in the social activities of students (Benson *et al*, 2008). When they

are in groups and socialising face-to-face, other absent social group members are often included *via* cell phone technology.

In the light of the above, it is important to consider the way that the net generation learns. Oblinger and Oblinger (2005) characterise the learning style of the net generation as experiential; they like to learn by doing rather than by being told what to do. The net generation also learn comfortably in teams, they value structure and they expect interactivity in their learning experiences. They learn easily with visually represented information and in kinaesthetic ways (learning activities that incorporate movement and physical action). Harriet Swain (2010) reported on comments made by David Melville, Vice-Chancellor of the University of Kent, on this generation of university students. He acknowledged that universities need to respond to this generation of student as they are immersed in technology, use online social networking and *Wikipedia*. This generation interacts with the knowledge they access and the functionality of *Wikipedia*, for instance, allows users to add and change the information provided. Melville and his faculty realised that this would lead to a profound change in both student learning and faculty teaching in that students expect to be involved in the design of their education. Furthermore, once information has been accessed, it is no longer seen as something you hold onto, but rather information to be shared with others. This brings about interesting challenges for universities who value intellectual property, maintain copyright and limit access to information. Similarly, there is increased evidence of plagiarism amongst students as they view information and ownership of that information differently to the traditional and still accepted values of a higher education institution.

FACULTY PERCEPTIONS

Faculty meetings are held at the beginning of each academic semester at Varsity College, Cape Town. This is where lecturers meet to consider aspects of teaching and learning as well as to plan and discuss the semester that lies ahead. It was within the faculty meetings of January 2010 that the information for this article was generated. One of the themes for teaching and learning support in 2010 at Varsity College is 'Technology to support best teaching practice' (Whaits, personal communication, 2009). The author, in the role as ADC, played an online *YouTube.com* video clip (Brenman, Fisch and McLeod, 2009) at these faculty meetings to stimulate discussion on the digital students in the classroom and how technology can support best teaching practice appropriate to this type of student. The video content is about the information age and the impact this has on the student (*ibid*). Faculty then entered into facilitated discussion with the author about the nature of the net generation student as well as the integration of technology into the classroom to support student learning. The following is a discussion of the comments made by faculty during these meetings.

The first set of comments made by lecturers was to do with the speed at which net generation students expect to receive information.

> This generation wants everything instantly; they're losing their sense of intuition.

> They need time to understand, they're not going to get the knowledge they need instantly.

The challenge for lecturers lies in the relatively slow process of traditional pedagogy and student learning; e.g. the Socratic Method. Students may have this expectation of immediacy due to the instant speed of the internet and convenience of the technology.

The speed and ease with which students can access information means that the skills of sorting and judging the relevance of the information are not necessarily in place. This was supported by the comments below.

We can create structure so that they can discern between what information is good and bad.

They lack the ability to judge what factually correct information is. Whatever they read on the internet is taken at face value.

In the author's experience students mostly rely on the internet as a source of information in compiling assignments and doing extra reading on a topic. This may be due to the ease with which information can be accessed. However, as noted above, they often lack the skills to judge accurately the quality and credibility of the information that they source. Badke (2009) suggests that the net generation has been let down because they have not been equipped with the skills to distinguish the essential difference between traditional publications and the average website. The gateway to the internet is most often a search engine and even further limited by the use of a basic Google search. Most students will simply rely on the top ten or fifteen search results on a topic as a source of information. There is also no inherent quality control of content and anyone with a modem is able to put information online. There is, therefore, the need for a traditional library, but we also know that students respond better to the interactivity of digitised text and the visual supplementation available online. Yet if this is not always the best quality, how do we get books to match up? Due to the fast pace at which new information is generated in this information age, lecturers and students also have pressure and desire to engage with only the latest possible information on a topic. In many disciplines this is outdated by the time it is published in printed format. The answer may lie in a balance of online and traditional sources of information and an awareness of the limitations and benefits of both.

Students' mindset has changed (*sic*). It's not about the learning process; they just want to pass the exams.

We are judged on pass rates, how will all of this additional effort be recognised?

Students want to pass the exam. I don't think they've changed from students 40 years ago. Human beings are fixed.

These comments provide insight into the kinds of pressures that exist for lecturing staff in higher education institutions. A discussion about these pressures is relevant when considering integrating technology into the classroom because it may explain why lecturers have been slow in introducing this technology.

The first comment above shows teachers' frustration with students' practice of surface rather than deep learning (Ramsden, Beswick and Bowden, 1989) as they focus on learning areas of content that will get them through the assessments. Lecturers may feel that any activities involving the use of technology will be seen as a waste of time by the students. In fact integration of technology into the classroom and teaching practice is not an add-on task, but should rather be a teaching tool. It is also evident in the second comment that lecturers believe that integrating technology into the classroom and adjusting pedagogy for the digital student is 'additional effort' and therefore a separate task, rather than inherent to teaching the student of the net generation.

We need to teach the same way we always have, to give them grounding and keep them rooted.

My class gives them discipline. We cannot lose what we've always had.

It is not about technology. We don't need technology in our classes, it just distracts from what I have to say.

These comments suggest that some members of faculty are still resistant to the concept of integrating technology into their teaching. Such integration does not mean that technology replaces the role of a good teacher. This statement is supported by Professor Fothergill, who has integrated podcasting into his teaching of engineering students at Leeds University (Hoare, 2010). While podcasting proved to be popular and successful, he acknowledges that technology on its own is not enough. He says that technology works best when integrated with traditional teaching techniques and that he has found students to be most receptive to a blend of teaching methods like face-to-face teaching, supplemented with technology. But the fact remains that the old model of pedagogy 'teacher-focused, one-way, one-size-fits-all, makes no sense to young people who have grown up in a digital world' (Tapscott, 2008).

Respondents also commented on the role that technology can play in teaching in a way that caters to a variety of learning styles.

Catering to diversity is important.

Technology has enormous potential for stimulation of the senses and with a little creativity educators can enhance their teaching effectiveness with the use of technology.

I've had to think about what role this cell phone plays in my class. It doesn't seem as though they can be without it.

When considering how assimilated cell phones and internet devices are within normal daily life, it seems that the only time students may be 'unnaturally' disconnected from their world is when they are in the classroom. Can we effectively teach fish out of water? Martineau (2008) suggests that educational institutions must begin to rethink their policies regarding the use of these devices in the classroom, not only because the classroom is becoming increasingly dissonant to the students 'real' (*sic*) life, but also because these devices possess useful capabilities for the teacher. While it may be expensive to equip all students with laptops, cell phones are relatively cheap and are already in the classroom. Accessing the internet *via* these cell phones allows for online activity like chat, information searches, and online gaming. While these may previously have seemed inappropriate for a classroom setting, with creativity on the part of the teacher these activities may hold educational value for the net generation. One of the primary uses of technology is for communication and this is a major reason why the net generation assimilates technology into their daily lives. They use technology extensively to network and socialise (Oblinger and Oblinger, 2005).

Students socialise better today with the use of sms's.

Students need better soft skills to function in the working world today.

Older generations often say that 'young people' today do not know how to communicate or socialise because they are always on their cell phones, even when in face-to-face company. It could be argued that the opposite is true. The net generation is on their cell phone for that distinct reason, often including many more people than just those engaged in the face-to-face conversation.

There are student websites with past exam papers. It took me years to find them and only a moment for students to tell me where they are.

Students like to rework an existing piece of knowledge. It's like *Wikipedia*, they build on information.

They ask how they can improve things.

The extent to which students today are technologically savvy and connected means that they are able to process information far faster than ever before. An aspect of this processing is their practice of constructing knowledge upon that which already exists. This is evident in their approach to learning which is constructivist in nature rather than being receptive to mere transmission. The *Wikipedia* phenomenon, as alluded to in the comment above, has resulted in students' expectations that they should interact with, and even change, information that they access. The internet and supporting technology also allows students to pool information and knowledge in ways that respond to their learning needs. In the case of the first comment – students' concern with assessment and need for past examination papers results in an online place to store and retrieve these papers. This shows how students make technology function to meet their needs.

There is a dissonance between the student we have and the curriculum we work with.

Information is often out of date; we need to find ways of keeping information instant and current.

Students may also feel frustrated with the traditional university practice of prescribed texts and learning material that is often print-based and therefore less malleable, up-to-date or interactive than online sources. These comments may be an indication of a need for supplementation of prescribed references with online resources for teaching and learning, which may be more up-to-date and interactive.

The faculty expressed their views about the role that they play as educators to cater for the needs of the net generation, as well as how their teaching currently supports the learning of the net generation.

We can create a framework upon which students can hang knowledge.

We need to be adaptable, flexible and responsive.

These comments show that lecturers are thinking beyond the mere transfer of content and value the importance of scaffolded learning (Vygotsky, 1978). This concept of 'scaffolded learning' may be pertinent for the net generation who, according to Brenman, Fisch and McLeod (2008) are entering into a working world with employment positions that do not yet exist. Therefore the content knowledge may not be as important as the framework within which that knowledge is constructed. In some disciplines the first year of study is obsolete upon graduation. This shows that we need to be equipping students with generic and transferable skills, which serve as a platform for lifelong learning.

Today's students have a constant stream of information coming into their consciousness; we need to find ways for them to let some out.

The author found this to be a particularly interesting comment and for him it resonated with the fact that this information age and digital environment must have an impact upon the psyche of the individual. It highlights the need for active learning opportunities and engagement between the lecturer and student in the classroom. As an institution, Varsity College responds to this important need by keeping class numbers relatively small, with a maximum of forty five students in a class to allow for student interaction. Technologies like blogging, online chat and social networking may be tools with which students can disseminate information.

How do I include videos and online content without internet access in my classroom?

There is no denying that technology and the hardware it requires costs money and within this economic climate funds are not always easily available. Unfortunately, it is common within education that the facilities required to integrate technology into the classroom are not always as readily available as would be ideal. However, Oblinger and Oblinger (2005) remind the reader that they must not assume that the net generation necessarily wants to use technology heavily in their education. They make the important point that net generation learners 'don't think in terms of technology; they think in terms of the activity technology enables' (*ibid*: 2.10). Furthermore, they argue that educational institutions should not assume that more technology is necessarily better but rather technology that enables certain types of activities is likely to be appreciated by students.

You guys (ADC) have got work to do with us – we need training.

This final statement serves as a call to attention for support staff and the institution – that faculty may be open to dealing with the net generation, but they do not necessarily have the knowledge and skills to adjust their teaching to best influence the learning of the net generation.

HOW CAN WE RESPOND TO THE NET GENERATION?

The meetings between faculty suggest that some lecturers are excited and poised to make dramatic changes to their teaching, but await institutional investment in technology hardware. Whereas others feel that integrating technology into their classrooms is a giant leap and one for which they neither have the time nor inclination. Integration of technology need not change all that a lecturer does in the class. It can mean achieving the same educational goals in a new and more efficient way by making only small changes and introducing technology slowly. Similarly, there is no need for environments that are buzzing with technological wizardry to be effective. Rather, a lecturer can find creative ways of using the resources that do exist.

This article highlights the importance of lecturers knowing how students interact with technology and what technologies they employ in their daily lives. The next step for lecturers is to find ways of integrating this into their teaching. Examples are: the use of students' cell phones (online access, MXit, Facebook and SMS), library computers, data projectors, Facebook pages, free blogging sites, and podcasting. Renard (2005) speaks of the value of free resources, like instant-messaging and blogging for learning. Lecturers can create links with students across the country *via* instant messaging and encourage discussion and sharing of knowledge on topics covered in the class. MXit and Blackberry chat are free (or nominal cost) functions that are cell phone based, therefore the technology is already at hand in the class. 'M-Learning' is a term referred to by Benson *et al* (2008), which incorporates the use of mobile technology for learning. This uses Wi-Fi, 3G and cellular connectivity to online sources.

The key characteristic of technological user interfaces is visual stimulation. As noted at the beginning of this article the net generation responds to visual stimuli and they are considered to possess high visual literacy. Net generation students understand concepts that are graphically depicted more than concepts that are explained using large amounts of text. This is likely due to the student's constant access to online media. Lecturers may need to transfer the design characteristics (more graphics and less text) of web pages popular with students to the design of their PowerPoint slides and visual aids.

