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PRAXIS towards
sustainable EMPOWERING learning
ENVIRONMENTS in SOUTH AFRICA

Dennis Francis
Sechaba Mahlomaholo
Milton Nkoane

sb

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Dennis Francis
Sechaba Mahlomaholo
Milton Nkoane

sb SUNBONANI SCHOLAR

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Overview

Praxis towards sustainable empowering learning environments in South Africa

This collection presents some of the best peer-reviewed papers from a conference with the theme "Creating sustainable empowering learning environments through scholarship of engagement". This conference was held from 20 to 21 August 2009 at the Potchefstroom Campus of the North-West University in South Africa. Over 110 papers were presented, out of which 20 were selected for this publication, based on a rigorous blind peer-review process. The main criterion for inclusion was that the paper should contribute to the theme by means of an original, tight, theoretical and empirical study conducted with the aim of informing the practice of creating sustainable empowering learning environments.

In the compilation of this book, another consideration was that all contributions should assist in the telling of the original story of how *sustainable empowering learning environments* are created by combining educational theory, educational research and educational practice, jointly referred to as educational praxis. In reading this book one discovers this golden thread running through all the papers as chapters in this seamless narrative which analyses and describes *Praxis towards sustainable empowering learning environments in South Africa*; hence the title. The book contributes to the ongoing debates and discussions in South Africa and the world regarding how best to create optimal conditions for excellence and quality in learning, irrespective of the learner's grade or academic level.

The book manages to make this contribution because it is a collection of new but strong voices on the educational scene in the country and the world spanning six local and two international universities, namely North-West University (NWU), University of the Free State (UFS), University of KwaZulu-Natal (UKZN), Central University of Technology (CUT), Walter Sisulu University (WSU), Rhodes University (RU) as well as Curtin University in Australia and University of Tennessee in the United States of America. Manchester University in the United Kingdom is represented in a chapter by a colleague working as a school principal in the Free State province of South Africa but continuing his research with the aforementioned institution. Botswana is also represented in a study conducted by a colleague from the CUT on practices towards creating sustainable empowering learning environments in that country.

The story told throughout this book starts with a chapter by Sechaba MG Mahlomaholo which provides a practical framework for conducting research in schools in the North-West province with the aim of involving the teachers, the school management teams, parents, learners, North-West University academics from the Faculty of Education Sciences and professionals from the North-West Education Department in reflective practice towards the creation of sustainable empowering learning environments. This chapter is appropriately entitled "*A framework for university and provincial education department's collaborative research towards the creation of sustainable*

empowering learning environments". The major contribution of this chapter is its reflection on the research problem confronting all chapters in this book, namely that of the dysfunctionality in some South African schools due to the problematic past of apartheid education. The chapter proceeds to describe the theoretical framework for the study in the North-West province which includes social constructivism, social justice research and scholarship of engagement. The strong point of the chapter is its methodology which demonstrates how the identified stakeholders get involved together in this praxis.

Chapter 1 thus reports on a study which ultimately also serves as the framework for the book. Chapters in this book tend to focus on praxis towards creating sustainable empowering learning environments conducted by and for the benefit of the partnerships of the stakeholders identified in Chapter 1. Other chapters also use some of the theoretical aspects described in this chapter. Briefly, chapters in this book report on praxis relating to:

- Teacher development as a continuing collaborative effort among the identified stakeholders.
- The role of the teacher as a reflective practitioner who conducts socially just action research, fosters self-regulation among his/her peers and charges, uses a range of effective social constructivist strategies from solo taxonomy, simulated games, interactive formative assessment, mother tongue as medium of instruction wherever possible, and is always sensitive towards the inclusion of and reaching out to all learners towards optimal learning in sustainable empowering learning environments.
- The value and power of building partnerships for praxis among the universities, the schools, the Departments of Basic Education and Higher Education and Training, social and rural development agencies as well as other instances of civil society.

Tšeliso Makoelle's Chapter 2 on "*Action research: a tool for stimulating reflection and innovation among teacher researchers*" discusses the development of practising teachers, as reflective practitioners in particular (see point 1 above). In a convincing argument, he describes the value of action research for the practising teacher as a tool for reflection that will enhance his practice towards the creation of sustainable empowering learning environments. He cites examples from the literature, his own research and practice as a PhD student and principal of a school to validate his point.

Linked to this intensely theoretical chapter, Aubrey Golightly from North-West University and RG Brokett from the University of Tennessee, in Chapter 3 entitled *Teacher trainees' perceptions of their own self-directedness in learning,* focus on the training of aspirant teachers and the value of self-directed learning for them as life-long learners. This chapter emphasises the need for teacher training programmes to foster this quality and characteristic, as pre-service training teachers will definitely need it in order to continuously develop their practice towards the creation of sustainable empowering learning environments.

In Chapter 4 entitled "*Self-regulated learning: a case study in fashion design at a university of technology*" Francina Venter from Central University of Technology and JH van Schoor from the University of the Free State elaborate on the concept of self-regulated learning by demonstrating through empirical data the need of lecturers in Fashion Design to model the characteristics of independently setting one's goals, planning, seeking help from others, and deploying strategies to be successful academically and later in the fashion industry.

Thapelo Mamiala from North-West University and David Treagust from Curtin University in Australia, in Chapter 5 entitled "The development of schedules using solo taxonomy to assess the quality of mathematics and science learning in South African schools", demonstrate the power of teacher explanatory strategies in the teaching of the natural sciences by means of empirical data from South Africa and Australia. Their contribution is mainly about the uncontested role of the teacher in the creation of sustainable empowering learning environments.

Still on the subject of effective teacher strategies, Michael van Wyk from the University of the Free State, in Chapter 6 entitled "*Rethinking the value of simulated games in economics education: an experimental teaching strategy*", makes a passionate plea for the use of simulated games in the teaching of Economics Education for both aspirant student teachers and their future learners. He argues that this strategy is effective because it operationalises the principles of experiential learning and reflexivity towards the creation of sustainable empowering learning environments in Economics Education classrooms. He weaves together a convincing story by using empirical data from his personal experiences.

In Chapter 7 entitled "*Moving towards interactive formative assessment*" Jabulisile Ngwenya from the University of KwaZulu-Natal highlights the value of assessment feedback to learners in the creation of sustainable empowering learning environments. She argues that assessment is and should be regarded as a learning opportunity for the assessed learners. Information about the outcomes of the assessment tasks thus need to be communicated as soon as possible to the learners being assessed in order to enhance their learning further.

Chaka Chaka and Leeto Ramothea, both from Walter Sisulu University, in Chapter 8 entitled "*21st century learning and teaching: emerging approaches, new pedagogies and a scholarship of engagement*", reiterate the value of collaborative praxis (described earlier) which is located within a spectrum of theoretical positions ranging from social constructivism to scholarship of engagement. They argue that such an eclectic approach, which all stakeholders in education must adopt, enables them to manage the challenges they face in the current educational contexts as they embark on praxis towards the creation of sustainable empowering learning environments.

In Chapter 9 entitled "*Mother tongue teaching in practice: experiences with pre-service foundation phase teachers at UKZN*", Nontokozo Mashiya from the University of KwaZulu-Natal demonstrates on the basis of empirical data how fulfilling and satisfying it is for both learners and teachers when learning is conducted in one's mother tongue. She argues that mother-tongue teaching and learning facilitate learning material that seemed inaccessible.

From the above discussion of the teaching strategies and the emphasis on the role of teachers in the creation of sustainable empowering learning environments, the following chapters advocate inclusivity of all learners, irrespective of socio-economic status, race, creed and/or HIV/AIDS. The argument is that all learners deserve better education and enhanced sustainable empowering learning environments where they can explore their potential and create a better future for themselves and the country as a whole.

Ona Janse van Rensburg from North-West University, in Chapter 10 entitled "*Bringing marginalised children to the centre of learning through a grade R initiative*", presents empirical findings from her study aimed at establishing a Grade R class for children of farmworkers in the North-West province. This is an instance of scholarship of engagement where university academics who teach courses in Foundation Phase to aspirant teachers go out into the community to put in practice their knowledge and skills towards the inclusion of marginalised learners in the creation of sustainable empowering learning environments for all.

Chapter 11 by Masilonyane Motseke from Central University of Technology, entitled *"Why is OBE failing in the township schools of the Free State Goldfields?"*, aims to facilitate inclusion of all learners, in particular those from poor socio-economic backgrounds and previously disadvantaged communities in the mainstream of social constructivist learning. He presents data that show what still needs to be done in order to enable the proper implementation of Outcomes-Based Education in black, poor and disadvantaged schools.

Sibusiso Radebe from the KwaZulu-Natal Department of Education in collaboration with Milton Nkoane from the University of the Free State, in Chapter 12 entitled "*Psychological assessment and evaluation of learners by child guidance clinics*", using critical theory as a paradigm in social justice research, argue for a shift in assessing learners psychologically. They claim that current practices of assessing learners with special educational needs are still informed by the discredited ideologies of apartheid. They also claim that there is thus a need to formulate practices reflecting the current socially just and democratic ethos of enhancing and facilitating inclusivity, not separation.

In Chapter 13 Christa Beyers and Dennis Francis in a study entitled *"Sexuality education: are educators in transition, or just imitating expectations?"* demonstrate how overburdened teachers seem to feel especially when it comes to dealing with problems of HIV/AIDS-affected and -infected learners. They argue that some of these teachers are not even able to deal appropriately with the problems of stigmatisation at the personal level. They lose the enthusiasm to care for and support such learners to the extent that they are absent from school and ultimately lose their morale when expected to provide this much needed support for inclusion. In order to create non-discriminatory, sustainable empowering learning environments for all, they propose that teachers be skilled and thus empowered to deal with all such eventualities, as they have to play their role as social agents for change appropriately.

From the University of KwaZulu-Natal, Fumane Khanare's Chapter 14 entitled *"School management, learners at risk and HIV and AIDS in South Africa"* responds adequately to

many of the challenges that teachers and schools face, as identified by Christa Beyers and Dennis Francis. They found that schools through their school management teams need to set up multidimensional and collaborative programmes that will spread the burden of caring for HIV/AIDS-affected and -infected learners accordingly so that individual teachers are not overburdened. According to the study reported in this chapter, the creation of sustainable empowering learning environments must include all learners and enable them to explore their fullest potential.

In Chapter 15 Merridy S Wilson-Strydom and Driekie Hay from the University of the Free State, in a study entitled *"Reducing the gap between being eligible and being ready for higher education: a learner engagement perspective"*, advocate for closer collaboration and partnership between the schools and the university in attending to problems of underprepared learners entering university. The chapter points out that the university could help schools with the teaching of learners before they complete their Grade 12 in order to better prepare them for their successful university studies, resulting in greater inclusivity and accessibility in the creation of sustainable empowering learning environments.

Xany du Toit from the University of the Free State, in Chapter 16 entitled *"Interpreting: the argument for multicultural learning environments at the University of the Free State"*, argues for inclusivity based on ensuring that Afrikaans- and English-speaking learners are able to benefit from the same lecturer by the provision of simultaneous translation services from one language to the other in what she calls linguistically integrated classrooms. She presents data from her study conducted at the University of the Free State which she argues could serve as a model for other higher education institutions faced with similar multicultural linguistic challenges.

The remaining chapters of the book focus on the practice and value of engaged, reciprocal, mutually respecting and validating partnerships between the university and the community towards the creation of sustainable empowering learning environments. The focus on this collaboration becomes the climax of the contribution which this volume makes to knowledge and facilitation of learning both in the university and the community. Through engaged research and service to the community, the university learns from the community in as much as the community benefits from the university. This combines educational theory, practice and research, which is praxis.

In Chapter 17 entitled *"CSL as a scholarship of engagement: findings and recommendations"* Arno van Niekerk from the University of the Free State presents a convincing argument that community service learning is a credible and valuable mechanism that can be used to facilitate holistic development of learners, especially at a tertiary institution. Backed with empirical evidence, he demonstrates how critical cross-field outcomes undergirding all education in South Africa, geared towards the cultivation of a democratic citizenry, constitute the essence of community service learning as an approach to the creation of sustainable empowering learning environments.

From the University of the Free State (UFS) Gregory Alexander, Michael van Wyk, CD Jaftha and Milton Nkoane confirm Arno van Wyk's findings regarding the value of community service learning. However, they also emphasise the importance

of building well-functioning partnerships geared towards the same objective of creating sustainable empowering learning environments for all learners, especially in deprived contexts. In Chapter 18 entitled "*The University of the Free State community service intervention on grade 12 science, mathematics and accounting: scholarship for teaching and learning*" the authors present empirical evidence gleaned from UFS' close collaboration with the schools from the local community, rural development partners and the *Volksblad*. This becomes a shining model to be emulated by all universities intending to reach maturity by remaining significant instances of civil society, contributing to its experiences, as well as sharing in its fears and aspirations in a respectful and meaningful manner.

Roelf Van Niekerk of the University of the Free State and Joe-Anne Vorster from Rhodes University, in Chapter 19 entitled "*Economic responsiveness in Organisational Psychology curricula*", conclude the discussion on university-community engagement by focusing on the practical need to align academic programmes with labour market requirements by:

- developing a sound understanding of constantly changing labour market trends;
- acquiring accurate and comprehensive information;
- establishing and maintaining close links with business and industry;
- agreeing on graduate profiles that portray the competencies demanded by the labour market, and
- facilitating academic creativity to develop new programmes using modern teaching and learning technologies.

Community engagement and community service learning should serve, for example, the practical economic needs of both the university and the community in a mutually beneficial manner within the context of equal power relations.

Chapters 1 to 19 focused on the question of creating sustainable empowering learning environments through engaged partnerships, inclusivity of all and effective strategies for teaching and learning in South Africa. In Chapter 20 entitled "*The nature of learning styles of students and their implications for learning in Botswana*", Almon Shumba from the Central University of Technology presents some learning experiences in Botswana. The most important finding reported in this chapter is that, in South Africa and globally, learners tend to model their learning after how they are or were taught. This implies that in the creation of sustainable empowering learning environments participants need to be responsible for their own learning, be creative, have initiative and collaborate with others in a meaningful manner.

In order to achieve quality in education all instances of civil society need to collaborate towards a common goal. This book makes this point based on rigorous educational reflection, empirical research and informed practices.

<center>CHAPTER 1</center>

A framework for university and provincial education department's collaborative research towards the creation of sustainable empowering learning environments

Sechaba MG Mahlomaholo
North-West University, Potchefstroom Campus
sechaba.mahlomaholo@nwu.ac.za

1. INTRODUCTION

The framework for research as praxis described in this chapter attempts to analyse, understand and on the basis thereof discover and describe significant processes underpinning the creation of learning environments that empower stakeholders in education in a sustainable manner. These stakeholders include learners, teachers, School Management Teams (SMTs), professionals from the North-West Education Department (NWED), and academics from the North-West University (NWU). In order to achieve the above in a systematic manner, the framework focuses on the following seven educational priorities of the Dr Kenneth Kaunda Education District, hence the North-West Education Department and the National Department of Basic Education:

- Foundations for Learning Project (FFL);
- Quality Improvement, Development, Support and Upliftment Programme (QIDS UP);
- the Learner Attainment Implementation Plan (LAIP);
- effective implementation of the National Protocol on Assessment for Schools in the General and Further Education and Training Band (NPAS);
- Quality Learning and Teaching Project;
- Integrated Quality Management System (IQMS), and
- Continuing Professional Teacher Development (CPTD).

Besides the above national priorities, the study is couched within the following four Millennium Development Goals (MDGs_ (UNDP, 2005: 2-3) as priorities at the international level, namely to:

- **Goal 1**: Eradicate extreme poverty and hunger.
- **Goal 2**: Achieve universal primary education.
- **Goal 3**: Promote gender equality and empower women.
- **Goal 4**: Develop a global partnership for development.