Students are comfortable with multimedia rich environments. Hence it is reasonable to suggest that it may be necessary for lecturers to look beyond the textbook or whiteboard to engage with more of the senses and other learning styles. The teaching and learning culture at Varsity College is one rich in the appreciation of facilitation style pedagogy and therefore the use of group work. The net generation responds well to collaboration in completing tasks as well as the social interaction derived from this style.

Renard (2005) suggests the use of 'a WebQuest', which is defined by Dodge (1997, cited in Renard, 2005) as 'an inquiry-based activity in which all of the information that learners interact with comes off the internet'. Students are given a topic and task, they are provided with links to online sources that they must visit to complete the quest. While this may seem basic a decade later than when proposed by Dodge, the current value may lie in the capacity of this task to coach students to access more credible sources or use a wider variety of sources than they are used to doing (and encourage the use of online databases).

Prensky (2001) brings attention to the importance of reflection in the learning experience of digital students. This is often lacking in the way a student thinks due to the twitch-speed at which information is processed. If reflection is a time for students to create 'mental models' from experience then teachers need to make time available for personal reflection on the learning that is taking place (*ibid*). This reflection occurs in reading and writing activities. It may be important to step away from the activities of group work and team interaction at times to revert to individualised experiences of reflection, where knowledge can be consolidated.

CONCLUSION

It is a challenge to teach at a time of exponential growth in information technology and its users. Change is needed in response to the technology that has had such a profound effect on the students we have in our classes. The faculty at Varsity College are becoming increasingly conscious of the characteristics of the net generation student and the role that they as teachers play in integrating technology into their teaching to support student learning. They are grappling with these issues and considering ways in which they can respond better to the net generation.

REFERENCES

Badke, W. (2009) 'How we failed the net generation' *Online.* July/August http://www.onlinemag.net (Accessed 13 January 2010).

Barton, A. and Skilba, J. (2006) 'Adapting your teaching to accommodate the net generation of learners' *Online journal of issues in nursing* 11(2) p.15.

Benson, S., Bedford, A., Eubanks, D., Lehnguth, H., Li, Y. and Shaw, C. (2008) 'The next challenge and frontier: Digital learners and digital teachers' Asia-Pacific Sub-regional Preparatory Conference for the 2009 World Conference on Higher Education, *Facing Global and Local Challenges: the New Dynamics for Higher Education* Macao, SAR PR China http://www.cte.umd.edu/staff/spencer/spencer-publications.html (Accessed 3 February 2010).

Brenman, J., Fisch, K. and McLeod, S. (2009) *Did you know? 3.0 (Official Video)* http://www.youtube.com/watch?v=PHmwZ96_Gos (Accessed 15 January 2010).

Hoare, S. (2010) 'The shock of the new' *The Guardian* http://www.guardian.co.ik/digital student/shock-new/ (Accessed 4 February 2010).

Martineau, P. (2008) 'Teaching with technology: The communication revolution reaches students where they live' *The education digest.* March 2009 http://www.eddigest.com (Accessed 2 February 2010).

Munro, C. (2006) 'Transitioning from Traditional Classroom Training to Laptop-Facilitated Learning: responding to the Orientations and Preferences of the Net Generation' *College Quarterly* 9(1) pp.1-11.

Oblinger, D. and Oblinger, J. (2005) *Educating the Net Generation*. Washington, DC: EDUCAUSE.

Prensky, M. (2001) 'Digital natives, digital immigrants, Part 2: Do they really think differently' *On the horizon* 9(6) http://www.marcprensky.com/writing/Prensky%20-%20Digital (Accessed 2 February 2010).

Ramsden, P., Beswick, D. and Bowden, J. (1989) 'Effects of Learning Skills Intervention on First Year Students' Learning' *Human Learning* 5 pp.151-164.

Renard, L. (2005) 'Teaching the DIG Generation' *Educational Leadership* 62(7) pp.44-47.

Sandars, J. and Homer, M. (2008) 'Reflective learning and the net generation' *Medical Teacher* 9(10) pp.877-879.

Swain, H. (2010) 'Students fashion their own education' *The Guardian* http://www.guardian.co.ik/digital student/1/ (Accessed 2 February 2010).

Tapscott, D. (2008) 'How to teach and manage Generation Net' *BusinessWeek Online* 12/1/2008, p.7.

Vygotsky, L. (1978) *Mind in society: The development of higher psychological processes.* Cambridge: Harvard University Press.

Whaits, A. (2009) Conversation with the author.

Institutionalising service-learning

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ABSTRACT

Higher education has three core pillars: teaching, research and community engagement. Teaching and research endeavours have dominated university agendas. However, momentum in prioritising community engagement is growing. The developing emphasis placed on the third pillar raises an opportunity to investigate how community engagement is conceptualised and therefore prioritised within the higher education landscape. Community engagement is expressed as a continuum in higher education inclusive of five overlapping activities of which service-learning is just one. This paper outlines what service-learning is and its potential role in the transformation of higher education, as well as to signal the importance of institutional commitment to service-learning. Lastly, the paper offers a synthesis of the available literature on how to implement successfully service-learning modules.

INTRODUCTION

Transformation and social responsiveness are challenges with which Higher Educational Institutions (HEIs) grapple, driven in part by the demands of globalisation. The 1997 White Paper describes globalisation as referring to 'multiple, inter-related changes in social, cultural and economic relations, linked to widespread impact of the information and communications revolution, the growth of trans-national scholarly and scientific networks, the accelerating integration of the world economy and intense competition among nations for markets' (DoE, 1997: 9). In this globalised environment the traditional functions and responsibilities of universities are in danger of being narrowed down to 'increasingly being located within the demands of economic productivity and its requirements for particular kinds of knowledge and skills' (Singh, 2001: 8). Singh argues for a broader understanding and for the thorough conceptualisation of social responsiveness.

One indicator of transformation in higher education is for universities to produce graduates whose proficiency is not locked within the discipline: '[h]igher education has a role to prepare people to go beyond the present and be able to respond to a future which cannot be imagined' (Waghid, 2002: 459). To achieve the mandate of a broadened transformation agenda, Singh (2001: 15) and Calhoun (cited in Singh) propose the re-insertion of 'public good' as a focus in higher education. The achievement of the public good requires a deeper inquiry into 'the ways in which the core activities of higher education (teaching, research and community service) could yield public good benefits' (Singh, 2001: 9). The debate around the re-insertion of the 'public good' has resulted in more focused attention on community engagement activities, such as service-learning in higher education curricula.

COMMUNITY ENGAGEMENT IN HIGHER EDUCATION

A perusal of HEIs' mission statements reveals that these often encompass the notion of engaging with communities, however noticeable emphasis is placed on teaching and research endeavours (Bringle and Hatcher, 2000: 273). HEIs have various ways of interpreting, responding to, and indeed prioritising, service. Boyer felicitously argues for a scholarship of engagement through which the academic endeavour can be changed, student learning enhanced, and the relationship between the university and its community can be strengthened to ensure the university fulfils its mission and vision (Boyer, 1994: 18).

The differentiated response of universities to community engagement can be linked to the primary educational mission of the institution; in other words, the institution classification and identity impacts on how it chooses to conceptualise community engagement (Pollack, 1999).

Figure 1
Typology of Institutional Response to Community Engagement

Type	Primary Educational Mission	Concept of Community Engagement
Liberal Arts Institutions	Citizenship training for democracy, character formation	Engaging with ideas of value, training citizens for public life
Research Institutions	Expanding the knowledge base	Applying knowledge to solve social problems
Professional Institutions (Universities of Technikons)	Teaching applied concrete skills	Training professionals to perform needed social functions, clinical training
Private Institutions[3]	Demand-absorption driven, career-vocationally-oriented education	Access to educational opportunity and employment opportunities

(Adapted from Pollack, 1999)

In a typical liberal arts institution the predilection is to concentrate on universal quests which disassociate from the issues of daily life, 'education and the pursuit of truth is seen as service in and of itself' (Pollack, 1999: 15). Teaching, in such institutions, is often prioritised over research and community engagement. While we do not have such institutions in South Africa, some of the general degree offerings within traditional universities might be considered to fall within this category. On the other hand, research institutions often conceptualise community engagement in the primary role of knowledge creation and application; which in turn places research endeavours higher on the priority list.

The priority for professional institutions is to 'fulfil public service mission...see the development and application of professional skills as the basis of their service of the community' (Pollack, 1999: 16-17). In order to graduate successfully, students enrolled in professional institutions are often required to demonstrate the application of their professional skills *pro bono* thus moving closer to Boyer's (1997) engaged scholarship.

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3   In Pollack's original table this category refers to an institutional type best suited for the American context. This category has been amended to fit the South African context.

Private institutions fulfil the national demand for intermediate, middle level education and training (Kraak, 2002). Institutions in this category consider providing higher learning and professional training as the basis of their community engagement (Pollack, 1999).

Each institution's understanding of community engagement is related not only to type but also to organisational capacities, which impact on how the institution responds to and resolves the tension of balancing the focus of the three pillars of knowledge production (research), knowledge dissemination (teaching) and knowledge application (community engagement). In the South African context community engagement has an exigent role to transform higher education in order to become more socially responsive. There is thus a national imperative that HEIs visibly commit to this endeavour.

Community engagement comprises five activities within a continuum. Figure 2 below is a diagrammatic representation of this continuum. The diagram also signals the blurred divisions between the different engagements indicating that academic modules may shift along the continuum according to the academic outcomes of the course.

Figure 2[4]
Distinctions among Community Engagement Activities

(Adapted from Furco, 1996)
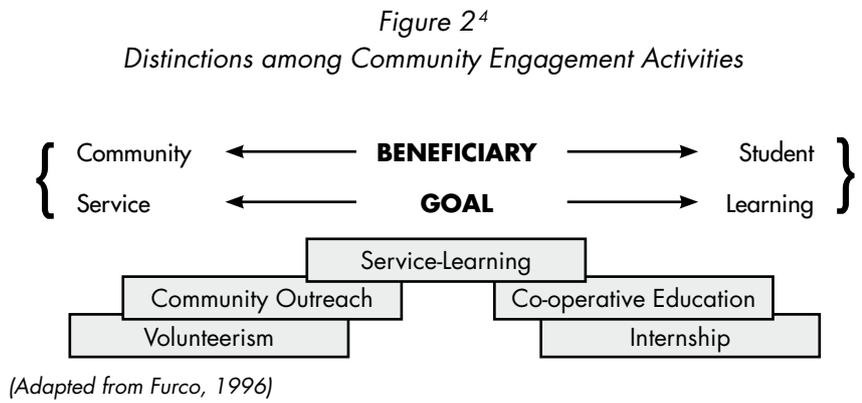
The community engagement activities on the right hand side of the continuum are regarded as experiential learning activities. These activities provide co-curricular opportunities related to the field of study either fully integrated in the curriculum as can be expected in Internships or less integration as in Co-operative Education. The community engagement activities on the left hand side of the continuum are generally altruistic, extra-curricula activities neither necessarily related to, nor integrated into, the field of study. The distinction of whether an activity in the continuum is related to the academic project is significant; it legitimises community engagement as part of the academic project.

Figure 2 illustrates the ideal positioning of the fifth activity in the continuum. Service-learning, in the middle of the continuum, strikes a balance between 'service', which occurs in the community, and 'learning', which is thought to be the domain of the university.

SERVICE-LEARNING

South African universities experience pressure from the Council on Higher Education (CHE, 2006), which recommends that service-learning be seen as part of a new social contract between the university and society, 'service-learning is entrenched in a discourse that proposes the development and transformation of higher education in relation to community needs' (CHE, 2006: 123). The emphasis that the CHE bestows on service-learning can be traced to the accusation, experienced at an international level, that higher education is not socially responsive: 'Higher Education has not succeeded in laying the foundations of

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4   Reference to this diagram can also be sourced in CHE (2006: 21).

a critical civil society with a culture of tolerance, public debate and accommodation of difference and competing interests. Nor has it contributed significantly to a democratic ethos and a sense of citizenship perceived as commitment to a common good. There is inadequate consideration of and response to the needs of our society' (DoE, 1996: 2).

Despite the call for such initiatives at a national level, 'service-learning' is a contested term. It is therefore helpful to frame the understanding of the term in the context of this paper. The contestation is evident in the various definitions and terminology claiming to describe the same learning activity. On careful examination it can be seen that the variants indicate different emphases, an example of this is the terms 'academic service-learning' and 'community service-learning'. To create a balanced focus, the term 'service-learning' is hyphenated to illustrate a balance as well as an interrelationship between service and learning (Furco, 1996: 2-3). Through this interrelationship there is both a kind of *service* and a kind of *learning* (CHE, 2006: 21).

Bringle and Hatcher's preferred definition outlines the main principles of service-learning as 'a credit bearing, educational, experience, in which students participate in an organized service activity that meets identified community needs and reflect on the service activity in such a way as to gain further understanding of course content, a broader appreciation of the discipline, and an enhanced sense of civic responsibility' (1995: 112). More recently, service-learning was described by Ash and Clayton as 'a collaborative teaching and learning strategy designed to promote academic enhancement, personal growth, and civic engagement' (2004: 138). Through thoughtfully organised activities, students proffer meaningful service in community settings that provide experiences related to academic material. The quality of the service and learning is enhanced by compelling students to examine critically their experiences through reflection (Ash and Clayton, 2004: 138). Service-learning champions regard it as a transformative pedagogical tool, with the potential to contribute significantly to the call for higher education to swing the pendulum so that there is a balance between 'ivory tower' deliberations and engagement with societal issues, thereby showing a more visible measure of social responsiveness (Singh, 2001: 11).

Service-learning courses link academic learning, community service experiences, and learning explicitly related to service. Service-learning is infused into courses to enrich the understanding of course content, broaden appreciation of the discipline, provide opportunities for practical application and enhance development of democratic citizenship. Impetus for lecturers to implement service-learning are the increased opportunities not only to enrich teaching and integrate service, but also to design research to improve future learning and service outcomes. Service-learning modules involve students in organised community service that addresses local needs, while developing their academic skills, sense of social responsiveness and commitment to the community.

The paper has so far broadly discussed the role of the community engagement continuum in higher education and then specifically conceptualised service-learning within that continuum. The focus diverts from theoretical underpinnings to practical considerations of design, implementation and sustainability of service-learning modules in institutions.

INSTITUTIONAL SUPPORT OF SERVICE-LEARNING

Before considering the nuts and bolts of designing, implementing and sustaining service-learning modules there is value in pausing to examine the significance of institutional commitment which the literature argues as a key factor for growth and sustainability of these modules in higher education (Bringle and Hatcher, 2000; Holland, 1997, 1999; Lynton 1995; Lynton and Elman, 1987; Ward, 1996; Zlotkowski, 1995).

Institutional changes that support the scholarship of engagement include: intentionally clarifying mission in a manner that produces increased congruence between the mission and practice; examining how the curriculum can better reflect community engagement; investing in infrastructure that supports community engagement; developing new models for assessing successful engagement in the community; and adjusting the roles and rewards of faculty so that faculty work in the community is recognised and supported (Bringle and Hatcher, 2000: 274).

Figure 3
Institutionalisation of service-learning
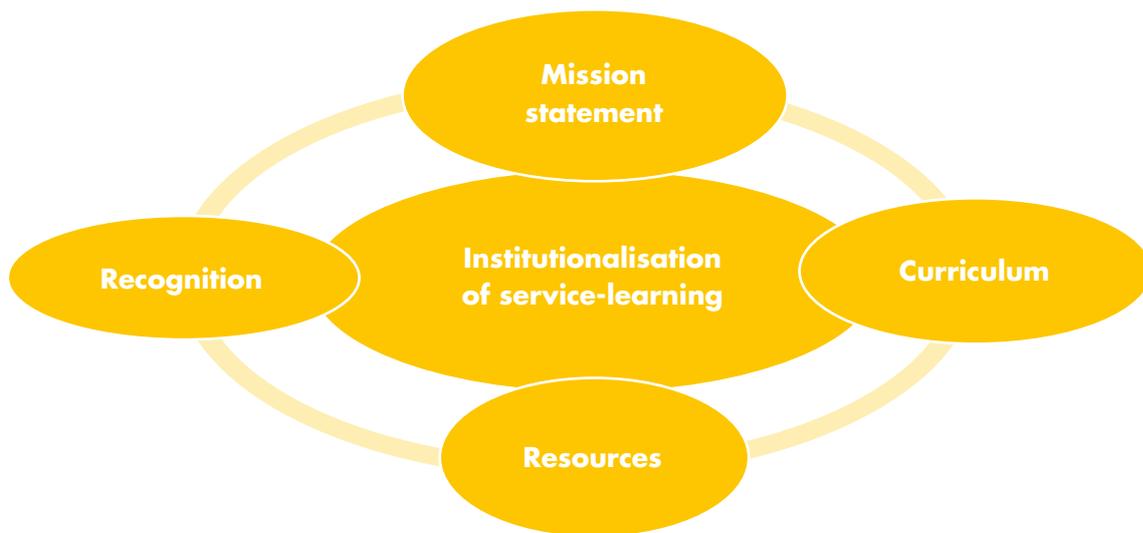
Essentially the argument is for the third pillar of higher education to have equivalent status to teaching and research. Identifying aspects of the mission statement that reveal how community engagement is conceptualised in the institution is a starting point. A relevant question to ask is: how is the mission statement supported by the curriculum processes in the institution? Structures and mechanisms for recognising lecturers successfully implementing these modules as well as adequate resourcing are imperatives that cannot be ignored in mainstreaming service-learning in the institution.

In order for service-learning to become an institutionalised component of higher education, institutions need to develop strategies that bring together the input from various stakeholders, such as academic staff, students and community partners in a way that ensures that 'their involvement in service-learning is sustained as a meaningful part of their long-term interest' (Bringle, Hatcher and Games, 1997: 45). In a study commissioned by Campus Compact[5] to ascertain the requirements for successful institutionalisation of service-learning, researchers Morton and Troppe (1996: 26) indicate that the following make institutionalisation likely:

- Congruence exists between institutional mission and strategic planning. This involves institutions developing an understanding of the degree to which service-learning is an integral component of the academic enterprise.
- Broad acceptance of the need for long-range planning and allocation of resources to support service-learning. For service-learning to be mainstreamed in the institution it is imperative that is part of the annual budget.

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5 Campus Compact was founded in 1985. It is a coalition of United States College and University Vice Chancellors committed to fulfilling the public purposes for higher education.

- Faculty are central to planning. This entails academic staff being involved in designing and implementing service-learning modules as well as there being broad understanding and support of service-learning right through the various institutional structures.

- Incentives are provided to faculty. Using service-learning as a pedagogic tool initially takes a lot of time in planning, therefore incentives such as course development stipends in the form of release time are beneficial. Official recognition of service-learning scholarship in retention, tenure and personal promotion procedures ameliorates the status of service-learning in the institution.

- Faculty work is widely publicised. Traditional academic publications are important in theorising service-learning and ensuring its credibility in the educational environment. However publicising service-learning activity through institutional and local media is advantageous in reaching a wider and more diverse audience.

- Campus plans for integrating community engagement into academic study evolve over time and across personnel. An important factor to consider is accompanying the strategic plan for service-learning guided by the mission of the institution with well developed evaluation mechanisms designed to monitor and thus co-ordinate all community engagement activities.

Additional positive factors mentioned in similar studies identify ringfenced funding and the appointment of staff to spearhead service-learning (Ward, 1996) as well as a focus on institutional policies regarding service-learning (Lyton, 1995). Perhaps more radical is Zlotkowski's assertion, which requires institutional cultural to transform from 'a set of elitist, self-referential academic assumptions' (1995: 130).

WHAT CONSTITUTES A SERVICE-LEARNING COURSE?

Service-learning courses are embedded within a curriculum programme where students are engaged in direct or indirect service to the chosen community site. Direct service provides opportunities for students to interact face-to-face with members of the community site in which they are placed. Examples are tutoring or mentoring high school learners in identified academic subjects or providing legal/medical/accounting expertise to identified indigent members associated with a Non-Profit Organisation. Indirect service involves students in a project with a focus on the impact of a community as a whole. An example is a project where students considered issues related to a rapid increase in demand for additional residential accommodation in a small town. The students collected data regarding the impact of this phenomenon, made recommendations to solve the problem and submitted these suggestions and solutions to municipal authorities.

In a discipline-based course, students have a presence in the community and complete assignments or participate in discussions that connect the classroom learning with the service activity. For example, in a Pharmacy course students were required to complete the Community Experience Module. Students interviewed and assisted patients from public health care facilities who had prevalent conditions like Asthma, Hypertension, and Diabetes. The interviews involved asking patients about their conditions and how these affect their lives. The students then educated the patients about their conditions, accurate and consistent dosage and healthy lifestyle habits. The experience gained in this module gave students insight into the socio-economic factors that often correlate with risky health behaviours.

Students in a project-based service-learning course use knowledge gained in the courses to work on a mutually identified community problem or need. The specific service-learning activity in a project-based course is not likely to be repeated. The partnership between the academic department and the community partner may continue with different problems each year. An example would be the local tourism office partnering up with Marketing students to develop and roll out a campaign geared towards mobilising volunteers for 2010 Soccer World Cup.

Developing service-learning modules requires time and effort; it helps to be guided by a model. The model presented is developed through a synthesis of the literature available, which is largely based on Eyler and Giles's influential 'Where's the learning in service-learning?' (1999). The elements discussed below are presented in a linear fashion. However the lecturer's contextual factors will determine in which order they are followed in reality.

Service-learning course development model

An effective service-learning course should include the following core elements:

- Connection to academic learning
- Analysis of the connection between academic content and service
- Student preparation and support
- Assessment and evaluation
- Sustainability.

Connection to academic learning

Conceptualising a service-learning module requires careful thought and a number of steps. The service activity must be connected to classroom learning and theory, and the selected community sites must be connected to course objectives and learning outcomes. The service enhances understanding of the academic content of the course and leads students to apply academic learning in a community setting. 'One of the main benefits of service-learning is its ability to expand student learning beyond [the] typical objective into a new range of learning outcomes that blend academic study with civic engagement and awareness, as well as practical experience' (Rubin, 2001: 18).

The service activity is designed with clear goals, expectations, and responsibilities for the lecturer, the students enrolled in the course and the community partner. There are clearly established lines of communication that allow for all groups to provide feedback about the service activity. A set of statements concerning the goals of the service, expectations and responsibilities for the lecturer, students and community partners is an essential component. These statements are derived from ongoing conversations and the development of mutual understanding and appreciation for differences in culture and practice within the partnership between the lecturer, students and community partners. Ideally in a joint effort the lecturer and the community partner develop a plan for service activity which focuses on how students will be able to engage meaningfully with the academic content of the course whilst meeting the community's priorities. The students will need class activities and assignments to assist them in making the connection between course content and in applying academic content to service activity.

Analysis of the connection between academic content and service

The learning experience includes structured time for students and community participants to reflect on and analyse the service experience. Providing structured discussions and/or assignments leading students in reflection of the service fosters student ability to connect the service to content and, conversely, to apply the content to the service experience. Reflection may be accomplished through a variety of approaches; including reflective journals (open ended or responding to questions), formal writing assignments, debriefing sessions soon after service experience, classroom discussions, electronic threaded discussions using learning management systems, examination questions, and final projects.

Student preparation and support

As part of the course plan students should be adequately prepared for the on-site activity, whether in class or through a learning management system. The course plan should include a description of the

activity, safety, time allocation, schedule, cultural sensitivity, understanding of and training for the tasks and approaches involved, and introduction to the work of the community partner.

In a well-structured service-learning course students are orientated to the responsibilities and issues related to service as well as an orientation into the community organisation(s) with which they will be working. Students may be introduced to people, issues, and communities with whom they are unfamiliar; they may be asked to confront and address previous stereotypes and biases. Good intentions alone are not enough to ensure that students approach new environments with respect and courtesy for those with whom they may come into contact. The following pointers are therefore helpful in preparing students for meaningful on-site activity:

- Clearly explain to the students the unique features of a service-learning course and how the service component fits into the course expectations.
- Help students gain a better appreciation for diversity and treating people who are different from themselves with respect is an important aspect of service-learning courses.
- Discuss the importance of maintaining the confidentiality of sensitive information that students might learn about the community partners.
- Students should be made aware that the community partners rely on students' service hours to help meet their needs. Students should be reminded that they must be dependable and provide the community partner with sufficient notice if they will not be able to make their scheduled commitments. This is an opportunity for students to learn values and professional ethics that might not be covered in a typical class.