This research project as praxis, hereafter referred to as SELEN, is firmly located within all the above MDGs as it intends to create sustainable empowering learning

environments that will create a new person who will be a productive citizen of the country and the world, who is self-regulated and capable of independent thought, is creative, respects him-/herself and others, and is committed to improving his/her life and that of his/her fellow human being. Such a new person will be able to address issues of poverty, will seek empowering education with primary education as a mere starting-point, will be sensitive to issues of discrimination be they gender, race, cultural, language, creed or socio-economic issues. Such a new person will also be health conscious, protective and respectful of his/her environment and collaborate with all for sustainable growth and development.

2. THE PROBLEM

The South African nation has not successfully emerged from the ravages and legacies of a dehumanising and dysfunctional apartheid education (DoE – Ministerial Committee on NEEDU April 17, 2009). This is currently evidenced by the continued poor performance of learners, teachers, schools and the entire education system. The matric (National Senior Certificate or Grade 12) examination results which continue to decline as the barometer of this progress and development (or lack thereof) away from this abhorrent system of apartheid education also attest to this fact (*Mail & Guardian* online January 07, 2009: 1). The average national matric pass rate was 65.2% in 2007, 62.6% in 2008 and 60.7% in 2009 (*Buanews* December 30, 2008: 1; DoE-EFA, 2008: 10-14; *Mail & Guardian* January 07, 2009: 1). This ongoing sad state of affairs regarding South Africa's education system and performance of our learners is further confirmed in international research involving our learners. For example, the Trends in International Mathematics and Science Study (TIMMS) (Van den Berg, 2009: 1-21) and the Progress in International Reading Literacy Study (PIRLS) (Baer, Baldi, Ayotte, Green, McGrath, 2007) are the point in question where our learners are outperformed by learners from countries with even smaller economies than our own.

The North-West Education Department (NWED), where this study was conducted, also reflects similar levels of dysfunctionality because of its apartheid education history as part of the South African nation as a whole, and in the words of this province's Learner Attainment Strategy (LAS) document (NWED-LAS February 02, 2009: 3):

> The number of matriculants endorsements increased from 14.6% to 15.9% and the number of schools performing below 60% went up by 14% from 132 to 146 […] and an increase in the number of learners with access to institutions of higher learning to 19.4%.

Although the document describes these percentages from the optimistic perspective of increase, hence achievement – it is, however, noticed that these matric throughput rates with admission to higher education, as is the case nationally, are alarmingly too low and not acceptable as they are symptomatic of an ailing educational system.

Against this backdrop, however, this study acknowledges and credits the efforts of the new democratic and developmental state of South Africa (including the NWED) which are aimed at ameliorating, reversing and uprooting this seemingly recalcitrant

educational dysfunctionality. To clarify this point, the following is noted in a related study (Mahlomaholo 2010: 3):

> … the whole arsenal of legislative and policy directives on education (for example the National Education Policy Act 27 of 1996; the South African Schools Act 84 of 1996; the General and Further Education and Training Quality Assurance Act 58 of 2001; South African Council of Educators Act 31 of 2000) and other aspects of the lives of the South Africans (for example the Skills Development Act of 1998, Accelerated and Shared Growth Initiative for South Africa and the Joint Initiative for Priority Skills Acquisition), since the advent of the new South African government in 1994, has been deployed towards addressing this problem.

Based on the above, it would seem that the solution(s) to the educational problems alluded to (as conceptualised and legislated by the South African state) could be found in the creation of sustainable empowering learning environments in all contexts where education, hence learning is supposed to take place. It is further noticed that, while the legislative imperatives referred to above are assumed to lay the foundation for this construction, the educational policy directives issuing from them – through their various, specific, focused and targeted programmes/projects – practically prescribe and describe measures that need to be set up at the national and provincial education departments, the education district, the school and the classroom levels. These measures tend to address problems of educational dysfuctionality hence learning and its improvement which are inherent and embedded in many of the factors, practices and relationships among role-players that constitute learning environments. It became apparent from the analysis of the educational legislative imperatives, policy directives and attended projects/programme documents conducted in designing this study that the following were significant among all these (i.e. factors, practices and relationships among role-players):

- the teachers/educator's role;
- the availability and effective use of resources;
- the extent to which learners' community cultural wealth was validated and capitalised on, and
- the extent to which discourses operational in the learning environments themselves were invitational, encouraging, equitable, socially just, free, peaceful and inspiring hope.

To concretise this point and to systematise the present argument, the study focuses first on the General Education and Training (GET) Band (especially Grades R–6) because it is now common knowledge that the seeds of any success or failure in all learning are usually planted at this level of education (DoE Foundations for Learning-FFL, 2008; DoE-GET Assurance Act 58 of 2001; Hindle, 2008; NWED Quality Improvement, Development, Support and Upliftment Programme – QIDS UP, 2008).

In its attempts to uproot the vestiges of the educational dysfunctionality referred to earlier, the national Department of Education (now called the Department of Basic Education) launched the Foundations for Learning (FFL) Campaign. In describing

the intentions of this campaign, the DoE (Hindle 2008: 1-2) indicated that it was aimed at ensuring that:

> Every classroom had the basic resources to enable teachers to teach effectively; every teacher in the Foundation Phase and Intermediate Phase sets aside reading time on additional reading for all learners; every teacher teaches numeracy for at least 1 hour every day …; every teacher does regular assessment to monitor and track learner progress, keeps individual learner performance records, and keeps feedback to learners and parents; every teacher takes initiative to ensure positive change amongst his or her learners.

A closer consideration of the Foundations for Learning Campaign also reveals that its fundamental aim is to facilitate quality numeracy and literacy teaching and learning by creating sustainable empowering learning environments in the grades R to 4 classrooms, at least. This focus is based on the research findings which show that learners in South African schools have "shown over the number of years that" they were not "able to read, write and count at expected levels, and are unable to execute tasks that demonstrate key skills associated with Literacy and Numeracy" (DoE-FFL 2008: 4). Briefly, this campaign wanted to give power of knowledge and skill in the subject/learning area/discipline and pedagogy to the teacher who had to work in the social constructivist mode of learner-centeredness as prescribed by official policy (see policy and legislative imperatives referred to above). Another emphasis was on the availability of teaching and learning resources and their proper usage in line with the principles of learner-centred pedagogy as well as creating, through positive discourses, conducive and *holding environments* for all learners to be free and actualise their potential. All the above were also to be linked to and as such capitalise on the learners' community cultural wealth, that is knowledge from their socio-economic backgrounds for learning to be successful in literacy and languages as well as in numeracy and mathematics.

The DoE also launched a related project named Quality Improvement, Development, Support and Upliftment Programme (QIDS UP). While having similar purposes as FFL, this project tends to focus more on redressing the inequality in the provisioning of educational resources which has bedevilled learning in predominantly black and rural schools. The NWED's QIDS UP Grade 3 Baseline Study Report (2008: 2) quotes former Minister of Education, Naledi Pandor as saying that "South Africa has not yet dealt a death blow to all the legacies of apartheid education" and as such:

> To address this legacy, the cabinet has approved the implementation of QIDS UP to give all South African schools an equal chance to provide quality education for all learners. The programme intends providing basic resources such as equipment, supplies, infrastructure and personnel support to the poorest schools in townships and rural areas. The benefits of the programme include the following; physical resources, teaching and learning resources and materials, human resources and strengthening school management and school governing bodies …

QIDS UP focuses on the availability and use of resources in the creation of sustainable empowering learning environments. However, these are also directed to the role of the teacher in the mainly black, rural, township and under-resourced schools and to the discourses thus operational in learning environments and to the extent to

which these environments constitute contexts of learning where there is positive support for all. In fact, the entire QIDS UP project is based on the recognition that each learner's cultural community wealth matters and as such needs to be validated and capitalised on for successful learning.

While the above two projects focused on the GET, the DoE also designed and implemented among others the Learner Attainment Improvement Project (LAIP), the Quality Learning and Teaching Project (QLTP), the Integrated Quality Management System (IQMS), the National Protocol on Assessment for Schools in the General and Further Education and Training Band (NPAS) and Continuing Professional Teacher Development Programme (CPTD) in an attempt to improve the quality of teaching and learning in all schools from the GET up to the end of the Further Education and Training Band (i.e. from Grades R to 12).

LAIP's (NWED-LAIP, 2009) eleven strategic goals constitute eleven focus areas:

> (i) to protect and ensure that teaching time is observed and used effectively in all schools by teachers, learners and all role players, (ii) that there is quality contact time during teaching and learning occasions, (iii) that there is effective implementation of National Protocol on Assessment for Schools in the General and Further Education and Training Band (NPAS), (iv) that common standards in internal assessment programmes are in place and adhered to, (v) that there is appropriate support from the Education Departments' professional officials, (vi) that there was monitoring and refining through research of teaching and learning practices so as to identify specific challenges, (vii) that value was added to the development of all learners, (viii) that there were thorough and effective measures in place to enhance proficiency among learners and teachers in the language of teaching and learning, (ix) that there were processes in place for the development of management and leadership skills, (x) availability of human and physical resources and (xi) the development of comprehensive teacher development programmes (NWED-Learner Attainment Strategy 2009: 5-6).

The recurrent theme is the creation of a sustainable empowering learning environment with a focus on the role of an effective teacher who utilises teaching time effectively and assesses the enhancement of learning. Such an enhanced learning is also conceptualised as the one predicated by availability and effective utilisation of resources, taking into consideration the learners' community cultural wealth and as such ensuring that the discourses operational in learning contexts are positive, collaborative, peaceful and inspire heightened levels of performance.

A similar theme is found in the National Protocol on Assessment for Schools in the General and Further Education and Training Band, that is for Grades R-12 (DoE-NPAS, 2005). This programme provides directives and clear guidelines for assessment as learning opportunity, geared towards making learning environments sustainable and empowering for learners and teachers in learner-centred contexts. Some of the critical concepts defined in the NPAS document demonstrate that assessment is conceptualised as an important ingredient impacting on the role of an effective teacher, informs discourses leading to successful learning in an invitational, free and validating learning context, and recognise the learners' background/community cultural wealth as basis. These concepts are: A similar theme is found in the National

Protocol on Assessment for Schools in the General and Further Education and Training Band, that is for Grades R-12 (DoE-NPAS, 2005). This programme provides directives and clear guidelines for assessment as learning opportunity, geared towards making learning environments sustainable and empowering for learners and teachers in learner-centred contexts. Some of the critical concepts defined in the NPAS document demonstrate that assessment is conceptualised as an important ingredient impacting on the role of an effective teacher, informs discourses leading to successful learning in an invitational, free and validating learning context, and recognise the learners' background/community cultural wealth as basis. These concepts are:

- Assessment Standard which describes the minimum level at which learners should demonstrate the achievement of a Learning Outcome and the ways or range (breadth and depth) of demonstrating the achievement. It is grade-specific;

- Assessment Task which is an assessment activity or activities that is/are designed to assess a range of skills and competencies;

- Continuous Assessment being described as an assessment model that encourages integration of assessment into the teaching and the development of learners through ongoing feedback. It is a model of assessment that is used to determine the learner's achievement during the course of a grade or level, provide information that is used to support a learner's development and enable improvements to be made in the learning and teaching process;

- External Assessment refers to any assessment activity, instrument or programme where the design, development and implementation has been initiated, directed and coordinated by provincial education departments and the Department of Education, either collectively or individually;

- Moderation which involves the process of verifying the results of National Protocol on Assessment for Schools in the General and Further Education and Training Band (NPAS) and the external assessment, and

- School-Based Assessment (formerly known as Continuous Assessment/CASS) which is made up of any assessment activity, instrument or programme where the design, development, administration, marking, recording and reporting has been initiated, directed, planned, organised, controlled and managed by a school.

All the above programmes and projects culminate in the Quality Learning and Teaching Campaign (DoE-QLTC, 2009) where all significant stakeholders pledge to execute their roles (and be held accountable), as envisioned in the educational legislative and policy directives of the new South African government aimed at undoing the educational dysfunctionality engendered by our historical past. QLTC emphasises the creation of a sustainable empowering learning environment by all stakeholders as a significant factor in solving South Africa's educational woes. At the launch of the QLTC the following important points were made, capturing succinctly the purposes of this campaign:

> Research suggests that three factors are critical to educational success across the world: Teachers, Textbooks and Time. The QLTC aims to build partnerships with all stakeholders, in particular, between the DoE and teacher unions. The department of education has committed itself to support

teachers, to hold its officials accountable, to ensure that the necessary resources are provided on time, and that vacancies are speedily filled. All teacher unions have committed their members to be on time, in class, prepared and teaching (DoE-QLTC, 2009: 3).

The recurrent theme still emphasises the role teachers play in the creation of sustainable empowering learning environments, the availability and effective use of resources towards that end, the significance of positive discourses, and the importance of considering the learners' community cultural wealth in such an endeavour.

All the above projects, campaigns and programmes are encapsulated in the Integrated Quality Management System (IQMS) and Continuing Professional Teacher Development (CPTD) programme. These two policy directives directly emphasise the role of the teacher (and support due to him/her) in the creation of sustainable empowering learning environments. They appear to be mere different sides of the same coin. IQMS sets the objectives and outcomes for the operationalisation of the CPTD and assesses the outcomes of this intended growth and development of the teacher as facilitated by the latter. While the emphasis is on the role of the teacher, adequate provisioning and proper use of resources are also integral parts thereof for enhancing positive discourses that validate the learners' community cultural wealth for improved performance.

The IQMS, as described in the Education Labour Relations Council's (ELRC) Collective Agreement Number 8 (2003), consists of twelve performance standards on the basis of which teachers at graded levels of responsibility, from level 1 teacher (standards 1-8) to senior, head of department, deputy principal and ultimately principal teacher (standards 9-12) are evaluated for *practically* playing their roles effectively in the creation of sustainable empowering learning environments. When one examines the 12 performance standards below, one notices the extent to which the role of the teacher is inextricably interwoven with the availability and use of resources towards enhanced learning. The performance standards also directly point to the need for a holding environment to be created in all learning situations by means of positive discourses that also validate and capitalise on the learners' community cultural wealth. These standards focus on the extent to which the teacher:

    i.   demonstrates competence in planning, preparing, presenting and managing learning programmes which enable the learners to actively participate and succeed in their process of learning;

    ii.   creates positive learning environment and mainstream effective discipline that supports the development of learner abilities;

    iii.   demonstrates competence in monitoring and assign learner progress and achievement;

    iv.   engages in professional development activities consistent with his own goals and objectives and that of the school;

    v.   engages in appropriate interpersonal relationships with learners, parents and staff an contributes to the development of the school;

    vi.   is prepared and knowledgeable of the content and demonstrates appropriate preparation for teaching;

vii.   provides an environment that creates and fosters commitment and confidence among colleagues, learners, the Governing Body and the community and communicates and interacts effectively with all stakeholders in order to ensure that all relevant information is both accessible and understood;

viii.   participates in extra-curricular and co-curricular activities in such a way that it supplements the learning process and leads to the holistic development of the learners;

ix.   administers resources and records in an effective and efficient manner in order to ensure the smooth functioning of the institution;

x.   manages and develops personnel under his/her supervision in such a way that the vision and mission of the institution are accomplished;

xi.   establishes procedures that ensures democratic decision making and accountability within the institution, and

xii.   displays competence in planning and education management development (ELRC Number 8, 2003: 6-9).

The CPTD ensures that the teacher continuously strives towards playing his/her role perfectly as far as its best practices are concerned. This incidentally involves performing well in all the above IQMS standards. In addition, CPTD promises to provide support to teachers as they develop the competencies elaborated in the IQMS by following well-structured, credible and duly accredited processes. There are six criteria elaborated jointly by the South African Council for Educators (SACE) and the DoE to guide the CPTD. These criteria determine the extent to which the professional development (PD) activity:

▪   leads to improved competence in professional practice in the field of education;

▪   improves the quality of teaching/learning and assessment in teaching subjects/ learning areas in the school curriculum;

▪   has opportunities for members to demonstrate what they have learned in this activity;

▪   long enough to have significant impact on the teachers' development;

▪   is aligned to the system needs as indicated by the DoE, the SACE, teacher unions and other organised professional bodies, and

▪   leads to the promotion of commitment to the improvement of schooling and responsibilities of the teaching profession in a transforming society.