Student support and monitoring of student participation should continue on a regular basis throughout the module. This can be facilitated through the reflection opportunities mentioned earlier.

Assessment and evaluation

A service-learning class, like any other class, needs an assessment and evaluation plan. Occasionally these two concepts are confused or conflated; both have important yet different roles to play in teaching and learning. Assessment focuses specifically on student action whereas evaluation encompasses the whole module, course or programme. 'Assessment consists, essentially, of taking a sample of what students do, making inferences and estimating the worth of their actions' (Brown *et al*, 1997: 8). In a service-learning module assessing whether learning outcomes are met is standard. In addition, how students' attitudinal and behavioural changes relate to the outcomes can be measured through a variety of pre- and post-course tools, such as Likert scales. Comparing pre- and post- responses to statements designed to measure behaviour can measures student progress.

Evaluation entails systematically collecting and reviewing information from all stakeholders, students, the community sites and lecturers involved in the service-learning module. Specific forms can be designed for each stakeholder group to gain important information. These can be in the form of pre- and post- surveys, which provide useful information for measuring course effectiveness and enhancing the quality of the service-learning experience.

The following components related to evaluating the service-learning module are important to consider:

- Evaluation of student performance in the service activity should be specified.
- The evaluation should measure the progress made towards meeting the learning and service goals of the course and demonstration of learning based on ability to connect service experience with course content.

- Evaluation should also include the extent to which the deliverables or project goals committed to are met.

Sustainability

Sustainability in service-learning refers to a number of aspects such as timing and duration which entails designing regular scheduled activities continuing throughout the duration of the module. Clear communication regarding the length of the partnership between the department and the community partner needs to be established (needs of the community partner are a factor). Regular and frequent student and lecturer interaction should be specified. Ultimately an indication of long-term sustainability is commitment from the department to offer the service-learning course on an annual basis.

CONCLUSION

Community engagement activities such as service-learning have a vital role to play in the transformation of higher education institutions. Continuing on the path of meagre emphasis on community engagement will result in an ineffectual higher education system which fails to respond to our society's exigent challenges. To guard against this, institutions need to institutionalise community engagement activities such as service-learning. For service-learning to be integrated successfully, it needs to be aligned to the institution's mission statement. Therefore the required prioritising and resourcing can support and legitimise the work undertaken within the institution.

REFERENCES

Ash, S.L. and Clayton, P.H. (2004) 'The Articulated Learning: An Approach to Guided Reflection and Assessment' *Innovative Higher Education* 29(2) Winter pp.137-154.

Boyer, E.L. (1994) 'Creating the New American College' *Chronicle of Higher Education* p.A48.

Boyer, E.L. (1997) 'The Scholarship of Engagement' *Journal of Public Service and Outreach* 1(1) pp.11-20.

Bringle, R.G. and Hatcher, J.A. (1995) 'A Service Learning Curriculum for Faculty' *Michigan Journal of Community Service Learning* Fall pp.112-122.

Bringle R.G., Hatcher, J.A. and Games R, (1997) 'Engaging and Supporting Faculty in Service Learning' *Journal of Public Service and Outreach* 2(1) pp.43-51.

Bringle R.G. and Hatcher, J.A. (2000) 'Institutionalization of Service Learning in Higher Education' *The Journal of Higher Education* 71(3) pp.273-290.

Brown, G., Bull, J. and Pendlebury, M. (1997) *Assessing Student Learning in Higher Education*. London and New York: Routledge.

Council on Higher Education (CHE). (2006) *Service-Learning in the Curriculum. A Resource for Higher Education Institutions*. Pretoria: CHE.

Department of Education (DoE). (1996) Green Paper on Higher Education Transformation. December Pretoria.

Department of Education (DoE). (1997) 'Education White Paper 3: A Programme for the Transformation of Higher Education' *Government Gazette*, 386 (18207), August. Pretoria.

Eyler, J. and Giles, D. (1999) *Where is the Learning in Service-Learning?* San Francisco: Jossey-Bass.

Holland, B.A. (1997) 'Analyzing Institutional Commitment to Service: A Model of Key Organizational factors' *Michigan Journal of Community Service Learning* 4 pp.30-41.

Holland, B.A. (1999) 'From Murky to Meaningful: The role of Mission in Institutional Change' In R. Bringle, E. Games, and A. Malloy (Eds.) *Colleges and Universities as Citizens*. pp.48-73. Boston: Allyn and Bacon.

Furco, A. (1996) 'Service-Learning: A Balanced Approach to Experiential Education' In B. Taylor (Ed.) *Expanding Boundaries: Service and Learning*. Washington: Learn and Serve America.

Kraak, A. (2002) 'Convergence of Public and Private Provision at the Further-Higher Education Interface: The Private Higher Education Landscape: Developing Conceptual and Empirical Analysis' *Perspectives in Education* 20(4) pp.53-65.

Pollack, S. (1999) 'Early Connections Between Service and Education' In Stanton *et al.* (Eds.) *Service-Learning: A Movement's Pioneers Reflect on its Origins, Practice and Future*. San Francisco: Jossey-Bass.

Lynton, E.A. (1995) 'Making the Case for Professional Service' Washington, DC: American Association for Higher Education Forum on Faculty Roles and Rewards.

Lynton, E.A. and Elman, S.E. (1987) *New Priorities for the University*. San Francisco: Jossey-Bass.

Morton, K. and Troppe, M. (1996) 'From the Margin to the Mainstream: Campus Compact's project in Integrating service with Academic Study' *Journal of Business Ethics* 15 pp.21-32.

Rubin, M.S. (2001) 'A Smart Start to Service-Learning' *New Directions for Higher Education* 114 pp.15-26.

Singh, M. (2001) 'Re-Inserting the "Public Good" into Higher Education Transformation' *Kagisano Higher Education Discussion Series* 1 pp.8-18 Pretoria: Council on Higher Education.

Waghid, Y. (2002) 'Knowledge Production and Higher Education Transformation in South Africa: Towards Reflexivity in University Teaching, Research and Community Service' *Higher Education* 43 pp.457-488.

Ward, K. (1996) 'Service-learning and Student Volunteerism: Reflections on Institutional Commitment' *Michigan Journal of Community Service Learning* 3 pp.55-65.

Zlotkowski, E. (1995) 'Does Service-Learning have a Future?' *Michigan Journal of Community Service Learning* 2 pp.123-133.

Curriculum responsiveness in Tourism programmes

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ABSTRACT

There is a growing demand for professionally educated and trained staff in the tourism sector. However, current literature reveals a significant disparity between the tourism education provided by institutions and the skills required by the industry. A major challenge facing institutions offering tourism education is the identification of industry needs and requirements and the involvement of industry in curriculum design. This paper examines the education, skills and training required of tourism employees and whether the provisions of higher education tourism courses are adequately meeting industry needs. Identifying this 'gap' will assist in the development of tourism education programmes that meet the needs of industry. The paper examines the perceived relevance of the tourism management qualification from three stakeholders' perspectives; namely, managers from the tourism sector, tourism graduate employees, and tourism academics. Surveys, in the form of structured questionnaires, were used to obtain information from the three groups. The overall findings of the study revealed that gaps exist in the tourism curriculum. The recommendations are that closer collaboration is required between academics and managers from industry and that a framework be developed in which the subjects, and industries are located.

INTRODUCTION

The purpose of this study is to ascertain whether tourism curricula at higher education institutions in the province of KwaZulu-Natal (KZN) are aligned with the perceived human resource needs of the tourism industry. More specifically, this study identifies gaps between the education and training provided to higher education tourism students and the human resources needs of the tourism industry in KwaZulu-Natal. The value of a curriculum can be best measured by the perceptions of its end users. When students embark on a higher education programme, they have expectations that they will find meaningful employment after graduation and will be able to makes use of the skills acquired during their studies. At the same time, employers expect that education providers have ensured that their curriculum is aligned to the needs of industry. This study looks for the perceived levels of alignment in KwaZulu-Natal.

The issue of employment preparedness arises from a clear notion that the job of higher education is to prepare students for the world of work. It should be noted that the author considers this but one aspect of the teaching and learning role of higher education, which as a public good should simultaneously be concerned with developing an engaged and critical citizenry. By focusing, in this paper, only on the imperative for curricula to be responsive to a particular labour market, it is not to be misconstrued as indicating that this is the only function of university teaching. However, it should be noted that this study takes place within a University of Technology (UoT), which has a particular vocational focus and aims for

its graduates to be workplace ready. And so, while cognisance is taken of 'the dangerous potential for the [UoT] sector to become industry trainers in that UoTs are simply producers of uncritical yet "skilled" labour' (McKenna and Sutherland 2006), this paper is specifically concerned that 'shortages of high-level skills and the concurrent incidence of graduate unemployment [indicate that] there is a significant mismatch between the output of the sector and the needs of the economy' (CHE, 2007).

RESEARCH METHOD

This paper considers the qualitative data collected through questionnaires from three stakeholder groups: (i) Tourism Academics from three public higher education institutions; (ii) Human Resources Managers or General Managers from industry who have employed tourism graduates from these institutions; and (iii) Tourism Graduates employed within the tourism industry. The empirical survey was conducted by means of an electronic-mail survey and hand-delivered questionnaires developed on the basis of issues raised in an extensive reading of the literature.

Tourism academics from the three public higher education institutions from the KwaZulu-Natal Province formed part of the sampling frame; namely, University of KwaZulu-Natal, University of Zululand, and Durban University of Technology. A total of 20 academics were identified as possible participants. Only 16 academics completed and returned the questionnaire. Of the non-participants, one was retiring and did not feel that it was necessary to participate; two were part-time and also felt that it was not necessary for them to respond; and one gave no reason for not responding.

Employers from the tourism industry and tourism graduate employees formed part of the sample frame. According to Mayaka and King (2002), employees should be well-placed to comment on quality gaps in their capacity as end-users of the skills acquired at college or on the job. All the human resource managers contacted were interested in participating in the research as they felt that the aims of the study were relevant to industry and education. A total of 14 questionnaires were sent out and eleven managers responded.

Serious problems arose with contacting graduates *via* lists from the academic institutions. Two of the three institutions did not maintain good graduate records and the few contact details provided proved to be largely outdated. The third institution indicated that it did not permit such information to be given out. A snowball sampling method was thus used. According to Riley, Wood, Clark, Wilkie and Szivas (2000), snowball sampling involves identifying a member of the population of interest and asking them if they know anybody else with the required characteristics. A total of 49 questionnaires were distributed to graduates and 33 responded.

OVERVIEW OF INDUSTRY PERCEPTIONS OF THE TOURISM CURRICULUM

In this study, most industry managers expressed dissatisfaction with the tourism curriculum offered at higher education institutions in terms of meeting industry needs.

Manager 8 had this to say:

> It does not prepare the learner for the working environment; a lot needs to be done to bridge the gap between what is taught and what is really required by industry.

Sharing this view, Manager 11 indicated:

> It is too vague and we find we still need to train them further according to our standards and industry standards.

Manager 10 stated:

> There is certainly a huge gap between the reading materials used in institutions in comparison to the up to date, ever changing information required in the industry.

Eight out of the eleven managers indicated that they were not satisfied that the curriculum meets industry needs, while two of the managers felt that they were partially satisfied and only one manager felt completely satisfied that the curriculum meets industry needs.

Manager 10 also stated:

> The institutions focus mainly on theoretical knowledge and a lot is not required in a working tourism environment.

Manager 9 agrees:

> Some graduates have a theoretical background on dealing with tourists but do not have the ability to do public speaking nor can they deal with conflict situations.

Sharing this perception is Manager 8 who says:

> Graduates struggle with problem solving skills, they run to the supervisor the minute they encounter problems.

The data indicated a great need for more soft skills in graduates. There is then a strong view that the current curricula do not address industry needs and that curriculum development work needs to be undertaken in collaboration with industry to ensure that courses offered are relevant and producing graduates with the skills and knowledge they will need to be future managers (Walo, 2000). Such industry input is fundamental to the notion of a responsive curriculum (Singh, 2006).

OVERVIEW OF ACADEMICS' PERCEPTIONS OF THE TOURISM CURRICULUM

According to Evans (2001), there are frequently differing expectations between educators and industry in that employers emphasise practical skills and general transferable skills, whereas educators are concerned with developing more conceptual and tourism specific knowledge. This suggests that these stakeholders have conflicting interests and this may lead to opposing views in terms of their perceptions of curriculum preparedness and industry need.

The perceptions of the academics who participated in this study were mixed.

Academic 2 stated:

> The feedback that we received so far indicates that our students are able to execute the tasks and responsibilities that lead to the development of the organisation that has employed them.

Academic 14 supported this view by indicating:

> Most of the employees that we contact are very happy with our students.

There is clearly a matter of concern here; while the academics indicated that they are in contact with industry and that industry is content with their alumni, industry representatives indicated the opposite.

A second concern is that when the departments were approached for alumni lists to participate in this study, no records were available. The absence of student tracking systems within departments creates doubts as to how such research is carried out with industry.

Academic 10 and Academic 13 indicated that employment rates are high implying that industry is happy with the tourism curriculum, 'negligible % unemployed' (Academic 10) and graduate employment rate is high and there has been very little negative feedback from employers (Academic 13).

These opposing views between industry and academics are evidence that stakeholder consultation is insufficient. These findings are in line with those of Evans (2001) indicating that poor communication exists between the two groups, a lack of involvement of educators in industry, and industry's role in education.

There is acknowledgement of this charge of lack of communication between stakeholders in the data from a few of the academics. Academic 1 stated:

> There are certain gaps which become evident when students get placements for internship programme.

This could mean that students may become more vocal when they return from their internship programme; perhaps making comparisons between the classroom theory and industry practice. Alternatively these students provide feedback to their internship coordinator through written reports based on their experiences, and these gaps may surface in the reports. Academic 9 expressed dissatisfaction with the curriculum-industry link:

> I feel it does not expose the students to the ever changing tourism environment.

This seems to indicate a concern about the use of traditional education methods in the light of a dynamic industry. Traditional education methods are not sufficient to meet the demands of a rapidly changing world which is driven by information, global competition and new technologies (Pillay, Lewis and Wilss, 2004). On noting the discrepancy between the industry and academics' views, and the different views among the academics, we are left with a number of questions. How often are education institutions engaging with industry? Do academic departments have policies that require lecturers to review their curriculum regularly? According to Cooper, Fayos-Sola, Hawkins and Spivack (1997), the aim should be to promote communication between those involved so that answers can be found for the complex needs of all stakeholders.

OVERVIEW OF GRADUATES' PERCEPTIONS OF THE TOURISM CURRICULUM

This study also includes the perceptions of tourism graduate employees (alumni) from the three public higher education institutions in the province of KwaZulu-Natal. Graduate employees were asked to comment on the curriculum that they followed during their study towards a degree/diploma in tourism. Students are recipients of education and are seen as future employees and as consumers of education output by paying for education and are involved in the education process (*Cooper et al*, 1997). Students are in a good position to comment on the curriculum as they form the link between education on the one side and industry on the other. As students, they have ambitions and expect to find employment after graduation. They place their trust in the hands of the educators and the department offering the programme and believe that the curriculum will meet with the expectations of the industry that employs them. Educators

are seen as captains who are in command of the ship and their authority is rarely questioned, until the student is confronted with the moment of truth. This is when the student arrives in industry and may find a mismatch between what was taught and what is required.

This perception of mismatch is evidenced in the data from the tourism graduate employees, when asked to comment on the tourism curricula that they followed during their term of study. Graduate responses in relation to the curriculum were mainly negative. Many of the graduate employees perceived that their tourism course was too general, and that it should have been more industry related:

> The course was more generic rather than being specific (Graduate 16).

> The course does not equip one with industry specific skills (Graduate 27).

In a similar vein, Graduate 2 stated:

> The course should focus on teaching learners specialist knowledge that is required in the tourism industry rather than providing an overview of the tourism industry.

These comments suggest that the curriculum may lack industry specific focus and may require more input from industry. These perceptions seem aligned to those expressed by industry participants and more tentatively expressed by some of the academic participants.

The data from the graduates seemed to support that from industry:

> There is too much theory, no on the job experience (Graduate 20).

> The course I took was more theoretical than practical so I found myself not knowing how to put theory into practice (Graduate 19).

> …need to learn how to communicate with others and to learn more on customer service and telephonic skills (Graduate 12).

Singh (2006) suggests that soft skills such as formal letter writing, personal skills and transferable skills must be considered when formulating curricula. Some education institutions use work integrated learning (WIL) as a solution to bridge the divisions between theory and practice. However, Singh (2006) points out that the whole area of work placement is controversial since the problem extends to the quality and type of placement offered by industry and the range of opportunities experienced by students. The concern here is the management of this component between education and industry to provide the student with the maximum benefit from the experience. Gee (1997) refers to WIL as 'reality skills' and states that the best practicum will attempt to link practice with what is taught as theory, while Collins (2002) sums it up as: 'there is no better teacher than experience and education is only a clinical approach to experience.'

DISCUSSION

The results of this study showed that closer collaboration is needed by industry and education to close the gaps between the sectors. The findings are consistent with Cooper, Shepard and Westlake (1996), Cooper, Fayos-Sola, Hawkins and Spivack (1997), and Riley, Ladkin and Szivas (2002). In their studies, the concerns are: the diversity that exists in the tourism industry; its fragmented nature; and the lack of agreement between government, industry and academics as to what constitutes a tourism industry, which creates difficulty in respect of training and education.

The suggestion in this paper is that the tourism curriculum should comprise a balance of vocational and academic focus. A lack of vocational application has consequences for the work-readiness of tourism graduates and impacts negatively on the efficiency of the sector. Conversely, a lack of academic or theoretical base to tourism education has negative consequences to tourism as an area of academic activity and to students that study tourism at higher levels (Cooper *et al*, 1996). They conclude that there is enormous diversity in the way tourism studies can be approached as a pedagogical subject.

A possible concern that arises from the graduate perception of mismatch between the tourism curriculum and industry need could be related to the fact that many academics who lecture within tourism programmes do not have a tourism qualification and may also lack industry experience. Saayman (2005) suggests that a lack of properly qualified lecturers are employed to present tourism courses at universities, technikons (now Universities of Technology), technical colleges and a number of private colleges. Adding to this problem is the application of broadly stated outcomes when the curriculum is designed. Considering that some tourism lecturers may lack industry experience, they may apply the minimum standard in terms of outcomes for the industry specific skills that is normally required by industry. Cooper *et al* (1996) indicate that there is a shortage of qualified educators with relevant industry experience and that few qualifications exist that primarily focus on the development of educators or scholars who seek a career in the field of tourism education and training.

Although this study considers the higher education sector only, it should be noted that this is also a major problem in South African secondary schools that introduced tourism as a subject. The majority of the teachers are not adequately prepared to teach tourism. This point is consistent with Pawson (2002), who conducted a study regarding a travel and tourism curriculum for the training of secondary school teachers. Pawson holds that there are no formally qualified teachers specifically in the learning area of travel and tourism and that teachers are recruited from subjects such as geography, history and economics to teach travel and tourism, because there is an absence of relevant teacher training in this field. There is thus an assumption that travel and tourism is a generic discipline in which everyday knowledge can suffice.

The findings in this study are consistent with the Department of Environmental Affairs and Tourism Human Resource Report (DEAT, 2008) that proposes that education and industry must join forces to promote and sustain the relevance of training. The report also encourages partnerships between industry, educators and trainers to promote transformation with regard to access to industry relevant content and industry's participation to enhance the design and delivery of educational programmes (tourism HRD SA). This echoes Steynberg, Slabbert and Saayman's (2003) statement that a curriculum should be based on the expressed needs of the industry as opposed to the judgements of tourism educators. This approach will better meet with the industry needs.

Constructing a tourism curriculum needs to take into account the diversity and multiplicity of players involved and as such a single perspective approach will not be successful. The design of curricula contents must simultaneously match up to the expectations of education recipients, employers, and educational professionals. The lack of concern by the universities for the industry's needs and the industry's failure to appreciate the difference between tourism education and tourism training promotes misunderstandings, which can only be rectified through ongoing engagement.

CONCLUSION

The results of this study show that gaps exist in the tourism curriculum. The findings of the qualitative results show differences in the perceptions of the three groups in terms of the extent to which the tourism curriculum meets the needs of industry. A majority of managers from the tourism industry expressed dissatisfaction with the tourism curriculum offered at higher education institutions. However, both graduates and managers

agree that the tourism curriculum is too theoretical and needs to focus on practical aspects as well. Many of the graduate employees found their tourism course to be too general and recommend that it should be more industry related.

There were mixed perceptions among the academics. Ten academics from a total of 16 are of the view that the tourism curriculum meets industry needs while six academics indicate that they are partially satisfied and recommend that closer collaboration with industry is essential when designing curricula. The results show that there is little evidence that alumni are being tracked so ongoing assessment of curriculum responsiveness is impossible. The general conclusion of the study is a call for greater curriculum responsiveness with an emphasis on stakeholder participation.

REFERENCES

Collins, A.B. (2002) 'Are we teaching what we should? Dilemmas and problems in tourism and hotel management education' *Tourism Analysis 7* pp.151-163.

Cooper, C., Fayos-Sola, E., Hawkins, D. and Spivack, S. (1997) *An Introduction to TEDQUAL: a methodology for quality in tourism education and training.* Spain: World Travel Organisation.

Cooper, C., Shepard, R. and Westlake, J. (1996) *Educating the educators in tourism: a manual of tourism and hospitality education.* Spain: The World Tourism Organisation.

Council on Higher Education (CHE). (2007) 'A case for improving teaching and learning in South African higher education' *Higher Education Monitor.* Pretoria: CHE.

Department of Environmental Affairs and Tourism (DEAT). (2008) *Draft document on the human resource strategy for tourism in South Africa.* Pretoria: DEAT.

Evans, N. (2001) 'The development and positioning of Business related University tourism education: A UK perspective' *Journal of Teaching in Travel and Tourism* 1 pp.17-36.

Gee, C.Y. (1997) *Human capital in the tourism industry: In search of professionalism for the 21st century: the need for standards in tourism education in a changing marketplace.* Spain: The World Tourism Organisation.

Mayaka, M. and King, B. (2002) 'A quality assessment of education and training for Kenya's tour-operating sector' *Current Issues in Tourism* 5(2) pp.112-132.

Mckenna, S. and Sutherland, L. (2006) 'Balancing knowledge construction and skills training in universities of technology' *Perspectives in Education* 24(3) pp.15-24.

Pawson, P. (2002) *A travel and tourism curriculum for the training of secondary school teachers.* Unpublished doctoral thesis (PhD). University of South Africa. Pretoria: South Africa.

Pillay, H., Lewis, G.B. and Wilss, L. (2004) 'Changing workplace environments: implications for higher education' *Educational Research Journal* 19(1) pp.17-42.

Riley, M., Ladkin, A. and Szivas, E. 2002. *Tourism Employment: Analysis and planning.* London: Cromwell Press.

Riley, R., Wood, R.C., Clark, M.A., Wilkie, E. and Szivas, E. (2000) *Researching and writing dissertations in business and management.* London: Thomson.

Saayman, M. (2005) *An international handbook for tourism education: South Africa.* Oxford: Elsevier.

Singh, R. (2006) *Tourism education an emerging essential: professionalising the tourism education.* New Delhi: Kanishka Publishers.

Steynberg, L., Slabbert, E. and Saayman, M. (2003) 'A global tourism curriculum: Organising pieces in the puzzle' *Commercium* 4(1) pp.1-11.

Walo, M. (2000) *The contribution of internship in developing industry – relevant management competencies in tourism and hospitality graduates.* Unpublished Master of Business Thesis, Southern Cross University, Lismore, Australia.

Using reflective practice in a Mathematics class

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ABSTRACT

This article reports on a reflective writing assignment that was carried out with second year General Mathematics undergraduate Bachelor of Education Foundation phase students at a Private Higher Education Institution for Teacher Education in Kwazulu-Natal. In an attempt to get students to develop a better understanding of the mathematical process, a reflective writing assignment was implemented over a period of 6 weeks, which included affective, content and process entries. The intention was to get the students to link the journal entries to the subject content that was covered during lectures, reflect on what they had learned and how they could implement this knowledge practically. The students would then be in a position to identify any gaps in their knowledge, which they could address before being assessed under examination conditions. Contrary to expectations, the students found the assignment to be an extremely difficult task and disliked completing it. They found it very time consuming and could not always see any value in reflective writing in a Mathematics module. In this article the insight and experiences gained from the assignment will be presented from both the lecturer's perspective and the students' feedback.