The present study is thus consciously aware of the efforts by the democratic South African state towards reversing and totally uprooting the devastation of apartheid and its legacies on the entire fabric of South African life symptomised by an ailing educational practice, hence performance therein, among others. All these efforts have currently culminated in the creation of the National Education Evaluation and Development Unit (NEEDU) (DoE-NEEDU, 2009) whose primary responsibility will be to ensure that quality education is provided across all institutions of learning in the country through developmental monitoring and evaluation of the role of the teacher, the availability and utilisation of resources, and the facilitation of the existence of positive discourses that validate and capitalise on the learners' community cultural capital, among others.

3. THE THEORETICAL FRAMEWORK

Three theoretical positions seem to be most appropriate in responding to the research question of this study, namely social justice research, scholarship of engagement and social constructivism. It is a widely accepted truism among many researchers (for example, De Corte, 1996; De Corte, 2000; Vershaffel, Entwistle and van Merrienboër, 2003; Goh and Khine, 2002) that the nature of the research question, hence research objectives, determines the theoretical framework of the literature to be reviewed and the methodology to be operationalised towards useful, relevant and valid findings.

The above theoretical positions constituting the coherent framework for this study are informed by our aim to conduct a study that will be very sensitive to the historical past of inequity, social injustice, oppression, violence and desperation that engendered the dysfunctionality presently witnessed in education. Such a sensitive framework coupled with the express intention to deconstruct and destroy the legacy of apartheid is found in social justice research, in particular its critical emancipatory and critical race theories (Brayboy, 2002; Yosso, 2005; Apartheid Archives Project, 2009).

Social justice research is always on the side of the vulnerable communities and individuals. It wants to give back the *voice* and power to the vanquished and the marginalised. It is participatory. It treats all the researched with respect to their dignity as dynamic, subjective, interpreting and as such, full-fledged human beings. It consults and involves them at every step of the research journey, from conceptualisation at the interpretative phase, through reflection at the analytic phase to the dissemination and application of results at the educative phase (Lather, 1986). It thematises power. It is geared towards subverting the excesses of power (Mahlomaholo and Nkoane, 2002). It critiques ideology's hold (Ivey, 1986) over human being's meaning construction, hence actions and interactions. It posits that ideology's hold can never be complete, hence the possibility of transformation and change in meaning construction. It was found that such a socially just research is most appropriate to the praxis of this study: contributing to knowledge theoretically while practically supporting the national efforts to eradicate apartheid legacies as envisioned in the educational legislative and policy directives.

On the other hand, the choice of the Scholarship of Engagement as the other aspect of our theoretical framework is based on the following words of the President of the Republic of South Africa:

> Education must be elevated from being a departmental issue, or even a governmental issue, to a societal issue – one that occupies the attention and energy for all our people. A commitment should be made to a Code for Quality Education, which describes the responsibilities and discipline required of them – the non-negotiables. It must be seen as a revolutionary act to subscribe to act within this code (Zuma, 2008: 1).

This study is based on a wish that higher education, as in the North-West University (NWU), should be a full-time contributing member of civil society in the North-West province, nationally as well as beyond South Africa's borders. Higher education should not be an occasional visitor, riding on educational moral high horse to do research that finds fault with national and provincial efforts as they respond to the

dysfunctionality in education due to apartheid legacies. To date higher education has been omitted from shouldering the responsibility to account for the dysfunctionality so rife in our national education despite the fact that universities train teachers. If teachers who went through the portals of higher education to improve their qualifications still lack the requisite skills to implement the educational legislative imperatives and policy directives (UNESCO-EFA, 2009), then the higher education curriculum that prepares these teachers needs to be revisited to determine its relevance, value and usefulness, especially to the taxpayers.

Against this background the scholarship of engagement theoretical framework (Boyer, 1996; Mahlomaholo, 2010) offers the present study the platform to do collaborative research which is mutually beneficial to the NWED and the NWU as reflected in the membership, objectives and action plans of the Sustainable Empowering Learning Environments (SELEN) research team. This team conducts research based on the principles of discovery, integration, sharing and application as described in the mentioned theory (Boyer, 1996; Mahlomaholo, 2010). The reciprocal and practical outcomes are that NWU benefits, among others, in terms of curriculum improvement while NWED is supported in terms of the operationalisation of the educational legislative imperatives and policy directives towards the creation of sustainable empowering learning environments.

Finally, social constructivism as part of the theoretical framework of this study facilitates meaningful investigation and direct contribution to the creation of sustainable empowering learning environments as envisioned in the Constitution of the Republic of South Africa, hence the educational legislative imperatives and policy directives referred to above. All these documents attest to social constructivism as the educational theory of choice specifically for those projects, programmes and campaigns selected for investigation and operationalisation in this study, namely Foundations for Learning Campaign (FFL), Quality Improvement, Development, Support and Upliftment Programme (QIDS UP), the Learner Attainment Implementation Plan (LAIP), the National Protocol on Assessment for Schools in the General and Further Education and Training Band (NPAS), Quality Learning and Teaching Campaign (QLTC), the Integrated Quality Management System (IQMS) and the Continuing Professional Teacher Development (CPTD) programme.

Very succinctly the Critical Cross-field Outcomes directing all educational endeavours (the abovementioned policy directives, in particular) in South Africa confirm this view as they describe the qualities of a graduate of our education system as one who is able to:

> identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made; Work effectively with others as a member of a team, group, organisation, community; Organise and manage oneself and one's activities responsibly and effectively; Collect, analyse, organise and critically evaluate information; Communicate effectively using visual, mathematical and/or language skills in the modes of oral and/or written presentation; Use science and technology effectively and critically, showing responsibility towards the environment and health of others; Demonstrate an understanding of the world as a set of related systems by

> recognising that problem-solving contexts do not exist in isolation. (Bender, Daniels, Lazarus, Naudé and Satter, 2006: 40-45).

These are clear social constructivist principles enshrined in Outcomes-Based Education (OBE), Problem-Based Learning (PBL), Resources-Based Education (RBE), and Collaborative/Cooperative Education. They are the same principles according to which the SELEN study operationalises.

The integration of social justice research with scholarship of engagement theory as well as social constructivism into a seamless theoretical framework of the study is thus made possible and necessary by the fact that they all recognise the value of creating sustainable empowering learning environments for all in pursuance of a democratic citizenry for improving the life of all. This interdependence dictates that there has to be mutual respect, empowering reciprocity, validation and recognition among all as basic ingredients of a sustainable empowering learning environment. One word summarises the theoretical framework of this study; TRUST. Both the process and the outcomes of our investigation among all, including ourselves as researchers and our equal partners (teachers, professionals, officials, learners, parents, organisations, members of civil society, and so on) are therefore based on trust.

4. Sustainable empowering learning environment (SELEN)

The theoretical framework defined above has ultimately alerted one to the fact that the *sustainable empowering learning environment* (SELEN) under investigation is not an exclusively South African invention. From the literature it is evident that the American Educational Research Association (AERA), the British Educational Research Association (BERA) and others consisting of thousands of educators, educationists and educational researchers drive internationally researched and practised SELEN. For example, in Australia, the internationally renowned mathematics educationist Barry Fraser of Curtin University (2002) leads the research. In Europe, research is led by Eric De Corte of Leuven University in Belgium who due to advancing age is gradually passing on the baton to Jan Elen of the same university and a team of researchers from Maastricht in the Netherlands (Könings, Brand-Gruwel and Van Merriënboer, 2005).

Current international studies on enhanced learner performance (Fraser, 2002; De Corte, Verschaffel, Entwistle and Van Merriënboer, 2003; Könings, Brand-Gruwel and Van Merriënboer, 2005; Alridge, Fraser and Ntuli, 2009) confirm that learning facilitated through sustainable empowering learning environments is most effective, resulting in improved, productive (empowering) and life-long (sustainable) performance. From Aalborg in Denmark, Kolmos and De Graaff (2006: 31) mention that this kind of learning also diminishes dropout rates, stimulates motivation for learning, and supports development of new competencies. Learning taking place in these environments is learner-centred, is informed by and operationalises the theories of problem-based learning, resources-based learning, cooperative learning, collaborative learning, and outcomes-based learning.

This study recognises that a sustainable empowering learning environment has all the characteristics of these social constructivist learning theories. In addition, Bat-Sheva Eylon (2004: 1-3) describes sustainable empowering learning environments as the most effective in tackling the issues of "low achievement" by transferring "higher thinking skills" including "problem-solving", "integrating knowledge by helping students to develop judging and using information". Similarly, Norton (2008: 9-11) views sustainable empowering learning environments as being marked by "active learning", where students are allowed and made to be enquiring researchers, where the "learners' experiences are extended", where "intrinsic motivation" is encouraged, where "confidence is built", where a "sense of ownership and control" is cultivated among the learners, and where "collaboration among learners is encouraged". Norton (2008: 11) concludes, in agreement with Eric de Corte, that these are environments where "knowledge construction instead of knowledge transmission occurs", where "competencies instead of declarative information and social exchange instead of individual learning" are taking place.

When one examines all these scientific definitions based on actual practice, one tends to see similarities with, and thus appreciate, the greatest achievements of South Africa's educational legislative imperatives and policy directives as expounded and summarised in the Critical Cross-field Outcomes (see Bender *et al.*, 2006, quotation above). Another point worth mentioning and emphasising at this stage is that sustainable empowering learning environments thus defined do not negate the value and importance of traditional ways of learning which tend to place high value on memory and are teacher- and subject content-based. Proponents of sustainable empowering learning environments consider this mode of learning to be the first step in the process of observation and recall information (Bloom, 1956). At the next relatively more sophisticated step, comprehension and understanding of the abovementioned knowledge occurs. This, in turn, constitutes the basis for application and use of this information at the subsequent step(s) where patterns are observed through analysis culminating into even higher levels of synthesis of information and knowledge where the learner uses old ideas to create new ones. Finally, evaluation of information and knowledge takes place where comparison and discrimination between ideas occur (Bloom, 1956).

Sustainable empowering learning environments facilitate this progression in many different ways as described above. Analysing the new system of education, in particular its curriculum design and practice in South Africa, one realises that it is nearly exclusively based on Bloom's taxonomy of learning which confirms Piaget's genetic epistemology, Vygotsky's socio-historicism, and Brunner's cognitive and meaningful learning theories (Mahlomaholo, 1998). This study also notices that all national and provincial educational legislative imperatives and policy directives as discussed earlier and typified in FFL, QIDS UP, LAIP, NPAS, QLTC, IQMS and CPTD tend to ascribe quality learning and enhanced performance to sustainable empowering learning environments as defined, based on international learning theories as well as educational research findings and practices.

Given the positive findings regarding the nature, value and importance of sustainable empowering learning environments, the question is how can these be used to optimise

and enhance learning in the South African education system generally, and in the NWED in particular, especially now that they constitute and are official education and curriculum policies.

5. THE ROLE OF THE TEACHER

In the national and provincial documents typifying South Africa's educational legislative imperatives and policy directives, the teacher is identified as central to the creation, construction and maintenance of sustainable empowering learning environments (see FFL, QIDS UP, LAIP, NPAS, QLTC, IQMS and CPTD). From the study conducted earlier (Mahlomaholo and Sithebe, 2009) it was found that learners tend to regard the teacher as one single most important *aspect* of a sustainable empowering learning environment. This has been confirmed in studies referred to under the previous subheading. The role that the teacher is mandated to play in the creation of sustainable empowering learning environments is further amplified in the Norms and Standards for Educators as legislated for in the National Education Policy Act no 27 of 1996. This role is succinctly summarised in the National Policy Framework for Teacher Education and Development (NPFTED) in South Africa (DoE-NPFTED, 2006: 5) as:

> a specialist in a particular learning area, subject or phase, a specialist in teaching and learning, a specialist in assessment, a curriculum developer, a leader, administrator and manager, a scholar and life-long learner and a professional who plays a community, citizenship and pastoral care.

The above underpin FFL, QIDS UP, LAIP, NPAS and QLTC. Further details on these aspects constitute what the CPTD hopes to achieve by means of its six criteria as it facilitates the development of the teacher's competencies to execute his/her role effectively and efficiently. The IQMS in its current form – through its eleven performance standards and as envisaged in the NEEDU – also provides further details similar to the CPTD as it monitors and evaluates the extent to which the teacher manages to create sustainable empowering learning environments.

Some illustrious quotations regarding the role of the teacher also confirm the above conception of the teacher's role. For example Hager, Holland and Beckett (2002: 10) citing De Corte mention that teachers

> need to have a good balance between discovery learning and personal exploration, on the one hand, and systematic instruction and guidance on the other, that she/he should require students to progressively increase their share of self-regulation […] at the expense of external regulation, provide opportunities to use a rich array of resources and for social interaction and collaboration, allow for the flexible adaptation of the instructional support to accommodate individual differences and stages of learning and facilitate the acquisition of general learning and thinking skills throughout the curriculum.

For the purposes of this study, the role of the teacher is as understood above and elaborated in the educational legislative imperatives and policy directives, operationalised and typified in the FFL, QIDS UP, LAIP, NPAS, QLTC, IQMS and CPTD. This study attempts to find ways in which teachers can be supported (from

an informed scientific basis) as stipulated in these documents and the literature, so that they are better able to create sustainable empowering learning environments.

Another point emerging from the above discussion is that in defining and describing the role of the teacher one is inextricably defining and describing what constitutes sustainable empowering learning environments and how they are created and maintained by and through the teacher. It is concluded that, while an attempt is made to define and discuss each aspect independently, in practice all are tightly interwoven into each other.

6. The resources

In the execution of his/her daily functions of creating sustainable empowering learning environments, the teacher is guided by the principle of curriculum alignment. This implies that the teacher creates the learning environment guided first by the CCFO. The CCFO will ensure continuity of learning outcomes of learners from grade R to grade 12 and beyond. The CCFO describes the kind of citizen of a democratic state our education system should create, and as such each learning opportunity and each learning activity needs to incrementally lead to the attainment of these outcomes for all learners (Bender *et al.*, 2006).

The teacher needs to ensure that the level descriptors of the learning area/subject/ discipline for which s/he is responsible articulate directly with the CCFOs so that when learning occurs at any defined level of sophistication, it is geared towards the CCFOs. The level descriptors are based on the National Qualifications Framework's (NQF) 10 levels describing the less sophisticated forms of learning at level 1 and gradually increasing to more sophisticated levels which end at level 4 at grade 12 (Bender *et al.*, 2006). Learning at each grade thus operationalises respective expectation or descriptor(s) of learning at that level/grade. The level descriptors also define basic amount of learning required across learning areas/subjects at each grade (Bender *et al.*, 2006). In planning her/his lessons the teacher must ensure that specific learning outcomes for the programme, the module or the lesson are a direct result of the level descriptors. In this way, the learning that happens in each classroom will be linked to the level descriptors and to the CCFOs, ensuring perfect alignment of all curriculum activities (Bender *et al.*, 2006).

The above are crucial for the creation of sustainable empowering learning environments because, in the actual facilitation of learning, the teacher organises the learning opportunities and activities in alignment with each of the specific learning outcomes. The choice, design and use of learning resources thus become crucial determinants of success in the creation of sustainable empowering learning environments because on this basis each activity will be organised towards the achievement of the specific learning outcomes. Success will be based on the extent to which the learners through the facilitation of the teacher manage to achieve the specific learning outcomes assessed by the respective (assessment) standards. This implies that the teacher needs to design assessment processes that are aligned with the outcomes, and how facilitation towards their attainment was implemented. This

briefly means that the teacher assesses what s/he intended and actually taught. This also includes making sure that the manner of teaching and learning determines the assessment processes so that the entire curriculum process is aligned.

The above discussion implies that the teacher must show expertise in the seven roles described in the Norms and Standards document in order to successfully create sustainable empowering learning environments by means of the appropriate use of resources. S/he must know the principles of curriculum design flowing from the CCFOs through level descriptors, hence learning outcomes of a particular learning area/subject and the specific learning unit, to the use of relevant and effective resources with each of these outcomes in meeting respective assessment standards (Bender *et al.*, 2006).