INTRODUCTION

This article tracks the implementation of a reflective journal assignment with a group of approximately seventy undergraduate pre-service teachers at a private higher education institution. The purpose of implementing a reflective journal assignment was primarily to encourage students to adopt a deep approach to learning to engage with the lecture content and coursework. Students were provided with journal prompts that linked to the content covered during lectures. The intention was to supplement mediated learning (Laurillard, cited in Hinett, 2002) by helping the student make connections between the theory and the constructs that they had learned formally during the lecture. Furthermore, some of the journal prompts developed un-mediated learning in that students were given examples of an incorrect response or solution and asked to unpack where the learner had made a mistake. In essence they were tasked with deconstructing the fictitious learners' thought process and considering the implications of each step in the calculation process to identify where the learner had erred. They then had to state how they would explain this error to the learners and what possible teaching strategies they could use. Thus, in answering a prompt question in their reflective journals, the students were given the opportunity to draw on the past (their lectures and any prior knowledge that they have of the topic) and the present (their textbook and whatever other resources they had at hand) and to direct themselves into a better understanding of the topic (Hinett: 2002). This article begins with a brief discussion of how the use of reflective practices as a pedagogical tool is understood in the literature. The methodology of this study is then briefly presented before the main issues arising out of feedback from the students are discussed.

WHAT IS REFLECTIVE PRACTICE?

The expectation, by the lecturer, was that students would become more aware of their existing knowledge, identify the shortfalls therein, and thus identify their strengths and weaknesses through the process of reflective writing. In completing the assignment the students were compelled to think about what they had learned and understood during their lectures. This required them to determine the links between their newly acquired knowledge and their existing knowledge and what impact this had on their current understanding. Furthermore, they became more aware of their progress and the development of their ideas as they interacted with different mathematical concepts. The difficulties that they encountered during the learning and the strategies they acquired and developed to overcome these difficulties were all part of the reflective process. Reflective writing, as a means of reviewing and consolidating their learning, allowed them to evaluate their performance and progress which enabled them to plan their studies. By promoting a deep approach to learning, the intention was to increase their confidence in their ability which would result in a more positive attitude to Mathematics and critical thinking skills.

The concept of 'reflective practice' has been variously ascribed in the literature but probably the most well known early proponent of its use as an educational approach was Donald Schön (1983). Reflective practice involves thoughtfully considering one's own experiences in applying knowledge to practice. Numerous approaches and tasks have been developed to encourage teachers and students to engage in reflective practice. Many of these involve reflective writing in the form of autobiographical narratives.

A great many research papers and conference papers make claims about how reflective practice enhances learning. Moon (2004) suggests that reflection can lead to deeper learning as students use metacognitive practices to engage with their learning in ways which achieve more complex and integrated knowledge structures. Hinett (2002) likewise indicates that reflection can improve the quality and depth of student learning by developing students' capacity to evaluate their learning and make judgements regarding the way forward. She furthers states that it is not just a process of looking back. It is in fact a transformational process that encourages critical thinking and deep learning through inquiry. Reflection is the process that gets us from just experiencing an activity to understanding it. Thus the intention of the intervention reported in this paper was to supplement mediated learning (Laurillard, cited in Hinett: 2002) by helping the student to make connections between the theory and the constructs that they had learned formally during the lecture.

The value of reflection as a pedagogical approach rests on the assumption that knowledge construction is a social practice. Learning is thus understood to be undertaken in particular socio-cultural ways. This constructivist understanding is based largely on the work of what has become known as the New Literacy Studies (NLS; see for example, Barton, 1994; Gee, 1996; Street, 1995; 1996). Learning, and thereby knowledge construction, is understood to be an ideological activity and one which is greatly influenced by the norms and conventions of the student's prior schooling and other environments and by the norms and expectations of the discipline in which such learning occurs.

While Mathematics might be understood to be an autonomous, apolitical and neutral set of skills, premises and functions requiring a generic approach to learning by students of the discipline, researchers within the NLS approach would argue that this is not the case. Mathematics, like all other disciplines, would instead be seen to be not as a unitary immutable set of facts but rather as differing across time and place and determined largely by the values of those who construct it. The norms and conventions of Mathematics are regarded as social constructs and not presumed to emerge naturally. Despite this emphasis in NLS on the specificity and shifting nature of social, cultural and political contexts, there would still be a realist acknowledgement of the universal truth claims made in Mathematics. A particular mathematical formula, for example, need not be understood in relativistic terms as only having meaning within its socio-

cultural, historical context. However, NLS theorists would understand that the ways in which the formula is developed, learned, or spoken about, or represented, or used would indeed be determined by, or greatly influenced by, the norms and conventions of the user.

This understanding of Mathematics as a set of socially constructed practices has a far-reaching impact on our understandings of how it is taught and used. It becomes far more important for the teacher to understand her students' personal contexts. It becomes far more important for the students to be made aware of the cultural and other norms and conventions at play in Mathematics. These norms and conventions are no longer understood as common sense and neutral but are instead understood to be political and less accessible to some students than to others. The need to make the peculiar norms and conventions underpinning Mathematics as a discipline explicit to students thus becomes a crucial part of teaching.

The link between reflective practices and this social constructivist understanding of learning in general and Mathematics learning in particular is clear. Claims that reflective practices allow students to consider common sense assumptions and beliefs embodied in their own experiences (Bell, 2002) and then make connections to the present situations and expectations (Dantas-Whitney, 2002) mean that using reflective practices in teaching is one way of helping students to acquire the norms and conventions expected of them within the discipline of Mathematics.

Understanding Mathematics (and all other disciplines) as being constructed by sets of socio-cultural practices means understanding that such practices are underpinned by specific sets of epistemological and ontological premises. Reflective practices are seen as one way of making beliefs, values and attitudes explicit (Ruddock *et al*, 2000; Leshem and Trafford, 2006).

METHODOLOGY

The assignment took place over a four week period, with students having to complete three reflective journal entries per week comprising an affective, a content and a process entry. The journal prompts related directly to the work undertaken during lectures the previous week. There was also a lecture on different theories of reflection which provided the opportunity to discuss with the students the benefits of this kind of assessment and how it relates to the outcomes of the module and curriculum. The theories of reflection discussed were structured debriefing, based on Kolb's experiential leaning cycle (Gibbs, 1998), levels in the development of teacher reflection from teaching practice (Watton, Collings and Moon, 2001) and Bloom's taxonomy (1956).

The students were given the opportunity to examine the assignment before the lecture in which reflective writing was discussed in order to identify beforehand if they had any difficulties with the language and the prompts.

Students received feedback on their reflective work for the first two weeks before they were required to submit their next entry to enable them to reflect on the feedback that they received and make the necessary changes. They also received written and verbal feedback which they could take into consideration before completing their next journal entry.

A qualitative approach to collecting data about the students' experiences was implemented with students being required to complete a questionnaire anonymously on completion of the assignment, regarding different aspects of reflective writing. The purpose thereof was two-fold. Firstly, to get feedback regarding the reflective task with the type of questions designed to ascertain if indeed a deep approach to learning

had transpired. Secondly, to ascertain if the students' perception of this task was that it had encouraged a deep approach to learning.

The questionnaire comprised of 11 statements that students were required to rate on a Likert scale from 1 to 5 to ascertain the extent to which they agreed or disagreed with the statements relating to reflective practice. Space was provided for additional comments after each statement to allow students to elaborate on or justify their rating.

FINDINGS

Feedback received from both the assignment and questionnaires was mostly positive with a number of themes emerging. Reflective writing forced students to review their work which had the dual result of identifying what concepts had or had not been understood, clarifying what was learned in lectures and therefore resulting, in a number of cases, in a deeper understanding of the content.

Reflection as a means of encouraging independent learning and motivation

By working through the journal prompts, students learned to think independently, thus their dependency upon the lecturer was decreased. Through a process of transformational learning (Mezirow, cited in Di Biase, 1998: 9) students were expected to discuss their thinking processes and identify areas of difficulty, if any, and what steps they took to overcome these. In addition to being given suggestions as to what other resources might help them understand and integrate the new knowledge with their existing knowledge, the students were encouraged to help one another. The students, in trying to identify errors in a calculation answered by a fictitious learner, had to reflect on how a learner might have gone about trying to solve the problem; identify what their thought processes had been; and what difficulties the learner might have encountered. Once students ascertained that there were content areas with which they were experiencing difficulty, they had to make a decision to either seek help or to do nothing, which would then impact on their test and examination results. Thus students were encouraged to take ownership of their own learning, which is an important part of being independent and having to make choices.

The reflective comments in the journals indicated that in many cases students were gaining confidence and expressed a sense of achievement when they were able to arrive at the correct solution. A few students indicated pleasure at the improvement in their marks and that they had found it motivating, which encouraged them to be accountable for their own learning. Many students had positive comments with regard to the individual goal setting prompt in which they were required to set goals for themselves. Cheung argues that 'the use of individual goal setting prompt accompanied with appropriate feedback and teacher support is crucial in building effective motivational approaches and self regulatory learning strategies in enhancing academic success' (2004: 7). She concludes by citing Dembo that students who set goals for themselves and develop plans to achieve these goals are in fact taking responsibility for their own lives.

Therefore within this context of Mathematics, reflective practice became a suitable tool for developing independent thought, critical thinking and in some cases, as a motivational tool as depicted by the following comments

> … made me analyse a lot more *and* (reflective practice) encouraged me to think about what I had learnt and not just accept that I know it (Anonymous student comments, MAT 202 Assignment, 2008).

Reflective practice as a means of communication

Students were very positive about the example in which they were required to identify the error and explain the correct process. Firstly, because it helped them to understand the difficulties learners might encounter.

Secondly, it gave them practice at explaining which they felt was good experience for teaching practice. They also identified the fact that although they had the knowledge and understanding of a particular concept they often had difficulty actually explaining the concepts and the mathematical processes involved. However, most students acknowledged that they had benefited from these types of journal prompts as they were finding it progressively easier to express themselves using mathematical terminology.

From an affective perspective, reflective writing provided students with an outlet for expressing their fear, frustration, and so forth as it had compelled them to become more honest with themselves. In agreement with Moon (2006), I found that reflective practice, and especially reflective writing, as a form of self-evaluation develops personal development and self-empowerment. In addition, reflective writing gives the lecturer in the role of a mentor, insight into specific issues and difficulties that the student might be experiencing. Furthermore, the reflective writing skills that the students learned by participating in this assignment, are skills that they will be able to apply throughout their teaching career.

Reflection as a tool to encourage a deep approach to learning

Some students acknowledged that they were now more aware of their own affective strengths and weakness and commented on how this impacted on their work, with regards to lack of confidence and belief in their ability. In some cases this had a motivating effect as they had identified the issues and could now move forward, but for others this was de-motivating as they were already investing a great deal of effort into understanding and learning Mathematics. Moon (cited in Hinett 2002: 3) states that when students move beyond passive assimilation of knowledge to enquiry, thereby promoting independent thought, and they are given a voice in the form of reflective practice their self-confidence and awareness increase. It is at this stage, she believes that they have developed a deep approach to learning. Of particular interest for me to note was that a few students indicated that they did not enjoy Mathematics and were therefore happy with a surface approach to learning. Therefore in future assignments motivating learners to the extent that they understand the value in completing the assignment and are willing to undertake the various tasks, will need to be an area of focus for the lecturer to address. However, I suggest that the locus of control and intrinsic and extrinsic motivation will also be factors influencing the approach to learning that individual students will adopt.

Reflection as a form of assessment and as an attitudinal measure

Some students felt that they should not be marked on reflective thought and therefore it should not be used as an assessment tool. A number of students had found the assignment stressful since it was structured differently to work in class and, therefore, they had found it difficult to transfer their lecture knowledge to a more practical and reflective scenario. At the conclusion of the assignment tasks, a number of students were still of the opinion that this type of assignment was more suitable to English and hence held no value for them as students of Mathematics. Assessment of the journal entries indicated that a number of students had done particularly good work and were able to identify and link the concepts in the prompts to the lecture content. This allowed the lecturer to identify whether or not the students had understood a particular section.