The use of resources is also related to the sustainability of, and the extent to which, the learning environments empower learners. The teacher must ensure that learners develop lifelong competencies that will enable them to survive in the 21st century (Brown, 2005). Some of this century's challenges relate to the instability in the employment world. Currently people must continuously re-invent themselves as they move from one job to another due to retrenchments, often favourable economic conditions, technological advancements, and so on.

Unlike in the past, today's teacher is unlikely to know the career path of any or all of his/her learners (Brown, 2005). This implies that in the creation of empowering and sustainable learning environments, great care must be taken to prepare the learners for the future by using multiple forms of resources that emphasise real learning which is transferable and not mere instruction. The resources need to be used not only for the transmission of knowledge, but also mainly for supporting learners to actively construct knowledge in different and varying contexts (Norton, 2008). As learners construct knowledge on the basis of their past knowledge, the teacher needs to use this prior knowledge in choosing and designing resources that capitalise on this rich source of knowledge. Resources need to be used in order to foster cooperative learning, which includes negotiation and sharing of meaning through discussions, among learners (Brown, 2005; Norton, 2008). Resources for effective learning need not only be those artificially designed, but real-life situations could be ideal in some instances as resources for presenting real-life problems to be creatively and collectively tackled by learners for sustainable and empowering learning. Meaningful and effective use of resources also seems to be an integral part of constructive and developmental assessment which takes place from the beginning until the end of a sustainable and empowering learning experience (Norton, 2008).

Considering the educational legislative imperatives and policy directives as operationalised and typified in FFL, QIDS UP, LAIP, NPAS, QLTC, IQMS and CPTD, the use of resources as defined above implies opening up the potential of all learners, capitalising on their natural way of learning and enabling them to learn in the styles with which they are most comfortable - irrespective of what they are – thus enhancing their performance. Such use of resources fosters learning-to-be and not only learning-about (Brown, 2005), as knowledge becomes functional, useful, meaningful, relevant and portable. This study further investigates this mode of

using resources with the hope of finding ways of supporting teachers to adopt and implement as prescribed and suggested by the national and provincial curriculum documents. Global research (Rieber, 2001; Brown, 2005; Hager *et al.*, 2002) has shown that such use of resources is crucial to the creation of sustainable empowering learning environments that enhance learners' performance.

7. Learners' community cultural wealth/background knowledge

In this study the concepts of community cultural wealth and background knowledge of the learners are used interchangeably as they refer to similar processes in the creation of sustainable empowering learning environments. Research has shown that a learning environment that capitalises on the learners' background knowledge is always sustainable and empowers the learners (Auerbach, 2001; Anzaldua, 2002; Delgrado Bernal, 2002; Yosso, 2005). However, there are at least two ways of considering and integrating the background knowledge of learners. One could be to define it as inferior, lacking in capital and not worthy of recognising as basis for serious academic learning; the other way could be to view this knowledge as powerful and full of wealth to be used in all sustainable empowering learning environments. The first perspective is more deficit-based while the second is more positive and as such steeped in community cultural wealth (Yosso, 2005).

This study adopts the latter perspective which, as explained by Yosso, recognises that learners come to school with rich knowledge irrespective of their socio-economic status, rural or urban, ethnicity, race, or creed. To clarify the point Yosso postulates a definition and theory of community cultural wealth comprising aspirational, navigational, social, familial, linguistic and resistance capitals (2005). An analysis of each of these demonstrates connections and similarities with South Africa's CCFOs.

For example, the aspirational capital refers to the seemingly undying quest observed especially among the subaltern communities to do well at school despite the odds against them (Mahlomaholo, 1998). The latter study found that some of the learners from depressed and poverty-stricken environments still managed to do well at school because of a dream and a wish to change their living conditions through better education, hence better chances of employment. This dream apparently inspired them to work hard and remain focused. The community cultural knowledge of resilience that such a learner brings to school is often undervalued and ignored, whereas the CCFOs clearly state that they want to produce learners and ultimately graduates who can:

> identify and solve problems in which responses display that responsible decisions using critical and creative thinking have been made; community; Organise and manage oneself and one's activities responsibly and effectively; Collect, analyse, organise and critically evaluate information (Bender *et al.*, 2006).

Other CCFOs are directly related to the rest of the capitals constituting the community cultural wealth of learners coming into our learning environments. Based on the

above it appears that capitalising and building onto the learners' community cultural wealth, in the words of Hager *et al.* (2002: 10) enables them to acquire

> a commitment to learning from every new situation they encounter and the ability to fulfill that commitment; the ability to make context-sensitive judgments in the areas of communication, team work, creativity, critical analysis, professional and personal responsibility, leadership information literacy, IT literacy, international orientation and environmental awareness, among others. This capability involves the judgment to choose appropriate behaviour in varying professional and social contexts; acknowledge.

It is thus concluded that the creation of a sustainable empowering learning environment is greatly enhanced when the learners' background/community cultural wealth is its cornerstone. An analysis of FFL, QIDS UP, LAIP, NPAS, QLTC, IQMS and CPTD tends to reflect the centrality of community cultural wealth as a significant building-block of successful learning attained through the intervention of the teacher. This study will attempt to find out how, and the extent to which, this factor is considered in the creation of learning environments as well as the extent to which it makes those environments sustainable and empowering.

8. Discourses

It would appear that, besides cognitive stimulation, learners also need to feel wanted, valued, accepted, recognised and validated in any learning environment for it to be empowering and sustainable (Mahlomaholo and Sithebe, 2009). Creating learning communities where learners take responsibility, for example, for organising learning opportunities for themselves and their peers and being actively involved as part of a team in solving some identified problem, among others, tends to generate a good feeling among them about themselves and their abilities.

According to the research literature, teachers must create learning environments in which learners can acquire confidence through motivation, and a sense of ownership and control over their own learning and themselves (Duit and Treagust, 2003). This project proposes to contribute to this growing body of knowledge by focusing on discourses that go on in and around learning contexts. It is argued that in as much as the presence or absence of non-discursive elements such as school buildings, learning media and other educational resources impact on the construction of empowering learning environments, what seems equally important is the role played by meaning construction and 'making sense of' by the learners themselves and teachers in such environments.

In other words, this project attempts to find out whether and how learners' perceptions, views and attitudes have influenced and could be influenced in their environment(s) of learning such that they are more ready to learn despite the limitations that may impede proper, successful learning.

In concrete terms this means that this project clearly identifies in the teachers' and learners' discourses the significant marker(s) that have been used as basis for marginalisation and hence negative positioning in discourses that constitute their

learning environments. The project will then proceed to find out how learners in such defined positioning(s) construct meaning of themselves, their world and their own processes of learning, given the nature of their contexts. This information will enable one to closely examine the discourses of those who learn successfully in order to find out the patterns of their discourses in comparison to those of their peers who are not so successful so that on the basis thereof this project could suggest strategies that could be implemented in order to structure the learning environment so that the resultant discourses will empower learners to learn more successfully.

The projects, programmes and campaigns at the basis of this study, namely FFL, QIDS UP, LAIP, NPAS, QLTC, IQMS and CPTD, directly and indirectly confirm the value and importance of creating positive discourses in learning environments as the condition for empowerment and sustainability.

9. Aim of the study

This study attempts to respond to the following research question: What then constitutes a sustainable empowering learning environment and how can it be created in the context of current educational legislative imperatives and policy directives?

In response to this question, this study aims to conduct what Patti Lather (1986) calls *research as praxis.* When this approach is applied to learning environments, Eric de Corte (2000) calls it *design science of education.* This study attempts to support the efforts contained in the educational legislative imperatives and policy directives described above through more localised scientific intervention in and through the NWED schools. The investigation in an action research mode informs both theory and practice in the understanding and creation of sustainable empowering learning environments.

The objectives of this study are to analyse and operationalise

- the effective role of the teacher in the creation of sustainable empowering learning environments from Grades R to 12 as envisioned in the legislative imperatives and policy directives referred to above;
- the significance, availability and appropriate use of resources in the creation of sustainable empowering learning environments from Grades R to 12 as envisioned in the legislative imperatives and policy directives referred to above;
- the value and nature of positive discourses in the creation of sustainable empowering learning environments from Grades R to 12 as envisioned in the legislative imperatives and policy directives referred to under the National Priorities above to above, and
- the importance of learners' community cultural wealth in the creation of sustainable empowering learning environments from Grades R to 12 as envisioned in the legislative imperatives and policy directives referred to above.

10. Research design and methodology

Researchers

This study feeds into the NWED's actions and interventions to improve the state of educational provisioning in schools. For effectiveness the study is first located in the NWED District of Dr Kenneth Kaunda and is linked to the relevant structures therein.

The Research Team reports directly to the Executive District Manager/Chief Director who also serves as the patron of this SELEN project. The team consists of at least 30 researchers, 15 of whom are professionals in the District (including principals and teachers as required) and 15 academics from North-West University. The professionals are mainly in quality management, respective learning facilitation services and all other relevant sections as per projects of this study, while academics are also established in terms of educational research and practice of teaching and learning in the various disciplines/learning areas and subjects.

The overriding principle underpinning this collaboration is mutual and reciprocal respect and trust which is cultivated deliberately at all times. Respect and trust are the two values that drive how social justice research is conducted among and between researchers themselves, teachers, learners, parents and the Departments of Basic Education and Higher Education and Training. Additional principles guiding this collaboration are those stated in the Review of the Implementation of the NCS (DoE-NCS, 2009: 62):

> In-service teacher training should be targeted to where it is most needed. Training needs to be subject-specific. Principals, HODs, District and provincial support staff need in depth training on curriculum content and assessment requirements to be able to support teachers effectively. HEls should be required to align their teacher training programmes with the national curriculum policies. All training, in all contexts, must be underpinned by the principle that teachers should be actively teaching for a minimum number of hours a day, *every* day. This should be determined and enforced by the DOE as soon as possible.

The participants

This study focuses on the performance of learners. However, teachers as central to that process are targeted directly for support from, and in collaboration with, the SELEN research team. Initially the study is targeted on eight identified schools in the above Education District. Four of these schools handle Grades R to 7 classes while the remaining four take care of Grades 8 to 12. All participating schools are in the black townships where the need for support was expressed by the respective principals. The average number of teachers per school is 27, offering all the commonly available subjects from Grades R to 12, respectively. The schools' profiles are similar in terms of the socio-economic status of the parent communities (poor), the gender (more or less equal numbers), age (24-56) and race (exclusively black) distributions of the teachers and the learners, as well as the previous levels of performance especially at Grade 12.

Collecting and analysing data

This study is conducted for informing mainly classroom practice and academic theory building. The *design science of education* formulates, implements, acts, monitors, reflects and describes what constitutes sustainable empowering learning environments. It is thus an exploratory study which is also descriptive, located within the interstice and confluence of engaged scholarship, social justice research and social constructivism.

In practice, the following steps are followed in implementing this framework:

▪ Collecting baseline data by accessing the teachers' perceptions regarding FFL, QIDS UP, LAIP, NPAS, QLTC, IQMS and/or CPTD, respectively, in the creation of sustainable empowering learning environments.

▪ In conjunction with the teachers who implement the abovementioned projects, design, monitor and evaluate strategies to improve their practice.

▪ Determine during and after the intervention whether there is any change in terms of learners' and teachers' perceptions.

▪ Assess whether learners and teachers' performance has improved as assessed by existing formal and standard tests.

The SWOT analysis is the most effective and acceptable strategy for collecting data on teachers' perceptions. The *Handbook for Whole School Evaluation* (DoE-WSE 2002: 39-55) details these procedures ranging from creating a free and invitational environment for teachers to freely reflecting and talking about their own strengths, weaknesses, opportunities and threats. These procedures also provide opportunities for teachers and researchers to develop a common vision and mission which are so central in the creation of a trusting relationship. One important outcome of this data collection procedure is that it also helps in facilitating the establishment of the learning community/community of practice among teachers along the same lines that collaborative learning, problem-based education and outcomes-based education do for learners.

Ineke Meulenberg-Buskens' (1993) Free Attitude Interview Technique (FAI) is used to facilitate these discussions. One question, similar to the research question in this study, is asked to initiate the conversation; the ensuing conversation is followed up with clarifying questions to encourage more reflection. In case of digressions, the reflective summary is used to bring the conversations back on track. With the necessary permission these conversations will be taped-recorded and/or videotaped for transcription and analysis at a later stage by the researchers (together with the teachers if so required) using Teun van Dijck's (2004 and 2006) Critical Discourse Analysis (CDA). This analytical tool enables the study to unearth those underlying issues informing the perceptions of the teachers on any one of these: FFL, QIDS UP, LAIP, NPAS, QLTC, IQMS and/or CPTD. The technique, using spoken words as evidence, uncovers the discursive practices couching and embedding the views expressed. Further evidence is also gleaned at the social structural level as the latter informs meaning construction that teachers employ to make sense of the value and importance of the implementation of FFL, QIDS UP, LAIP, NPAS, QLTC, IQMS and/or CPTD.

Based on the outcomes of this discussion, priorities for further intervention and actions plans for creating sustainable empowering learning environments based on and/or compliant with educational legislative and policy directives are formulated accordingly. The emphasis is on teachers taking ownership of their plans, implementing them practically, monitoring them in terms of objectives and timeframes, and reporting on them with the support of the research team. Monthly meetings for reporting on progress and revisiting the plans are scheduled per school.

However, there are great differences in terms of the extent to which the various schools and teachers have formulated communities of practice/learning communities per grade and/or learning area or subject. These disparities also affect the extent to which they have been able to design plans per individual and per school as required to address FFL, QIDS UP, LAIP, NPAS, QLTC, IQMS and/or CPTD, respectively. If a school does not have an established learning community, this is established per grade and per learning area/subject. This intervention emphasises teacher collaboration and serving as each other's resource by discovering their individual and collective power.

The approach in this study is to proceed with the teachers from the start to the highest possible levels of mastery in designing, implementing, monitoring and evaluating the seven programmes/campaigns individually and collectively per learning community. Each session emphasises the transfer of knowledge with regard to the finer details of each of the seven programmes, followed by fostering comprehension of what each entails. This occurs in the context of the learning communities organised around common learning area/subject or grade or both because this will have to include the practicality of the learning environment. The next aspect of the sessions ensures mastery in the application of each of the aspects of the programme/project. Each teacher is given the opportunity to practically share and demonstrate his/her competence to his/her peers in class. The role of the peers in conjunction with the research team is to provide feedback to enable each teacher to analyse, synthesise and evaluate his/her level of mastery in the context and support from his/her peers.

11. Monitoring change

Each of the workshops and lessons, starting with the one where baseline data are collected, are audio- and/or videotaped as basis for analysis, reflection and monitoring, but most importantly for improvement of practice upon closer scrutiny by peers and the research team. These are also transcribed *verbatim* for use as data for compiling research reports that are used to inform future practice and policy decisions, as well as for publications in scientific journals and books.

In executing their responsibilities teachers assess their learners' performance. This will continue to take place in this study. Results from such internal and external assessment tools and occasions will be used and analysed as indicators of progress for both the learners and the teachers. These will be as regular as prescribed in the official documents. The study thus does not in any way impose any extra responsibilities on the teachers or learners. At the end of the quarter reports covering all activities including progress noted are compiled per learning community and

per school. For a more comprehensive picture another reflection session with the teachers in the learning communities will be held to assess and evaluate the entire study, based on all the reports.

12. Conclusion and preliminary outcomes

To date the following outcomes have emerged from the SELEN collaborative research project:

- Each of the eight participating schools now has well-functioning communities of learning for the entire school and per subject discipline/learning area.

- Two of these schools now have clear strategic plans which are in the process of being operationalised.

- The SELEN research team is involved in discussions for establishing similar collaborative teams across the province.

- More teachers in the participating schools report that they are now better able to execute their responsibilities with greater confidence.

- The first four sets of reports have been submitted for publication in accredited journals and books.

- Monthly reflections and feedback sessions at all the participating schools and in the SELEN team are on track and there is great enthusiasm from all participants to ensure its success.

- Assessment of learners as a diagnostic measure is continuing, although learner performance has not yet been analysed to determine the presence or absence of positive developments that could be ascribed to this collaboration.

- The university curriculum for pre-service aspirant teachers is gradually being adapted to meet the new, relevant and practical challenges identified in the participating schools.

- Closer working relationships between the university and the practice schools are emerging as the latter gear themselves to support student-teachers better.

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Action research: a tool for stimulating reflection and innovation among teacher researchers

Tšeliso M Makoelle
University of Manchester, UK
makoelletm@webmail.co.za

1. INTRODUCTION

Action research has become a significant research method for enhancing reflection and innovation for improving teacher practice. This review chapter critically analyses the impact of action research in enhancing and stimulating reflection and innovation among South African teachers. It provides an overview of the literature on action research, and why it is a viable research alternative method. Its philosophical and historical tenets are highlighted within the framework of a qualitative paradigm. The chapter also discusses the epistemological relevance of action research as a research method in schools. The contrasting analysis with positivist modes of research is projected. Its critical emancipatory context is discussed. A discussion of its collaborative significance in relation to reflective processes outlines the process of action research. Several examples of action research practice are provided as basis to support the underlying argument of the paper. The chapter concludes by providing guidelines of how action research could be used to enhance reflection and innovation among teachers.

The dawn of a new political dispensation in South Africa in 1994 cumulated in a multiplicity of changes in the education fraternity. Among these changes is the role of teachers with regard to how they articulate curriculum and handle the teaching practice. Prior to 1994 teachers were regarded as knowledge masters, who must transfer knowledge to their learners. After 1994 the role of the teacher changed to that of facilitator rather than knowledge master (Kruger, 1998). One of the major roles of the teacher became that of designing, planning and innovatively executing the new outcomes-based curriculum. This role called for more critical reflection and review of the teachers' own practice, which most if not all teachers find a daunting task. In order to cast light on the issue one is tempted to ask the question: "How can innovation and reflection be stimulated among teachers?"

In an attempt to answer this question this chapter examines action research as an alternative tool for stimulating reflection and innovation among teachers in South African schools.

2. Background

In "Understanding the development of inclusive schools", Mel Ainscow (1999: 180) tells the following story:

> Two education professors old and young were writing books and journals, and to the demise and disappointment of the old professor, his books were not rejuvenating interest among the readers, this prompted him to ask himself a difficult question, which was 'why'. In attempting to find a solution to the problem, he posed the question to the young professor who answered, 'I think you should visit schools often before you write your work'.

The above story also prompted me as a teacher to ponder and ask myself what should teachers do differently to enhance the way they perceive their work?

Research in South African schools is, according to my experience, characterised by predominantly filling questionnaires and answering interview questions, which most often than not were pre-determined and planned by researchers. While noting this experience one is tempted to examine an alternative method of finding out more about what is and what could be by involving those whom research results are intended to empower.

In their work Oettle and Law (2005) mention and analyse three ways in which scientific research is conceptualised by making a distinction between scientific reasoning, practical reasoning and action research.

In their analysis of the three, Oettle and Law (2005: 1) postulate that:

> In a conventional 'Scientific research' process both natural phenomena and people are treated as 'objects' of research. The researcher is seen as somehow separated form the situation, not engaging with it, or influencing it in any way but in reality, people are self-determining subjects like the scientists and practitioners themselves, and cannot be studied as mere objects. Neither can the researcher claim not to influence the situation he or she is researching. Socio-environmental systems themselves are endlessly complex and scientific constructed cause effect models are severely limited in what they can describe.

The above quotation indicates that others believe that research is research when conducted by a researcher who is distant from the phenomenon. Oettle and Law (2005) argue that this understanding of research process no longer holds water; they postulate that there are currently three ways in which research is done. This is articulated by defining three basic concepts, namely scientific reasoning, practical reasoning and action research. The latter becomes crucial later in this paper.

While scientific reasoning follows a systematic set of procedures, Oettle and Law (2005) indicate that practical reasoning entails finding practical solutions to problems. This is characterised by the following key determinant:

- **Necessity** – the need to find answers to questions;
- **Uncertainty** – finding it difficult to predict the future;
- **Realities** – being prompted to consider the realities of the situation;
- **Uniqueness** – addressing questions of a different nature;

- **Sacrifice** – making choices which lead to not focusing on others;
- **Unpredictability** – not knowing what the result of the decision will be;
- **Ambiguity of action** – practical decisions are based on anticipated results and actions.

Oettle and Law (2005: 2) posit that action research is an alternative to both scientific and practical reasoning as "it acknowledges co-responsibility for outcomes of actions …".

The researcher and subject both take responsibility for the unfolding future. They describe action research as a dynamic social process, which is emancipatory in the sense of empowering subjects and changing the social dimensions. Action research is presented as a viable alternative to other forms of research in schools.

3. History of action research

Philosophical history

Masters (1995: 1) describes action research as:

> A method of inquiry has evolved over last century, careful study of literature shows clearly, and convincingly that action research is a root derivative of the scientific method reaching back to the science in Education movement of the late nineteenth century.

and mentions the following authors Kemmis Mc Taggert (1998), Zuber-Skerrit (1992) and Me Kernan (1991) who indicate that action research was conceptualised by Kurt Lewin. Masters (1995) believes that action research was philosophically influenced by:

- The science in education movement of the nineteenth and early twentieth century.
- The experimentalist and progressive educational work of people such as John Dewey.
- The group dynamics movement in social psychology and human relations training to address social problems of which Kurt Lewin was a prominent figure.
- The post-war deconstructionists' curriculum development activity to address curriculum reform and change noted by Corey (1953) and Taba (1949).
- The teacher researcher movements in the UK of people such as Stenhouse (1971).

When one analyses these historical snapshots one feels that action research is about change of social situation by interested groups. The latter, for instance teachers as researchers in relation to curriculum delivery in the classroom, is crucial for the aim of this paper.

In his work entitled "The dynamics of group action" Kurt Lewin (1946) highlights the significance of group decision as the basis for transformation, production and change. He indicates that the importance of conducting research lies with being nearest to the problem and providing a deeper insight and understanding of group life. The following sums it up (Lewin, 1946: 195):

> Such action research started as a mere trickle with studying childrens' clubs. It has spread to the study of such groups as the boy scouts, college students, housewives and to the fields of nutrition and industry.

Lewin demonstrates action research as a democratisation of learning through actions by groups. He suggests and uses a triangle to depict democracy, autocracy and *laissez-faire* as against the belief that democracy and autocracy are two opposite ends of the continuum:

D (Democracy)

A
(Autocracy)

LF
(*Laissez-faire*)
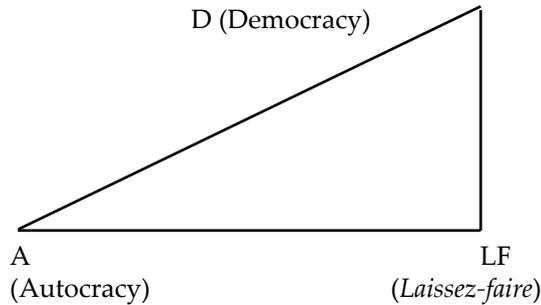
By using the triangle, Lewin demonstrates that the democratisation of learning creates and improves the level of responsibility and accountability by those involved in an action of learning. He also indicates the significant of three pivotal processes in the learning process, namely discussion, decision and action.

Lewin indicates that if discussion does not lead to decision it does not necessarily lead to higher production. He regards decision as most significant if the beliefs and cultures of groups are to be changed. Group decision based on group goals leads to increased action as group members are motivated to achieve what they have set for themselves. With this Lewin demonstrates that ideology or cultural habits are more prone to change when dealing with groups than individuals. The roles of a democratic leader and a democratic follower are regarded as complementary and a fair share of responsibility in attaining group goals.

Action research is based on the fundamental principles of collaboration and elevating voices in the group. It is a practical method that allows emancipatory, interpretive and critical participation of subjects. Action research interrogates the existing sociocultural structures; examines power relations in organisations with a purpose of changing the situation and creating more favourable circumstances (Carson and Sumara, 1997). According to White (2005), action research is a cyclic process of planning, taking action, observing and reflecting on the observed practices.

Action research is conceptualised as a reflective enquiry helping professionals to understand the assumptions, values and beliefs about policy and practice. The purpose is to review the practice in local context with the aim of improving conditions. Action research as a research method is criticised for its limitations such as lack of generalisability of findings, its isolation from the social context and its individualistic nature (O'Hanlon, 2003).

It is a method with evaluative intentions. Processes of collaboration, interaction, observation, reflection and dialogue by teacher researchers dominate the action research process. It is intended to hear the teachers' voices and it invests in teacher intellectual and experiential expertise (Caro-Bruce *et al.*, 2007).

Pollard (2002) equates action research with teacher research, referring to action research as a systematic research not aimed at producing new knowledge but intended to improving practice by developing local theory (McNiff and Whitehead, 2005). It focuses on illuminating practice rather than justifying generalisation.

Drawing from her experiences, Somekh (in Altrichter and Elliott, 2003) postulates the changing of action research. She defines action research as a vehicle for managing changes in the classroom. It is viewed as a medium whereby change can be implemented. Similarly Mohr *et al.* (2004) view action research as a process led by teachers and state that teacher collaboration is important during the research process.

According to Somekh (2006), action research is a methodology for change in schools. Teachers embark on partnership and reflection, and recognise the ethical sensitivity of the research investigation process. Good human relationships, effective communication and active participation are the cornerstone principle of teacher cooperation and collaboration (Stringer, 2008). It is regarded as a cyclic method which integrates processes, namely data collection, investigation, analysis and interpretation, conducted in collaboration with the teachers and which focuses on transformation and equity for all.

Definition of action research

While the literature gives numerous definitions of action research, the following were chosen for their direct and straightforward explanation, that is, action research is defined as:

> a form of collective self-reflective inquiry undertaken by participants in social situations in order to improve the rationality and justice of their own social or educational practices, as well as their understanding of these practices and the situations in which these practices are carried out (Kemmis and Taggert, 1990:4-5).

In the work of Eileen Ferrence (2000), action research is conceptualised as a critical and practical systematic examination of practice by a participant, based on the following assumptions:

- Teachers and principals work best on problems they have identified for themselves.
- Teachers and principals become more effective when encouraged to examine and assess their own work and then consider ways of working differently.
- Teachers and principals help each other by collaborating.
- Working with colleagues helps teachers and principals in their professional development.

The above-mentioned definitions seem to revolve around similar but fundamental principles that include issues of collaboration, inclusivity and collectivism, without which it could be a complex task to advance action research.

Types of action research

Action research occurs in different forms. While the basic process of research is similar in all types of action research there appears to be differences in the actual nature of how research is conducted. Masters (1995) classifies action research in three groups:

- scientific technical action research;
- practical-deliberative (collaborative) action research, and
- critical-emancipatory research.

Scientific technical action research places the research in a facilitating position in relation to subject and endeavours to test a pre-planned theoretical framework. The relationship between the researcher and his/her subjects is that s/he is the facilitator of a research group.

Practical-deliberative action research is based on cooperation and collaboration between the researchers and his/her subjects in that both parties, with the purpose of solving immediate problems, collectively decide problems and forms of intervention. This is to a large extent based on negotiations, interaction and interpretative discussions and negotiations.

Critical-emancipatory action research advances the agenda of individual empowerment and seeks to militate against the abuse of subjects. It fosters participation, promotes emancipatory praxis, and raises a collective consciousness. The main focus is to introduce a critique or a framework whereby change could be instituted and hegemonic structures challenged in a society. Masters (1995) highlights this phenomenon as a social consciousness, a "critical assessment of the social milieu that impedes the fostering of the good".

Processes such as reflection and group interpretative processes become paramount to emancipatory action research. Similarly, Ferrance (2000) classifies action research using the magnitude of the research area as a yardstick or criterion for classification. Ferrance mentions individual teacher research in a single classroom, collaborative action research in several classrooms, school-wide action research in the entire school and district wide action research in the entire education district. While action research is conceptualised and categorised in different ways, one is tempted to assert that all are based on one fundamental process which is derived from the same philosophical premise.

Process of action research

Action research recognises the role of teachers as researchers. Mohr (2004) acknowledges that action research is a method of research managed by teachers. Teachers elect their

research group which contributes to the planning and monitoring processes. It is transformative in nature and offers teachers the opportunity to collaborate.

Pollard (2002) postulates that teachers should have the following characteristics in mapping the development by means of action research:

- Systematic questioning of their own practice as a basis for development;
- Commitment to study their own practice;
- Ability to test a theory in practice.

The network between teachers manifests into what is called "research forum" which is a platform created to deal with conclusions, critique and the testing of new ideas (Pollard, 2002). Research is to a large extent public in that stakeholders reflect on their practices publicly by means of analysing the data and evidence collected. Ainscow *et al*. (2006) refer to this as group interpretive process. By means of evidence-based data teachers begin to improve on their practice, the phenomenon referred to as "evidence based teaching" (Hammersley, 2007).

Altrichter and Elliott (2003) mention teachers during the action research process, assuming what is called "double task", meaning teacher and researcher. Teachers practise and reflect on their practice using action research either with themselves or with colleagues through the process which Giddens (1994) calls dialogical democracy and which Posch (1996) calls dynamic networking. The process of action research is characterised by the process of linking theory with practice, maintaining the conceptual and perceptual knowledge, value objectiv it y and subjectivity, and focusing on the individual or group (Altrichter and Elliott, 2003). Like Fullan (2001), in educational change Somekh cautions against management-led school action research which is intended to disguise teacher involvement while imposing ideas on teachers.

Contrary to the notion of a management-led school action research, teachers negotiate research questions, and the means to find answers to the research questions are agreed upon. They adopt an emancipatory approach, critically examining power relations and engaging with the broader political structures to ensure social justice. Drawing from the work of Habermas, Somekh's (2006) concept of "communicative action" and Marx's concept of "false consciousness" as well as Foucault's "deconstruction of the regimes of truths" substantiate the argument that action research attempts to emancipate the socially oppressed by deconstructing meaning through the participation and involvement of teachers as researchers.

Teachers forming networks and collaborating to learn more about their practices dominate the process. Ainscow, Booth and Dyson (2006) describe action research as a process whereby teacher researchers engage in processes of triangulation, such as observation, interviews, pictures and videos. The process of data analysis and interpretation vary according to the interest of the researchers. Ainscow *et al*. (2006) mention the notion of group interpretive process whereby teachers collaboratively embark on reflection and meaning making. Somekh (2006) emphasises the significance of images in reporting the results of action research, arguing that images complement reports where data cannot be reported in the form of words. The researcher found

Kemmis and McTaggard's approach (1988) relevant to the process by illustrating the latter using a four-phased model:

- **The plan**: a flexible, unpredictable anticipation of what will occur in the future.
- **The action**: a deliberate and controlled activity process often defined by putting ideas into action, as influenced by past practices, and reflecting critically on the changes between past and new practice.
- **Observation**: documenting and recording the effects of action in an open way and recording the unexpected using mostly research diaries.
- **Reflection**: recall of action as observed, active engagement with data to make sense and give meaning and interpretation, quite evaluative in nature.

4. WHY IS MOST ACTION RESEARCH QUALITATIVE IN APPROACH?

The research process is usually conducted qualitatively or quantitatively or by using both approaches. It is important that the approach used be appropriate or suitable for the kind of enquiry that the researcher envisages. While it is important to define one's position with regard to both or either methods, it is equally important not to downplay the contribution that both approaches have made to the scientific methodology of research.

The quantitative research approach starts from the premise that reality could be objectively studied, quantified and measured. It emphasises the causal relationships between the components of reality often referred to as variables. The assumption that knowledge should be value free is vital for the research process (Denzin and Lincoln, 2005).

The qualitative research approach, on the other hand, is not based on the assumption that what is under study could best be described using quantifiable measures such as statistics or numericals. It stresses the socially constructed nature of social reality and the close relationship between the researcher and those or what is being studied (Denzin and Lincoln, 2005). Qualitative research focuses on the meaning constructed through the experiences of those under study, and the way those under study interpret and make sense of the world out of their experiences (Merriam, 1998). The notion that: "Let those under study speak for themselves" is of utmost important to accommodate the subjective aspect of the social reality. A more comprehensive description of the phenomenon under study is evident in the detailed data generated by the majority of the qualitative research projects.