Through negotiated assessment the students had had an input on establishing the assessment criteria. The fact that not every journal entry was marked, in spite of this being negotiated, was viewed in a very negative light and many students found it de-motivating. Hence, the assessment strategy needs to be reviewed. Marking is a problem, it is very time consuming and lecturers usually do not have the time to provide constructive feedback, which is essential. In addition, many students go to a great deal of trouble and one does not have the time to mark every aspect of their work. Peer assessment and review (Moon, 2006) is an alternative to consider as a possible solution.

Furthermore, students cited other module commitments and assignments, which had resulted in them feeling under pressure, stressed and battling to cope. Time constraints also meant that there was no flexibility in the length of time in which they had to complete the entries. Students felt that they could have done better had they had more time, given that this was still a fairly new approach to assessment in Mathematics for them, and one in which they were still coming to grips. Negative feedback that filtered through was the fact that they did not gain as much because they were rushed and some were of the opinion that reflecting on work was not relevant to a Mathematics module. These issues in all probability gave rise to the students' opinion that this was a difficult assignment to undertake and why some did not enjoy completing it. Thus further consideration needs to be given to the number of prompts and the time framework within which to complete the tasks, when structuring this type of assignment for future use, to alleviate these problems.

CONCLUSION

This assignment design, as an attempt to encourage students to adopt a deep approach to learning to engage with the lecture content and course work can be considered to have been a success, in spite of some negative feedback from students. The negative criticism can be used to improve on the assignment and for future attempts to draw on, in addition to incorporating other reflective practice strategies. As Watson (2001: 1) writes: 'Reflection can happen through writing, speaking, listening, reading, drawing, acting, and any other way you can imagine.' Furthermore the number of entries that were included in the assignment could have detracted from its value. Nevertheless, the final outcome showed there was an overall improvement in students' reflective practice and writing skills, which, as pre-service teachers and later as fully fledged teachers, they will be able to put to good use.

REFERENCES

Barton, D. (1994) *Literacy: an introduction to the ecology of written language*. Oxford: Blackwell.

Bell, S.J. (2002) 'Narrative inquiry: more than just telling stories' *TESOL* Quarterly 36(2) pp.207–213.

Bloom, B.S. (Ed.) (1956) *Taxonomy of Educational Objectives: The Classification of Educational Goals, Handbook 1 Cognitive Domain*. US: Susan Fower Co.

Cheung, E. (2004) 'Goal Setting as Motivational tool in Student's Self-regulated Learning' *Educational Research Quarterly* 27(3) pp.3-9.

Dantas-Whitney, M. (2002) 'Critical reflection in the second language classroom through audiotaped journals' *System* 30 pp.543–555.

Di Biase, W.J. (1998) 'Mezirow's theory of transformative learning with implications for science teacher educators' http://www.ed.psu.edu/CI/Journals/1998AETS/s2_1_dibiase.rtf (Accessed 5 November, 2008).

Gee, J. (1996) *Social linguistics and literacies: ideology in discourses* (2nd ed.) London: Falmer Press.

Gibbs, G. (1998) 'Learning by Doing - A Guide to Teaching and Learning Methods' http://www2.glos.ac.uk/gdn/gibbs/ch4_3.htm (Accessed 11 July 2008).

Hinett, K. (2002) 'Improving learning through reflection – part one' http://www.heacademy.ac.uk/assets/York/documents/resources/resourcedatabase/id485_improving_learning_part_one.pdf (Accessed 5 November, 2008).

Leshem, S. and Trafford, V. (2006) 'Stories as mirrors: reflective practice in teaching and learning' *Reflective Practice 7*(1) pp.9–27 February.

Moon, J.A. (2004) *Reflection in learning and professional development.* New York: Routledge, Falmer.

Moon, J.A. (2006) *Learning journals: A handbook for reflective practice and professional development* (2nd ed.) London: Routledge.

Ruddock, J., Wallace, G. and Day, J. (2000) 'Students' voices: what can they tell us as "partners in change"?' In K. Stott and V.N. Trafford (Eds.) *Partnerships: shaping the future.* London: Middlesex University Press.

Schön, D. (1983) *The Reflective Practitioner: How professionals think in action.* London: Temple Smith.

Street, B. (1995) *Social literacies: critical approaches to literacy in development, ethnography and education.* London: Longman.

Street, B. (1996) 'Preface' to M. Prinsloo and M. Breier (Eds.) *The Social uses of literacy.* Amsterdam: Sached.

Watton, P., Collings, J. and Moon, J. (2001) 'Reflective Writing – Guidance notes for students'
http://www.ex.ac.uk/employability/students/reflective.rtf (Accessed 8 July, 2008).

Watson, S. (2001) 'Reflection Toolkit'
http://www.nationalserviceresources.org/files/legacy/filemanager/download/615/nwtoolt.pdf (Accessed 11 July, 2008).

Undertaking reviews in higher education institutions

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ABSTRACT

The notion of review is not new to academia. Indeed, some may argue that critical reflection is a foundation stone of any intellectual endeavour. However, the introduction and rapid global spread of formal, regulated review systems as part of the quality assurance wave sweeping higher education has not been enthusiastically embraced by academics in general. This article discusses the role and use of reviews in a higher education context and, after considering the relationship between reviews and quality assurance systems, identifies essential elements of review frameworks and suggests practices and strategies which may enhance the value and impact of reviews in higher education institutions.

INTRODUCTION

Nothing improves your driving, the saying goes, like the police car driving behind you. In the academic world, however, most forms of accountability are seen as irritating bureaucratic interference at best and sinister attacks on academic freedom at worst. Plato's conviction that 'Good people do not need laws to tell them to act responsibly, while bad people will find a way around the laws' is often seen as a strong argument in favour of rejecting any form of external oversight or explicit rules. But most people fall somewhere within the spectrum of good and bad, and for those people, laws supposedly serve as good deterrents.

South Africa's Higher Education Quality Committee (HEQC) has introduced formal quality assurance requirements for all providers of higher education, resulting in compliance being a legislative requirement rather than an institutional choice. Nevertheless, there are educational and moral imperatives for ensuring quality provision, which should ideally be the primary motivating factors for adopting rigorous quality assurance and development processes. A major benefit of formalising quality assurance processes is that the establishment and sharing of often implicit or assumed rules and knowledge provides guidance and reference points for those seeking access to previously obscure ways of doing and knowing.

A critical aspect of quality assurance processes (explicating outcomes, developing strategies to achieve and monitor them, and expecting accountability from role-players) is to provide opportunities to review the appropriateness of the outcomes and reflect on their effectiveness. So, if the principles of reflection and review are accepted, the question moves away from whether or not to conduct reviews, towards finding the most appropriate and effective way/s of undertaking reviews. This article assumes the question is 'how best to review?' and focuses on conducting reviews in a higher education context.

QUALITY ASSURANCE AND THE CONCEPT OF REVIEW

The widespread, instinctive resistance from many in the higher education sector to the notion of 'quality assurance' could be related to the business-speak semantics and technocratic jargon associated with formal quality assurance in general. It is perhaps unfortunate that the word 'policy' is so closely related to the word 'police', and that quality assurance so often revolves around threatening concepts such as 'minimum standards', 'critical outcomes', 'performance indicators', and 'external audit'. However, such phrases are merely new ways of describing existing academic practices and age-old behaviours. As noted in an article entitled 'Saving Quality from Quality Assurance' (Stephenson, 2004), quality and quality assurance have been integral parts of the academic tradition since universities were first established. The evidence includes long-established collegial exchange of best practices, external examining, peer review and international mobility of scholars and scholarship.

The poor image quality assurance has developed amongst academics is perhaps related to the growing tendency of administrators and policy makers to equate quality assurance with quality control, and to use the power inherent in quality assurance systems to 'meet targets, effect change, achieve zero defect and demonstrate value for money' (Stephenson, 2004: 64). But as many practitioners have found to their dismay, the quickest way to convert committed academics into anti-quality assurance activists is to start with a managerial, or 'total quality management' approach. This immediately threatens the control academics have – and indeed should retain – over the complex and intricate processes of teaching and research, and deepens their suspicion that universities are being infiltrated by technocrats (see, for instance, de Vries, 1997; Williams, 1997; Salter and Tapper, 1994). For these reasons, it is imperative that an institution thoughtfully and rigorously debates its own interpretation of quality and quality assurance – thereafter the identification, development and assurance thereof should be a relatively straightforward and ultimately rewarding exercise.

Reviews provide a structured opportunity to reflect on whatever the unit of review (for example, a programme, a department, a whole institution or even an entire system) is aiming to achieve, and how successful it has been in meeting its goals. Ideally, a review would also provide a platform for recognising existing strengths, for motivating for additional resources, and for planning for improvement. Typical review focus areas would include:

- What do we do?
- Why do we do it?
- How does what we do fit into the bigger picture?
- How well do we do it?
- How do we know how well we are doing it?
- What do we need to change or add in order to improve?

REVIEW FRAMEWORKS

In order to develop a shared notion of a particular quality assurance process, in this case a review, and to ensure legitimacy, genuine commitment and meaningful improvement, it is advisable to develop first an appropriate institutional framework. This could be initiated by facilitating an institution-wide discussion around critical elements such as:

- How do we define quality at our institution?
- What quality assurance system do we (or should we) have?

- Who is responsible for quality and quality assurance?
- What are our review principles? (To whom are we accountable, what standards do we aim to uphold, to what extent do we tolerate divergence, how do we interpret fairness and transparency, etc?)
- What should be the basic unit of review? (e.g. programme/department/institution)
- What should be the scope of the review system - to what level will reviews extend? (the Vice-Chancellor and executive managers?)
- Who should be involved/consulted?
- How will the terms of reference be determined and communicated?
- What review model should we follow? (e.g. self-assessment or external audit, improvement- or accountability-oriented, top-down or bottom-up, *ad hoc* or regular or a hybrid model of some sort?)
- How will review panels be constituted? (internal peers or external experts, one consistent panel or tailor-made for each particular review, or a hybrid model?)
- How will confidential and sensitive information be handled?
- What process will be followed in approving and communicating review recommendations?
- What kinds of support will be provided to effect improvements and implement recommendations?
- How will any financial or resource implications be linked to institutional budgetary and planning processes?
- Who is responsible for implementing recommendations?
- How will implementation be monitored?
- What is the lifespan of the review framework?
- What unanticipated consequences or potential benefits might result?

Once agreement has been reached on a broad review framework and process, formal approval at the highest level – Senate and Council – should be obtained as this will become a crucial reference point when (not if: as experience shows contention is inevitable) the legitimacy of the process is questioned once implementation begins.

Each of the points above will be discussed in more detail below.

Contextualising Quality

A seminar held in the UK in 2001 entitled 'The End of Quality?' examined the effects of formal quality assurance mechanisms in several countries where national quality assurance systems had been established and had begun to mature. The general conclusion was that 'a great deal of money was being spent to show that money was not being wasted in the lecture room' (Newton, 2002). Sir John Daniel, in his address to the International Management in Higher Education (IMHE) conference in Paris in 2002, aptly remarked: 'Universities are full of intelligent people who quickly understand any new system then play it to their advantage'. A similar sentiment was expressed by Geoffrey Alderman (quoted in Baty, 2001) who claimed 'the dons have outsmarted the government by turning the exercise into a game and playing it brilliantly.' The challenge for academics and administrators alike therefore, is to avoid quality assurance being seen as a game to be played or a series of boxes to be ticked. This means all involved should have a shared understanding of the aims of any quality assurance processes, and a commitment to ensuring continuous improvement and progress rather than one-dimensional compliance.

The number of external quality assurance agencies across the world has increased sharply over the past 20 years and while regional and cultural differences are evident, broad international consensus on the main components of quality assurance methodology has developed (IMHE, December 2009). The generally

accepted – or rather, the least contested – approach to quality assurance is usually based on quality as fitness for purpose, where a unit is assessed against its own (and/or institutional and national) missions and goals. The unit of review would undertake a self-evaluation guided by pre-determined criteria, and produce a report which would be verified or challenged by a group of internal or external peers and/or stakeholders. A site visit would normally form part of the process as would a written review report containing recommendations for addressing shortcomings and ideally, recognising evidence of good practice. The more mature systems would require the unit of review to respond to the report by indicating what steps would be taken to improve, and how implementation of recommendations would be monitored.