The qualitative research approach has several characteristics that make it relevant to this paper. First, data is collected directly from the natural setting which provides first-hand information and details of activities. There is a personal involvement by the researcher and those under study and their interpretation and meanings are of significance in highlighting research objectives. The different sources of data are triangulated to give a holistic account of the research process. The research process assumes an inductive approach and because the process is emergent the qualitative research plan is mostly not tightly prescribed because of the dynamic nature of the

social reality. The interpretation of data is mostly reliant on what is observed, heard or understood (Creswell, 2007: 38-40). The element of participation of those under study in action research makes such an inquiry more qualitative than quantitative (Greenwood and Levin, 1998).

5. EPISTEMOLOGICAL BASIS FOR THE SOUTH AFRICAN CONTEXT

The epistemological view in this paper is inspired by the fact that the researcher was educated in South Africa in the apartheid era. He became a teacher for a separatist education system based on racial segregation and white supremacy. Indoctrination was the order of reason, accepting policy as is and being forced to practice it. Currently, the South African society is transforming since the democratic elections in 1994. The transformation and political change process also affected the educational ideology and practice. Therefore this paper has to some extent political aspirations. The move away from a traditional separatist form of teaching to an inclusive teaching system poses challenges of both transformation of teacher role as mere passive implementer of policy to builder of theories that inform policy and practice. To assist teachers to be critical thinkers rather than merely accepting everything they are told refers to what could be called "psychological emancipation" of teachers from the bondage of past indoctrination, undermining their power of reason. Freire (1987) mentions how teachers can be liberating in their teaching, suggesting that they should reinvent themselves by challenging tradition and mass culture, being critical to both methods and engaging in critical dialogue.

WHY NOT POSITIVIST?

Research of a positivist nature is usually inclined to disguise value biases as objective knowledge and to a large extent imply support of the sociopolitical status quos. Positivists assume that objects exist outside our beliefs about them and that scientific knowledge consists of universal laws or principles of value neutrality (Hammersley, 1995: 1-3). This is contrary to the influence of the subjectivity element of social reality which may fall short of being universal but context bound. Positivists (Hammersley, 1995: 4) assume that:

- What is taken to be the method of natural science is the only rational source of knowledge.
- This method should be applied in social science research irrespective of any supposedly distinctive features of social reality.
- That quantitative measurements and experimental or statistical manipulations of variables are essential or at least ideal features of scientific research.
- Research can and should be concerned with producing accounts which correspond with an independent reality.
- Scientific knowledge consists of universal laws.
- Research must be objective with subjective biases being overcome through commitment to the principle of value neutrality.

are prescriptive in their origin and suppress the power of the subjective mind of those being studied. Unlike physical objects, human beings are rational beings imbued with the power of reason, and reality cannot exist outside their socio-historical context.

WHY CRITICAL?

From a critical research perspective the concept "critical" cannot be used with its dictionary meaning which, according to the *Oxford dictionary* (2006) means expressing disapproval of something; involving an assessment of a literary or artistic work; at the point of danger. From a critical research point of view the concept would mean examining the research data with a critical perspective, in other words, what it answers and what it does not answer, and what influences its nature and existence.

Hammersley (1995) postulates that rather than being based on the hypothesis verification process, critical research is based on the principle of the falsifiability of the hypothesis. Reason (being rational) is the cornerstone of critical research. Reflexivity which is the process of probing one's reasoning is vital for the research process. Not only is logical thought used to ease the tension between individuality and the collective social but the historical framework (Farren, 2005). The historical as informed by the communicative processes is prominent for social interaction.

Hammersley (1995: 30) also states:

> Criticism renders transparent what had previously been hidden, and doing so it initiates a process of self reflection, in individual or group designed to achieve liberation from the domination of past constraints.

Critical research is ethically and politically superior because it deepens the understanding of the structures underlying the practices that are historically oppressive, challenging the regimes of truths and power (Denzin and Lincoln, 2003). "The role of the researcher is to lift the barriers which prevent the masses from speaking" (Foucault quoted in Hammerskey, 2006).

Similarly, Crotty (1998) asserts that critical research can never be isolated from the ideological orientation; in other words, certain groups in society are more privileged than others, thus constituting a form of oppression. The role of the social collective is therefore indispensable in critical research processes because as a collaborative entity the researchers are charged with the responsibility to challenge their beliefs and notions of their practice as a critical collaborative action. Such a critical process can take its form when the researchers collaboratively develop a community within which the critical processes can be initiated.

6. WHY ACTION RESEARCH FOR SOUTH AFRICAN TEACHERS?

The majority of the literature on teacher change and change implementation points to the fact that teachers embrace and implement change when they are involved or had a chance to participate in the initiation, planning, designing and implementation processes. The majority of the literature on initiating change in schools to develop teaching practices also points to the significance of teacher collaboration as an

appropriate approach (Fullan, 1999; Engelbrecht, 2001; Ainscow, Booth and Dyson, 2006; Ceasar and Santos, 2006).

Engelbrecht (2001) notes that teachers in South Africa resist change because change was often imposed on them during the apartheid education era. It is therefore crucial that any change process, as Fullan (1999) maintains, takes teachers' beliefs into consideration and that they are active participants in the change process if it is to be realised.

Teachers in South African schools find themselves in a position where they have to implement outcomes-based education since its introduction in 1997 (Vermeulen, 1997). The process of change from the traditional way of teaching to a more inclusive approach prompts teachers to critically reflect on their practices. The process of reflection on teaching practice was not a common practice in South African schools. The opportunity to be action researchers provides teachers with an opportunity to emancipate themselves from the bondage of indoctrination and from the injustices of the apartheid education philosophy.

The process whereby teachers investigate their practices and simultaneously implement what suits their situation and context is realised by what Kurt Lewin calls action research.

7. How is action research used to stimulate innovation and reflection?

Innovation and reflection are understood differently by context and implication. In an attempt to describe the two concepts, the work of Engel (1995) and Kemmis (1985) become prominent and instrumental. Innovation is a process of generating new ideas and addressing immediate problems. In his PhD thesis entitled "Facilitating innovation: an action-oriented approach and participating methodology to improve innovative social practice in agriculture" Engel (1995: 27) attempts to define innovation as:

> A diffuse, social process of both individual and collective inquiry into intentions, alternative solutions and enabling and constraining conditions which leads to new or modified problem definitions and practical choices of solutions.

Engel points out that innovations are stimulated by social actors seeking relevant ideas, knowledge, information and experiences to assist in building their practices through networking, interacting, mobilising resources and building communication networks. Innovation takes on the strength and talents of individuals and employs them in seeking solutions.

On the other hand, in *"Action research and the politics of reflection"* Kemmis conceptualises reflection as a revolt against mass culture that has the potential to destroy critical thinking. Kemmis believes that reflection is a political process and describes it as follows:

- Reflection is not a purely "internal" psychological process; it is action-oriented and historically embedded.
- Reflection is not a purely individual process like language; it is a social process.
- Reflection serves human interests; it is a political process.
- Reflection is shaped by ideology; it, in turn, shapes ideology.
- Reflection is a practice which expresses our power to reconstitute social life by the way we participate in communication, decision-making and social action.
- Research methods which fail take into account the aspects of reflection that are, at best, limited and, at worst, mistaken. In order to improve reflection, the study of reflection must explore the double dialectic of thought and action in the individual and society.
- A research programme for the improvement of reflection must be conducted through self-reflection; it must engage specific individuals and groups in ideology critique and participatory, collaborative and emancipating action research.

The above exposition is indicative of the role of collective reflective exercise that remains fundamental to establishing collaboration and critical thinking. The collective is espoused through a community of practitioners who form a learning group with the purpose of reflecting on practice and generating solutions to problems.

8. Establishing communities of enquiry in the community of practice

Retallick, Cocklin, and Coombe (1999) describe a community as a social organisation characterised by relationships and the sharing of ideas. It is a body that binds people together to a set of values and ideas.

Practitioners are afforded the opportunity to interact with one another, reflect on their practice and begin to change their attitudes towards and beliefs concerning an inclusive teaching practice. Not all communities are engaged in action learning; for such learning to take place the community of practice must be developed.

The community of practice is therefore defined as a group of practitioners who share a common practice through a set of agreed values, knowledge, terminology and procedures which offers a room for problem-solving. The purpose is to create knowledge, clarify their perceptions of reality, goals and strategies for achieving them. Data is collected for the purpose of solving their immediate problems by building local theory, testing it through action by inferring from the observable behaviour with a purpose to institute change. The role of the researcher is to create conditions under which practitioners can test theories of practice for the purpose of learning (Reason and Bradbury, 2006). The process whereby a community of practice probes its practice occurs within a community of enquiry. Retallic, Cocklin and Coombe (1999) refer to the community of enquiry as a community of learning with similar attributes such as collaboration, engagement, refection and the development of the local theory that addresses a problem as identified by the practitioners. The community of enquiry embarks on the process of testing its local theories.

9. How are theories tested?

The community of enquiry in a community of practice is a collective intended to probe the practice by asking the following questions (Reason and Bradbury, 2006: 133): How do practitioners perceive a situation or problem? What results do they wish to achieve? What strategies do they intend to use in order to achieve these objectives? What were the actual outcomes of these strategies? To what extent did the outcomes match the intended results?

The above questions are significant for the process of enquiry. The community of enquiry determines patterns from the data by using the interpretive process, considering multiple interpretations of data (intersubjective testing), making comparisons between what teachers say they do (espoused theory) and what was observed (theory in use), and reflecting critically by using the "ladder of inference" which is the interpretation of data from a concrete to a more abstract level of reasoning. If a consensus cannot be reached, practitioners could turn to a concrete level in order to identify an area of divergent thinking.

The interpretive process may not guarantee consensus. Testing a theory adopts a principle of falsifiability of the theory. The process gives alternative solutions to problems, suggesting change of beliefs, perception and practice to inform transformation (Reason and Bradbury, 2006). Reason and Bradbury further posit that change will take place on two levels namely, strategies (single loop) and conditions (double loop). Change at strategies level is often easy while at conditions level it is complex because it involves change of assumptions, goals, values and beliefs. While the community of enquiry is probing practice, reflecting on it and drawing conclusions, Brockbank and Macgill (2004) refer to action learning because the group learns by experiencing their actions. The process of learning as a community is important for empowering the practitioners and increasing their participation (Truman, Mertens and Humphries, 2000). The process of critical collaborative action research becomes indispensable.

10. Conclusion

The chapter gave an introductory background to the research problem. The history of action research was discussed within the framework of its philosophical history, definition types of action research and process of action research. Action research was discussed by highlighting its qualitative nature. Its epistemological basis for the South African context was demonstrated by indicating its relation to positivism and critical theory. Relevance to the South African context was highlighted and suggestions made for its use as a tool to stimulate innovation and reflection among teachers.

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CHAPTER 3

Teacher trainees' perceptions of their own self-directedness in learning

Aubrey Golightly
North-West University
Aubrey.golightly@nwu.ac.za
&
R.G. Brockett
University of Tennessee, Knoxville, Tennessee
brockett@utk.edu

1. INTRODUCTION

The goal of lifelong learning is to equip people with skills and competencies to continue their own "self-education" beyond the borders of formal schooling. Education should, therefore, provide for more than students passively receiving information, even though that is what happens in most traditional classroom settings. Tertiary institutions and schools need to prepare learners to engage in self-directed learning (SDL) processes, not only to improve and enhance their current learning skills, but also to prepare them as lifelong learners beyond the institution's walls. The purpose of this study was to determine how first- and fourth-year BEd teacher trainees (n=704) rate their own self-directedness in learning. A self-directed learning readiness scale (SRSSDL) questionnaire developed by Williamson (2007) was applied with this purpose in mind. The SRSSDL focuses specifically on the following subsections: awareness, learning strategies, learning activities, evaluation and interpersonal skills. Each of these subsections consists of 12 items. The questionnaire was analysed using Cronbach's coefficient alpha to measure reliability. Descriptive statistical techniques, such as mean, standard deviation and effect sizes were calculated in order to organise, analyse and interpret the quantitative data. The results indicate that the majority of the participants rate their self-directedness in learning as high. Implications for practice in tertiary institutions are discussed.

With the information and technology revolution of the 21st century, the traditional education system which advocates that the educator is the sole source of knowledge, is ill-equipped to prepare its "victims" for the challenges of today's workplace. Schools and tertiary institutions should provide teaching-learning opportunities that consist of more than students passively receiving information, even though this is the case in the majority of the traditional classroom settings (McCauley and McClelland, 2004: 26). Guglielmino and Guglielmino (2006) point out that, in an effective learning environment, the key element is the acceptance of responsibility by each individual for recognising and addressing his/her own needs and sharing that learning with appropriate others in the organisation. In other words, each individual now needs

to function as a self-directed learner in order to meet the demands of the rapidly changing workplace. Guglielmino (2008: 10) and Lublin (2003: 2) state that current times require continuous lifelong learning and relearning by each individual, and no educational institution can hope to meet the demand for delivering such instruction. Educational institutions and schools must thus incorporate the development of the attitudes and skills supporting self-directed lifelong learning as a central aim of their programmes. They must instil in students the ability and desire to continue to learn, long after the formal conclusion of their school or university studies.

A basic tenet of self-directed learning is that the learner participates cognitively and actively in the learning process, including goal-setting (Pintrich, 2000), information-processing and active construction of new knowledge (McCombs, 2001), self-monitoring of learning progress (Zimmerman, 1998), self-adjustment based on feedback, the control of the learning environment for effective learning, as well as selection and modification of learning strategies (Chan, 1993).

Numerous factors affect the deployment of self-directed learning strategies: cognitive and meta-cognitive factors, motivational factors and individual factors. Three cognitive and meta-cognitive, motivational and individual factors are identified as relevant to self-directed learning (Mok and Cheng, 2002): the pedagogical (knowledge about resources for learning; awareness of one's own level of prior knowledge and learning style), sociological (awareness of social resources available to support learning) and psychological levels (self-awareness of affective feelings towards the learning task). Pintrich (2000) and Schunk and Zimmerman (1998) also emphasise that motivational factors are crucial to the initiation, perseverance, and monitoring of self-directed learning.

Readiness for SDL exists along a continuum and is present in all individuals to some extent. Self-directed learning readiness is defined as "the degree the individual possesses the attitudes, abilities and personality characteristics necessary for self-directed learning" (Wiley, 1983: 78). The instrument most widely used in educational research to measure SDL readiness is Guglielmino's (1978) Self-directed Learning Readiness Scale (SDLRS), while more recent instruments include Fisher *et al.*'s (2001) Self-Directed Learning Readiness Scale and Williamson's (2007) Self-Rating Scale of Self-Directed Learning (SRSSDL). For the purposes of this study the SRSSDL (Williamson, 2007) was used to determine how students rate their own self-directedness in learning.

2. CONTEXT OF THE STUDY

With the implementation of Outcomes-Based Education (OBE) in South Africa, the emphasis in teaching shifted from a teacher-centred to a learner-centred instructional approach (DoE, 1997: 30). The learner-centred teaching approach of OBE is based on the social constructivist theory, which advocates the fundamental acceptance that people construct knowledge via interaction between their existing knowledge and beliefs and new ideas or situations within a social environment or milieu (Richardson, 1997: 3; Hill and Solem, 1999: 102). Constructivist-based learning

environments are thus characterised by problem-solving activities, the provision of stimulating learning environments, cooperative learning, promotion of learning through exploration, and the use of reliable assessment methods (Roblyer *et al.*, 1997: 72; Abdal-Haqq, 1998: 1). The constructivist approach therefore enables learners to manage their own learning and to develop meta-cognitive skills in the process (Ram, 1996: 89). As indicated by Prawat and Floden (1994: 47), the challenge for the teacher lies in creating the right kind of balance between honouring the individual learner's own search for meaning during the learning process and facilitating the intellectual construction of meaning within a group. This will encourage active and self-directed learning as well as a lifelong learning attitude. Grevenson and Spencer (2005: 348) argue that learners should experience more control over their learning process and be encouraged to be educationally self-managing as this will encourage them to continue lifelong learning beyond educational institutions.

Outcomes-Based Education (OBE) strives to enable all learners to attain their maximum learning potential in view of the Learning Outcomes to be achieved at the end of the education process. The National Curriculum Statement (NCS) builds its Learning Outcomes on the Critical and Developmental Outcomes that were inspired by the Constitution and developed *via* a democratic process. The critical cross-curricular outcomes require of students to be able to identify and solve problems, make decisions using critical and creative thinking, work effectively as members of a team, critically evaluate information, communicate effectively using various modes, use science and technology effectively, act in a responsible manner towards the environment and health of others, and demonstrate an understanding of the world as a set of related systems by recognising that problem-solving contexts do not exist in isolation. The developmental outcomes require of students to be able to reflect on and explore a variety of strategies to study more effectively, participate as responsible citizens in the life of local, national and global communities, be culturally and aesthetically sensitive across a range of social contexts, explore education and career opportunities, and develop entrepreneurial skills (DoE, 1997: 37).

In the review of the literature within the South African context it is evident that the majority of the schools in South Africa still have a long way to go in developing self-directed lifelong learners. Some teachers still use direct instructional approaches in their classrooms and are proclaimed as the "authority" in the classroom and the sole provider of information to learners. Research done by Rambuda and Frazer (2004), Grösser and De Waal (2006: 27), De Waal and Grösser (2009) and Beets (2007: 268) confirm that some teachers still focus strongly on teacher-centred instructional approaches in their classrooms. However, this does not imply that classroom teachers never implement any learner-centred instructional approaches. In the study of De Waal and Grösser (2009) there is evidence that different instructional strategies and methods are implemented in the classroom whereby learners are expected to learn in an autonomous and self-directed manner. In addition, outcomes-based education requires of teachers to continuously implement a variety of assessment methods in the classroom in order to assist learners in self-monitoring their learning.

As far as education, training and lifelong learning are concerned, Universities have a vital role in responding to the challenges of society, especially when there is ample

evidence of resistance to self-direction in student learning (Hiemstra and Brockett 1994: 91). Both learners and educators must possess a clear understanding of the concept of self-directed learning and select the appropriate teaching and learning strategies to facilitate and enhance learners' abilities in becoming self-directed during learning, including the ability to monitor and apply self-assessment (Norman 1999). The question pertinent to this study is how do first- and fourth-year teacher trainees rate their own self-directedness in learning?

3. Purpose of the study

The purpose of this study was to determine teacher trainees' perceived level of self-directedness in learning using the Self-Rating Scale of Self-Directed Learning (SRSSDL) developed by Swapna Naskar Williamson in 2007. A secondary purpose of the study was to analyse and deploy differences in perceived self-directedness between two different teacher trainee year levels, gender and academic performance. The implications of the results for lecturers involved in teacher training are discussed.

4. Research methods

An empirical survey was selected as the method for this research. A survey is particularly suitable in quantitative research for the purpose of collecting data by means of a questionnaire (in this case the SRSSDL) regarding respondents' personal views and opinions in order to determine the particular status of a phenomenon in relation to the research problem (Cresswell, 2009: 145).

5. Participants

The participants consisted of 702 first- and fourth-year undergraduate Baccalaureus Educationis (BEd) and PGCE teacher trainees at the North-West University in South Africa during 2009. The demographic background of the participants is as follows: 558 (79.4%) females and 144 (20.6%) males; 428 (60.9%) first-year BEd students, 215 (30.6%) fourth-year BEd students and 59 (8.5%) Postgraduate Certificate in Education (PGCE) students.

The respondents completed the questionnaire three weeks after the commencement of the first semester of 2009. The first-year BEd students assessed their perceptions regarding their levels of self-directedness in learning within the context of their learning experiences at school level. By contrast, the fourth-year BEd students and PGCE students based their perceptions of their self-directedness on the grounds of three years of undergraduate study at university. These two groups of respondents were thus educated in different education systems by means of a variety of teaching and learning approaches and strategies.

6. INSTRUMENTATION

For the purpose of this study the Self-Rating Scale for Self-Directedness in Learning (SRSSDL) developed by Williamson (2007: 73) was used to measure teacher trainees' self-directedness in learning. The SRSSDL is a self-rate instrument containing 60 items. Twelve items are categorised under 5 broad areas of Self-Directed Learning, namely awareness, learning strategies, learning activities, evaluation and interpersonal skills. Responses for each item are rated by using a five point Likert-type scale: 1=never; 2=seldom; 3=sometimes; 4=often; 5=always. Respondents with high scores indicate a high level of self-directedness in learning. The following scoring ranges of the grand total are used to identify the level of self-directedness in learning, namely low (60-140); medium (141-220) and high (221-300). Williamson (2007: 73) used Cronbach's coefficient alpha to compute the internal consistency. The computed coefficient alpha in all five areas of self-directed learning (awareness=.79; learning strategies=.73; learning activities=.71; evaluation=.71 and interpersonal skills=.71) indicates sufficient correlation (Williamson, 2007: 74). For establishing the construct validity a known-groups technique was used. A purposive convenience sampling technique was used to select the study subjects comprising 15 first- and 15 fourth-year undergraduate nursing students aged between 20 and 25 years who were willing to participate.

For the purpose of this research, the SRSSDL was translated into Afrikaans to cater to the majority of the participants whose home language is Afrikaans. To ensure that the meaning of concepts and statements in the Afrikaans questionnaire corresponded to the original, two educationists and a senior lecturer in Afrikaans education (North-West University) assisted the researcher with the translation. For the purpose of this research, the participants completed the following information on the SRSSDL: sex, year level and group, average academic performance for the previous year. The internal reliability for this study supported the reliability of the SRSSDL instrument developed by Williamson (2007). The computed coefficient alpha in all five areas of self-directed learning for this study were: awareness=.70; learning strategies=.71; learning activities=.75; evaluation=.82, and interpersonal skills=.80. The computed coefficient alpha for the five areas indicates that the SRSSDL instrument is reliable.

7. STATISTICAL ANALYSIS

Descriptive statistical techniques were applied to organise, analyse and interpret the quantitative data. The following statistical procedures were used:

- The calculation of Cronbach's alpha coefficient to determine the reliability of the various subsections of the SRSSDL.
- Statistical procedures involved the use of descriptive statistics such as frequencies, means and standard deviation scores to represent a particular position of recorded response.
- The statistical procedure involved the calculation of the practical significance (effect size) of differences in means of different groups from the population. Practical significance provides an indication whether the differences are large enough to have an effect in practice (Ellis and Steyn, 2003: 1-6).

8. Data analysis

The data are presented according to the areas of self-directed learning (awareness, learning strategies, learning activities, evaluation and interpersonal skills) to reflect the responses of the participants for the purpose of related analysis and interpretation.

The quantitative data are presented in table format with an indication of the numerical scores according to related areas of SRSSDL to provide an overview of these particular groupings of data. Each table of scores is followed by an analytical description and interpretation of the data by means of descriptive statistical procedures.

9. Results and discussion

Self-directedness of teacher trainees

The average scores of the different year groups for their perceived Self-Directedness in Learning are on the margin between high moderate to low high (see Table 1). Williamson (2007) used the following scoring ranges: 60 to 140 as low; 141 to 220 as moderate and 221 to 300 as high to distinguish between the different levels of self-directedness in learning. An interesting result of this study is the fact that there is not a great difference between first- and fourth-year teacher trainees' perceptions of their Self-Directedness in Learning (see Table 2). In all the different subsections of SRSSDL the means of the different year level groups are nearly similar. The two subsections of SRSSDL, namely awareness of self-directed learning (mean=3.92) and interpersonal skills in SDL (mean=3.82), received the highest ratings from participants, whereas learning strategies, evaluation and learning activities produced means of respectively 3.61, 3.62 and 3.64.

Table 1: Average score of the different year group levels

Year group	Average total score (300)
BEd 1st year (n=428)	217
BEd 4th year (n=215)	221
PGCE 4th year (n=59)	224

Table 2: Mean differences between the different year groups

Year groups	Awareness	Learning strategies	Learning activities	Assessment	Interpersonal skills
BEd 1st year	3.90	3.62	3.66	3.68	3.79
BEd 4th year	3.95	3.57	3.58	3.53	3.83
PGCE 4th year	3.91	3.73	3.59	3.60	3.92
TOTAL	3.92	3.61	3.64	3.62	3.82

Regarding perceived self-directedness one would expect that after four years at university the fourth-year students would achieve a higher average score

in comparison to the first-year trainees. In contrast to the results of this study, Williamson (2007: 74) found that fourth-year nursing students' average scores (214) for perceived self-directedness are apparently higher than those of first-year students (160). Research completed by McCauley and McClelland (2004: 26) indicates that first- and fourth-year undergraduate physics students also perceive little or no difference in their levels of self-directedness in learning. Results of this same study further indicate that the students' levels of self-directedness varied between average and below average.

One of the possible reasons for the high SRSSDL average scores of the first-year respondents in this study is the fact that these respondents are part of the first group of learners who were educated within the Outcomes-Based Education model from Grades 1 to 12. Even though literature indicates that many South African school teachers are prone to teach within the traditional direct teaching model in their classrooms, in recent years they have been challenged to make an important paradigm shift in their classroom teaching from teacher-centred to learner-centred instructional approaches. This paradigm shift in teaching and learning emphasises active participation of learners in teaching and learning activities which necessitate teachers to restructure their instructional strategies in terms of the New Curriculum Statement. The implementation of a learner-centred teaching-learning approach together with continuous formative assessment by the teachers in the various learning areas and subject fields can contribute to the fact that learners perceive their levels of self-directed learning to be higher during learning.

Another possible reason for the high average score of first-year respondents' perceived self-directedness is the fact that, on the grounds of their academic results which ensured their university admission, these students had a positive yet unrealistic sense of their own learning autonomy. These respondents may not have been exposed to self-directed learning environments in the classroom to the same extent as were the fourth-year university respondents. At the time the questionnaire was completed, the first-year students had only attended three weeks of classes which could have contributed to the fact that these respondents completed the questionnaire within the context of their previous learning experiences at school level, thus in a subjective manner regarding their levels of self-directedness.

At the time of the present research, the first-year respondents were in transition from high school to university. Their overall experiences of university and related academic activities in the months thereafter were likely to require much more self-direction than were pertinent during their high-school years, and might lead to a change in their perceptions of the self-directness in learning and a decrease in their SRSSDL scores. Additional research is required to determine which, if any, of the reasons cited are driving the observed similarities in first- and fourth-year students SRSSDL scores. Therefore the researcher is in the process of planning a longitudinal study where first-year students' perceptions of their self-directedness in learning will be monitored and again tested at the beginning of their second year of university study.

10. Areas of self-directedness

Table 3 details the mean and standard deviations for the 5 subsections (12 items per subsection) of the SRSSDL. The items of each subsection are ranked according to the mean from highest to lowest.

Awareness

Mean scores for the items in this subsection range from 4.63 to 3.32. The highest scoring items indicated by the respondents include "I am responsible for my own learning" (mean=4.63), "I have a break during long periods of work" (mean=4.28) and "I am responsible for identifying my areas of deficit" (mean=4.10). An interesting contradiction is that, although on average the respondents indicated that they accept responsibility for their own learning, the following items rate the lowest mean averages in the subsection: "I consider teachers as facilitators of learning rather than providing information" (mean=3.32) and "I feel that I am learning despite not being instructed by a lecturer" (mean=3.35). These scores prove that on average the respondents still expect their lecturers and teachers to explain subject content to them, and to make decisions on their behalf. However, the results do indicate that the respondents appear to have a relatively high awareness of self-directed learning which is promising when lecturers plan to implement SDL in their classes.

Learning strategies

For the subsection learning strategies, two items, namely "I am able to decide my own learning strategy" (mean=4.15) and "My inner drive directs me towards further development and improvement in my learning" (mean=3.95) rated the highest. The respondents appear to have a strong desire to select their own learning strategies, to solve problems and to participate with other students as indicated by the high mean values for a substantial number of items in this subsection. The items "I find role play is a useful method for complex learning" (mean=3.18) and "I find simulation in teaching and learning useful" (mean=3.24) rated the lowest in terms of mean score in this subsection. The lower mean scores of some items indicate that the respondents do not prefer to be involved with some of the learner-centred instructional strategies such as role-play, simulation and case-studies. This negative response can indicate either that the respondents are not exposed to these learning strategies during lectures or that the respondents are resistant to the higher demands required by participation in these types of learning activities.

Learning activities

For the subsection learning activities the items "I prefer to take any break in between any learning task" (mean=4.23) and "I keep an open mind to others' point of view" (mean=4.14) rated the highest. The items that received relative high mean scores, for example taking part in group discussions, peer coaching and interactive lecturers, indicate that respondents want to work with fellow students and lecturers in achieving the prescribed outcomes. In this subsection items with the lowest

mean scores include "I enjoy exploring information beyond the prescribed course objectives" (mean=2.97) and "I raise relevant questions in teaching-learning sessions" (mean=3.13). Respondents appear to be less motivated to take responsibility for their own learning and do not seem to be willing to do further reading regarding themes and topics that are discussed during lectures or even to thoroughly prepare for contact sessions. Sadly this is an indication that lecturer and students rigorously follow the prescribed syllabuses and that some students still want the lecturers to provide them with all the necessary information during lectures.

Evaluation (assessment)

For the subsection *evaluation* (assessment) the mean scores for all the items range between 3.30 and 4.05. The highest ranked items are "I am able to identify my areas of strength and weakness" (mean=4.05) and "I find both success and failure inspire me to further learning" (mean=3.85). When referring to the other items that received high mean scores, it appears that the respondents are of the opinion that they are able to monitor their own learning and are inspired by other students' success.

The lowest ranked items in this subsection include "I appreciate when my work can be peer reviewed" (mean=3.30) and "I self-assess before I get feedback from instructors" (mean=3.46). Although in this subsection respondents indicated that they enjoy working and learning with other students, it is interesting that they do not want or like fellow students to assess their work. It seems that the respondents do not trust fellow students with the assessment of their work and that they still prefer the lecturer to assess the work they complete. In addition, it is evident that the respondents do not participate in self-assessment before they receive feedback from their lecturers.

Interpersonal skills

For the subsection *interpersonal skills* the mean scores for all the items range between 4.05 and 3.08. The highest ranked items are "I maintain good interpersonal relationships with others" (mean=4.05), "I am able to identify my role within a group" (mean=3.91) and "I am able to express my ideas effectively in writing" (mean=3.91). The respondents appear to have strong interpersonal skills indicated by the high mean scores for a substantial number of the associated items. Possible reason for this is that lecturers and teachers within an OBE system are more willing to plan and design cooperative learning environments in their classrooms. The two items that received the lowest scoring are "I find it challenging to pursue learning in a culturally diverse milieu" (mean=3.08) and "I intend to learn more about other cultures and languages I am frequently exposed to" (mean=3.30). This can be ascribed to the fact that students have difficulty working in culturally diverse environments. This is understandable considering that the majority of the respondents in this study are white Afrikaans-speaking students.