Terms of Reference

Developing rigorous, credible terms of reference is arguably the most important part of any review and could be equated to a road map, or blueprint. As the process unfolds, those involved will find themselves returning time and again to check reference points and ensure the exercise is not diverted or derailed. All stakeholders should participate in developing the terms of reference, including those being reviewed, those doing the reviewing, and those affected by the review outcomes. In a higher education context this would involve a range of role-players including senior executives, students, academic and administrative staff, the wider university community and often external stakeholders, such as funders or professional bodies.

The essential elements of any terms of reference should flow directly from the review framework and should address:

- The aims and objects of the review
- Who will undertake the review
- What timeframes will be followed
- What should be addressed in the unit's self-evaluation report
- Who will have access to the self-evaluation report
- What kinds of data are required (qualitative or quantitative, self-sourced or centrally provided, external benchmarks, unit-specific information, user surveys, impact studies, etc)
- Who will produce the review report
- How the review report should be structured and what will be done with the final report
- How the report's recommendations will be approved and communicated
- How implementation will be monitored.

Self-Evaluation Reports

Ideally, self-evaluation reports should in themselves be catalysts for improvement. If the criteria are robust enough, if the self-evaluation is undertaken with sincerity and commitment, and if the resulting self-assessment is analytical and reflective rather than merely descriptive, by the time the review actually takes place, self-initiated improvement interventions should already be well underway.

Review units should encourage as many people as possible to participate in the self-evaluation and remember that writing a self-assessment report is not a marketing opportunity or an exercise in wishful thinking. Review panels would do well to recognise that extensive effort would have gone into the production of a self-evaluation report, that it may reflect multiple voices and contestations, that it is time-specific and capacity dependent, and that review units often under-represent their own strengths. Self-evaluation reports which anticipate potential recommendations and indicate strategies for addressing them contribute greatly to effective change management.

Review Panels

The role of a review panel is normally to, on behalf of the wider organisation, reflect on and evaluate what the unit of review *does* rather than how it represents itself. Areas of focus would include:

- Strategic purpose in relation to the institution's vision and goals
- Progress made towards meeting its goals
- Resources required to maintain or enhance its effectiveness
- Recommendations and commendations.

There are as many ways to constitute a review panel, as there are potential panel members. Much depends on the quality assurance system in place and the institutional approach to quality assurance in general and reviews in particular. A 'big bang' approach, where a group of programmes or departments are reviewed simultaneously or within a specific timeframe, would normally require one standing review panel. On the other hand, there are significant benefits to having a 'rolling review' system which shares the load (and deepens institutional learning) by appointing new review panels each time. However, there needs to be at least a common core of panelists to ensure fairness and consistency. Great care should be taken in the choice of Chairperson – he or she sets the tone for the review and the success of the exercise is heavily dependent on the diplomatic, pragmatic and interpretive skills of the Chairperson.

Review panels should be as widely representative as possible, and the opportunity to explore constructively the often prickly relationships between different constituencies (academics and administrators, staff and students, Sciences and Humanities, etc) should be embraced but also carefully managed.

A strange affliction can overcome newly appointed panel members: they often become superior beings, expecting perfection and standards of the reviewees which they would probably not match were they on the other side of the table. Even in role-playing review panel training sessions, the temptation for a reviewer to abuse their power often proves irresistible. Panel members should be realistic and circumspect, and while recognising that meaning is only generated through one's own experiences, prior knowledge and pre-formed judgments should be set aside as far as possible. Reviewees, later becoming reviewers themselves, ensure the 'inspectorate' tendency is avoided and a deeper sense of reality and empathy emerges within review panels.

Ideally, review panel training should be provided by the institution but this is a luxury few can afford so at a minimum, review panels should be well-versed in the institution's review framework and have a broad understanding of the organisation's overall mission and goals, as well as an ability to rise above personal or disciplinary interests and put on an 'institutional hat' so that they may focus on the bigger picture while serving on a review panel. Diversity amongst panel members is also desirable, both demographic and in terms of a range of backgrounds and viewpoints. Controversial views should be encouraged as that will enrich the outcome, ensuring that all points of view have been considered, and enhancing the chances of buy-in from the wider university community.

EXTERNAL INPUT

Some institutions utilise a review system based on panels comprised only of 'external experts'. The benefits are many, such as greater objectivity and credibility, an opportunity to benchmark against other experiences, and the most attractive of all, reduced workloads for internal role-players. There are significant disadvantages to using external panels however, such as the high costs involved (transport, accommodation, honoraria); the potential that contextual issues are misunderstood; and the missed opportunities to spread understanding of institutional aims and practices as well as develop internal

capacity for strategic thinking and planning. Hybrid models, where one or more external peers are included on internal review panels, or where documentation is sent to an external reviewer for written input, seem to be the most effective and efficient.

REVIEW DATA

The South African external quality assurance system's methodology, in line with international trends, is based on each institution or programme undertaking a self-evaluation and producing an audit portfolio, followed by external validation (HEQC, 2007). The portfolio comprises a self-evaluation report as well as supporting documentation and evidence '…in which the effectiveness and efficiency of the institution's quality arrangements of its core academic activities are assessed against the HEQC's audit criteria and any other relevant indicators or criteria that the institution has set for itself' (*ibid*: 5).

The system is therefore evidence-based, which means that institutions have to substantiate claims made in their self-evaluation reports. The gathering of appropriate evidence can be challenging, contentious and confusing. Many view evidence as primarily quantitative and technocratic, but in the higher education context this can be counter-productive. While statistical data is important, evidence is essentially a construct and the way it is presented reflects the nature of the institution or review unit. Rather than producing extensive raw data and presenting it at face value, review units should rather consider developing a 'basket' of relevant, contextualised performance indicators, which includes qualitative evidence such as user surveys, impact studies, interviews and systemic reports, taking into account that the nature of the evidence required depends on whether one is looking at input, process or output issues.

Ideally, quantitative data should be centralised and discussions held about assumptions underlying the production and utilisation of institutional 'facts'. It is also crucial to recognise the relative nature of measures used, as comparative analysis is usually more valuable than isolated, decontextualised data. Many institutions now produce annually revised data digests, and these can be greatly enhanced by adding a brief narrative to explain historical contexts, trends and assumptions. Review processes should build in an opportunity for review units to challenge data provided and refine performance indicators to ensure their relevance and reliability. Review processes should also aim to identify silences – where evidence is missing or obscured. However, information overload is a constant danger, and care should be taken to ensure data used is timely, meaningful and valid.

REVIEW REPORTS

A competent report writer should be identified as early as possible in the review process: even if individual panel members provide written input, one person will be required to craft the various contributions into a coherent whole and ensure consistency in style both within and between review reports. Diplomacy, probity, clarity and sensitivity in writing review reports are essential, to protect the integrity of the system and its participants, and particularly as the reports will form part of the institution's historical records and may be referred to many years hence.

Transparency should be more than a good intention as it is often the controversial aspects which galvanise participants towards action and improvement. Providing a review report template at the beginning of the exercise assists both the unit of review and the panel members in retaining focus and ensuring all aims of the review are addressed. Review reports should be contextually sensitive, logically argued, affirming, accessible and not overly prescriptive. Commendations and recommendations should be clear, focused and supported by appropriate evidence.

Careful consideration should be given to the audience for whom the report is written as well as the purpose for which it is intended: improvement-oriented reports will have a different tone and focus to those which

aim for accountability or assuring minimum standards. Righteous zeal, finding culprits and assigning blame should be avoided at all costs. The purpose of the report should be to add value to the review unit's own deliberations, and assist the institution in moving towards its goals holistically and collegially.

IMPLEMENTATION OF RECOMMENDATIONS

Anecdotal evidence abounds of well-intentioned review exercises ending up as bookshelf-fodder. If responsibility for implementing and monitoring recommendations is not clearly indicated, the chances are that copious amounts of text outlining grand plans of a utopian future will be the only outcome of a great deal of effort and soul-searching. A clear timeframe and an explicit plan for identifying key drivers and ensuring regular reporting of progress made in implementing recommendations (or explaining why they could not – or should not - be implemented) should form part of the review unit's response to the review report.

CLOSING THE LOOP/REVIEW CYCLES

Planning and review exercises are ultimately evolutionary, and should not be viewed as end-points in themselves. Clear guidelines, extensive communication and regular feedback to all constituents are hallmarks of successful review systems.

UNANTICIPATED CONSEQUENCES

Those involved in facilitating reviews often talk of the 'psychology of review' and believe careful consideration should be given to managing the social and political dynamics, which are an integral part of formal review systems. For instance, the scope of a review system is likely to impact on its institutional reception. Ideally, the entire institution should be included – particularly executive management. Apart from enabling a holistic approach and building unity towards common goals, there is a greater likelihood of buy-in when even those at the highest levels are expected to reflect on their contributions and account for their performance.

Similarly, the manner in which a review is undertaken is critical to its success: self-evaluation and peer review are generally more acceptable than a top-down investigation. External review groups may be seen as a threat by those being reviewed and will often be met with resistance, defensiveness and window-dressing.

Another area which is often overlooked when planning reviews is the 'cost' of such quality assurance activities. While the financial cost is notoriously difficult to quantify, hidden costs such as academic time spent preparing evidence, writing reports and being interviewed should be acknowledged and where feasible, a budget allocated.

One of higher education's greatest strengths is its non-homogeneity. Therefore a certain amount of 'messiness' in undertaking reviews is to be expected, and indeed is desirable in order to protect innovation, diversity, creativity and knowledge production. Solutions proposed by those most affected are likely to be far more enthusiastically accepted than those imposed from above. Participants should be encouraged to think creatively and be rewarded, or at least recognised, for achieving set goals.

Lastly, review co-ordinators should take great care to maintain morale, confront rumours, unpack internal political issues, and ensure appropriate levels of confidentiality are observed. The nature of review tends to result in more attention being paid to areas in need of improvement than to acknowledging things which are going well. This should be pointed out to those being reviewed, and review reports should include commendations wherever possible.

CONCLUSION

External scrutiny is rarely an enjoyable or reassuring process. Comfort zones are disturbed, difficult questions may be unanswerable, turf needs to be protected, job security may be at risk, and admitting to weaknesses may be held against participants. In addition, internal credibility and external reputations are on the line, and the stakes are thus very high. However, the benefits surely outweigh potential disadvantages. An often unanticipated, but salutary outcome of conducting reviews, is the deep institutional learning which takes place as a consequence, particularly the empathy and broader awareness of what other areas of the institution are doing, and how it all fits together in a strategic, cogent and unified way.

REFERENCES

Baty, P. (2001) 'Worthy Project or Just a Game?' *The Times Higher Education Supplement*. London, 30 March.

Council on Higher Education (CHE). (2007) *Institutional Audits Manual*. Pretoria: CHE.

Daniel, J. (Sir) (2002) 'Address' *International Management in Higher Education (IMHE) Conference* Paris.

DeVries, P. (1997) 'Academic Standards and the Quality Management Debate' In J. Radford, K. Raaheim, P. DeVries, and R. Williams (Eds.) *Quantity and Quality in Higher Education*. London: Jessica Kingsley.

IMHE Newsletter. (2009) 'Globalisation and Higher Education: What Might the Future Bring?' Paris: OECD.

Newton, J. (2002). 'Views from Below: Academics Coping with Quality' *Quality in Higher Education* 8(1) http://www.qualityresearchinternational.com/eoq/jethro.pdf (Accessed 30 May 2010).

Salter, B and Tapper, T. (1994) *The State and Higher Education*. London: Woburn Press.

Stephenson, S.L. (2004) 'Saving Quality from Quality Assurance' *Perspectives: Policy and Practice in Higher Education* 8(3) UK: Taylor and Francis

Williams, R. (1997) 'Factors Impacting on Academic Standards' In J. Radford, K. Raaheim, P. DeVries and R. Williams (Eds.) *Quantity and Quality in Higher Education*. London: Jessica Kingsley.

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.

IIE Academic
Colours and Regalia

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 were worn for the first time at graduation ceremonies that 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 wear 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 wear The 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 backdrop, 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.