Table 3: Subsections of the SRSSDL

Rank	Item	AWARENESS	Mean	Std Dev
1	10	I am responsible for my own learning.	4.63	0.59
2	14	I have a break during long periods of work.	4.28	0.85
3	11	I am responsible for identifying my areas of deficit.	4.10	0.74
4	7	I am able to select the best method for my own learning.	4.07	0.79
5	12	I am able to maintain self-motivation.	4.06	0.76
6	13	I am able to plan and set my learning goals.	4.01	0.78
7	6	I identify my own learning needs.	3.91	0.79
8	9	I keep up to date on different learning resources available.	3.83	1.01
9	15	I need to keep my learning routine separate from my other commitments.	3.77	0.91
10	16	I relate my experience with new information.	3.6	0.77
11	17	I feel that I am learning despite not being instructed by a lecturer.	3.35	0.98
12	8	I consider teachers as facilitators of learning rather than providing information only.	3.32	0.95
1	29	I am able to decide my own learning strategy.	4.15	0.81
2	24	My inner drive directs me towards further development and improvement in my learning.	3.95	0.79
3	25	I regard problems as challenges.	3.76	0.89
4	18	I participate in group discussions.	3.73	0.92
5	19	I find peer coaching effective.	3.72	0.91
6	21	I find interactive teaching and learning sessions more effective than just listening to lecturers.	3.68	0.96
7	27	I find concept mapping is an effective method of learning.	3.5	1.09
8	28	I find modern educational interactive technology enhances my learning process.	3.5	0.96
9	23	I find learning from case studies useful.	3.44	0.91
10	26	I arrange my self-learning routine in such a way that it helps develop a permanent learning culture in my life.	3.42	0.84
11	22	I find simulation in teaching and learning useful.	3.24	0.94
12	20	I find "role play" is a useful method for complex learning.	3.18	0.95
1	41	I prefer to take any break in between any learning task.	4.23	0.86
2	40	I keep an open mind to others' point of view.	4.14	0.73
3	31	I identify the important points when reading a chapter or an article.	3.92	0.91
4	33	I am able to use information technology effectively.	3.79	0.81

Rank	Item	AWARENESS	Mean	Std Dev
5	37	I am able to relate knowledge with practice.	3.75	0.81
6	35	I keep annotated notes or a summary of all my ideas, reflections and new learning.	3.71	0.93
7	39	I am able to analyse and critically reflect on new ideas, information or any learning experiences.	3.58	0.80
8	34	My concentration intensifies and I become more attentive when I read a complex study content.	3.47	0.91
9	30	I rehearse and revise new lessons.	3.42	0.98
10	32	I use concept mapping/outlining as a useful method of comprehending a wide range of information.	3.39	1.05
11	38	I raise relevant question(s) in teaching-learning sessions.	3.13	0.95
12	36	I enjoy exploring information beyond the prescribed course objectives.	2.97	1.00
1	45	I am able to identify my areas of strength and weakness.	4.05	0.79
2	47	I find both success and failure inspire me to further learning.	3.85	0.86
3	44	I am able to monitor my learning progress.	3.77	0.79
4	53	I am inspired by others' success.	3.72	0.93
5	52	I find new learning challenging.	3.69	0.82
6	50	I check my portfolio to review my progress.	3.61	0.90
7	48	I value criticism as the basis of bringing improvement to my learning.	3.58	0.86
8	49	I monitor whether I have accomplished my learning goals.	3.49	0.90
9	43	I identify the areas for further development in whatever I have accomplished.	3.48	0.78
10	51	I review and reflect my learning activities.	3.47	0.86
11	42	I self-assess before I get feedback from instructors.	3.46	0.91
12	46	I appreciate when my work can be peer reviewed.	3.30	1.02
1	59	I maintain good interpersonal relationships with others.	4.05	0.79
2	55	I am able to identify my role within a group.	3.91	0.78
3	63	I am able to express my ideas effectively in writing.	3.91	0.77
4	64	I am able to express my views freely.	3.90	0.83
5	61	I am successful in communicating verbally.	3.84	0.93
6	58	I need to share information with others.	3.81	0.84
7	56	My interaction with others helps me to develop the insight to plan for further reading.	3.80	0.78
8	62	I identify the need for interdisciplinary links for maintaining social harmony.	3.8	0.78

Rank	Item	AWARENESS	Mean	Std Dev
9	60	I find it easy to work in collaboration with others.	3.78	1.02
10	57	I make use of any opportunities I come across.	3.76	0.83
11	54	I intend to learn more about other cultures and languages I am frequently exposed to.	3.30	1.01
12	65	I find it challenging to pursue learning in a culturally diverse milieu.	3.08	0.92

11. Gender

The research indicates no significant difference between the perceptions of male and female respondents in the different groups regarding their perceived self-directedness in learning (see Table 4). These results correlate positively with the findings of McCauley and McClelland (2004), Hoban and Sersland (2000) and Reio and Davis (2005: 44) whose research was performed within a different context.

Table 4: Practical significance (effect size) of the different subsections of SRSSDL in relation to gender

Questionnaire		Gender				
Five broad areas	**Year groups**	**Male**		**Female**		**Total**
		Mean	**SD**	**Mean**	**SD**	**Effect size (d)**
AWARENESS (Questions 6-17)	BEd (1st year)	3.82	0.40	3.90	0.39	-0.25*
	BEd (4th year)	3,89	0.36	3.96	0.41	0.15
	PGCE (4th year)	3.98	0.36	3.89	0.35	0.22
	TOTAL	3.85	0.39	3.93	0.39	-0.20
LEARNING STRATEGIES (Questions 18-29)	BEd (1st year)	3.60	0.42	3.63	0.455	-0.06.
	BEd (4th year)	3.54	0.44	3.58	0.46	-0.07
	PGCE (4th year)	3.68	0.36	3.74	0.40	0.13
	TOTAL	3.59	0.42	3.62	0.45	0.06
LEARNING ACTIVITIES (Questions 30-41)	BEd (1st year)	3.61	0.46	3.68	0.46	-0.14
	BEd (4th year)	3.55	0.46	3.60	0.49	0.04
	PGCE (4th year)	3.6	0.29	3.58	0.39	0.04
	TOTAL	3.59	0.45	3.65	0.47	-0.11
EVALUATION (Questions 42-53)	BEd (1st year)	3.62	0.44	3.70	0.51	-0.15
	BEd (4th year)	3.43	0.48	3.53	0.56	-0.17
	PGCE (4th year)	3.75	0.39	3.58	0.36	0.45*
	TOTAL	3.58	0.46	3.63	0.52	0.10
INTERPERSONAL SKILLS (Questions 54-65)	BEd (1st year)	3.74	0.46	3.81	0.54	-0.12
	BEd (4th year)	3.72	0.51	3.85	0.49	-0.25*
	PGCE (4th year)	3.92	0.43	3.92	0.39	0.01
	TOTAL	3.75	0.47	3.83	0.51	-0.16

(≤0.2 = small effect; *>0.2-<0.8 = medium effect; and **≥ 0.8 large effect)

12. Academic performance of participants

With the completion of the SRSSDL the participants had to indicate their average academic performance for the modules completed during the previous academic year within the following five categories: <50%; 51%-60%; 61-70%; 71%-80%; 81%>. This information is relevant in that the researcher has to determine whether or not those respondents who had performed well in their academic modules perceive themselves to be self-directed learners during the time of this study. The SRSSDL results of the respondents in the four above average academic categories are compared to those of the respondents with an average academic score below 50% (see Table 5). The results indicate that the students' perceptions of their self-directedness in learning are strongly related to their academic performances. From Table 5 it is clear that in most cases the higher the students' academic performance, the higher their level of self-directedness in learning. It is pleasing to note that the majority of the students, regardless of their academic results, have a strong desire to be involved in SDL. McCauley and McClelland (2004: 26) also indicate that students who earn a higher grade average are more likely to have higher levels of readiness for self-direction in learning.

Table 5: Practical significance (effect size) of the subsections of SRSSDL in relation to students' academic results

Five broad areas	Academic results	51%-60%	61%-70%	71%-80%	81%>
AWARENESS (Questions 6-17)	**<50%**	-0.27**			
	<50%		0.52**		
	<50%			0.97***	
	<50%				-1.09***
LEARNING STRATEGIES (Questions 18-29)	**<50%**	-0.44**			
	<50%		-0.64**		
	<50%			-0.74**	
	<50%				-0.72**
LEARNING ACTIVITIES (Questions 30-41)	**<50%**	-0.45**			
	<50%		-0.66*		
	<50%			-0.74**	
	<50%				0.76**
ASSESSMENT (Questions 42-53)	**<50%**	-0.07*			
	<50%		-0.30**		
	<50%			-0.36**	
	<50%				-0.60**
INTERPERSONAL SKILLS (Questions 54-65)	**<50%**	0.09*			
	<50%		0.44*		
	<50%			0.72**	
	<50%				-0.74**

Five broad areas	Academic results	51%-60%	61%-70%	71%-80%	81%>
TOTAL	<50%	-0.33**			
	<50%		-0.62**		
	<50%			-0.83***	
	<50%				0.98***

(*≤0.2 = small effect; **>0.2-<0.8 = medium effect; and ***≥ 0.8 large effect**)

13. Implications for improvement in practice

Although the majority of the respondents rate themselves high in all the subsections of the SRSSDL, it does not necessarily equal competence in the application of self-directed learning in practice. However, it is noticeable that the participants embrace the importance of the application of self-directedness in learning, and therefore lecturers and teachers have to become aware of and support this opportunity to promote SDL in their classrooms and lecture halls. There are a number of implications for lecturers involved in teacher training to provide their students with the necessary assistance and support in becoming self-directed learners.

It is essential that lecturers perceive the importance of self-directed learning and that they will encourage students to question and seek sources of information and knowledge themselves. In order to help students become self-directed learners, lecturers have to place a greater emphasis on the creation of their own knowledge. In other words, teaching students how to actively learn and source relevant information is as important as teaching the subject matter. As suggested by the Staged SDL model (see Crow, 1991), to successfully implement SDL in the classroom and lecture halls, it is important that teachers and lecturers first determine the level of SDL already eminent in their students' academic behaviour. Thereafter they need to cater to the needs of the dependent learner, gradually changing their teaching style, from coach to guide to facilitator and finally to consultant.

Lecturers must include multiple learning experiences that challenge students to develop self-directing skills during the presentation or contact sessions of different modules. The implementation of a variety of instructional strategies such as inquiry-based learning, problem-based learning, cooperative learning, collaborative learning, resource-based learning and peer teaching is essential if a lecturer wants to ensure that the students develop the ability to use these strategies on their own. Typical learning activities that complement learner-centred instructional strategies include learning projects, portfolios, discussions, case studies, role-play, fieldwork, group assignments, simulation and debates.

Another important factor when a lecturer is intent on assisting students to become self-directed learners is to not only focus on assessment *for* (formative assessment) and *of* (summative assessment) learning, but to emphasise assessment during the process of learning as it occurs during teacher training. Earl and Katz (2006) refer to assessment *as* learning as a process of developing and supporting metacognition for students. It therefore focuses on the role of the student as the critical connector

between assessment and learning. When students are active, engaged, and critical assessors, they make sense of information, relate it to prior knowledge, and use it for new learning. Lecturers have to provide opportunities for students to self-monitor, revise work, and reflect on their own thinking and learning processes. The feedback from the monitoring can be used to make adjustments, adaptations, and even major changes in what they understand. It requires that lecturers implement assessment strategies and methods that help students develop, practise, and become comfortable with reflection and with critical analysis of their own learning. An important skill for self-directed learners is being able to accurately assess their own performance. Typical assessment strategies in the different modules will include self-assessment, peer assessment and group assessment. Where lecturers assess students' work, it is important that the assessment measures not only assign grades, but are also effective tools to promote learning. It is thus important to give necessary feedback and comments so that students can learn from their mistakes.

For lecturers to assist students to become more self-directed in learning, it is necessary for students to become engaged in a curriculum that allows this to happen. To promote and encourage self-direction in learning, an extensive revision of the current curriculum and time schedule for the training teachers are necessary. It is necessary that a "fixed agenda" curriculum in teacher training make way for an "open system" curriculum (see Prawat, 1992) in which the number of themes in the different modules are reduced, and longer periods of time are allocated to each theme in order to support an approach of learning in depth. Therefore, the different modules in the curriculum must provide opportunities for students to select the way mastery of content and subject matter should be demonstrated and investigated and then internalised. Lecturers must ensure that students are involved in the selection of themes, development of learning outcomes, search for relevant learning material as well as determining the assessment strategies and methods (see Hiemstra and Brockett, 1994: 91). The lecturer should always be guided by the module outcomes and may, if necessary, include other themes or omit certain themes in order to ensure that the set outcomes are realised in a meaningful and self-directed manner.

Lecturers also have to use *technologies* such as internet, world-wide web, web-based learning, e-mails, online publication, and so on innovatively to foster students' self-directed and independent learning. In most South African universities there are innovative technologies readily available that can assist in providing powerful self-directed learning environments in teacher education. Some of the newer online learning environments, according to Borko *et al*. (2009), provide a collection of digital tools that offer real-time participation in an educational event as well as easy access to resources such as course syllabus, assignments, reading materials, and links to outside sources; communication through notice boards, chat rooms, and threaded discussions. The use of innovative technologies can help to create multiple learning sites to assist in building students' competence to handle diverse situations, building their confidence to utilise multiple learning experiences to promote their conceptual understanding of matters and to work independently in achieving learning outcomes.

14. Conclusion

The main purpose of this study was to explore how a group of teacher trainees view their own levels of self-directedness in learning. The findings of the research are not intended to be generalised across the spectrum of teacher education in South Africa. However, the findings might provide lecturers in teacher education with insights regarding the self-perception of teacher trainees with respect to their self-directedness in learning, as well as different guidelines that can be implemented in the training modules to help foster SDL. The effective implementation and fostering of self-directed learning at university level might also motivate and assist teacher trainees to better educate within the outcomes-based education and training approach at school level.

The research results indicate that the respondents in the different year levels generally hold positive perceptions regarding their own self-directedness in learning. It appears that these respondents are willing to take greater responsibility for their own learning within an organised self-directed teaching-learning environment. These results create a window of opportunity for lecturers involved in teacher training to actively focus on instructional strategies that will assist students to become self-directed learners.

Finally, the findings also indicate that there is no significant difference between genders concerning their perceptions of their own self-directedness in learning. A positive correlation between the respondents' perceptions of their levels of self-directedness and their academic results was indicated which only emphasises the importance of self-directedness to ensure academic success.

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Self-regulated learning: a case study in fashion design at a university of technology

Francina C. Venter
Central University of Technology, Free State
ventern@cut.ac.za
&
J.H. van Schoor
University of the Free State
vschoorj.rd@ufs.ac.za

1. INTRODUCTION

In an attempt to support fashion students to become self-regulated learners, the researcher conducted a qualitative study on the role of the lecturer in the fashion students' development of self-regulated learning (SRL) competencies. Unstructured interviews with three lecturers in fashion design were conducted as a way of obtaining a clearer understanding of the concepts of SRL, modelling and direct instruction of SRL strategies such as goal-setting, time management and resource management, as well as reflection of SRL. Findings indicated that fashion lecturers do not have a clear understanding of the concept of self-regulated learning. They effectively model the mentioned strategies, but do not involve students sufficiently in the decision-making process; therefore students do not learn and practice SRL. Formal and informal assessments are well-structured but lecturers do not fully perceive reflection as a strategy that operates throughout all the phases of SRL. It is recommended that the learning environment be adapted for fashion students to become capable of setting goals, planning, seeking help from others and deploying strategies in order to be successful academically and in the fashion industry.

The Higher Education environment in South-Africa is in a transformation process where students from environmentally deprived communities must be assisted to be successful learners. It is therefore imperative that innovative methods, such as problem-based teaching and learning be followed in order to improve quality and success in Higher Education (Van Grinsven and Harm, 2006: 88). Problem-based learning environments give students a better sense of how to use and apply SRL strategies (Sungur and Tekkaya, 2006: 307-308).

Self-regulation is associated with success in the academic and corporate environment (Boekaerts, 1999: 446; Pintrich, 2000: 221-226; Zimmerman, 2002b: 64-72). Students learn best when they are self-regulated because then they are managers of their own learning processes: they set goals, are constantly monitoring their progress, and alter their learning strategies (Abdullah, 2001: 1).

Some educators believe that students will become self-regulated learners through teaching. Others argue that it is too late to teach post-school students how to become self-regulated learners. Pintrich (2000: 221-226) and Zimmerman (2002b: 64-72) are of the opinion that it is never too late to teach students how to become self-regulated learners. These SRL researchers believe that if educators weave self-regulation strategies into their teaching, for example to teach students to set goals and monitor themselves, students will absorb study material faster and thus save time. Grades among students can improve up to 30%. In their study on an analysis of learning environments, Van Grinsven and Harm (2006: 77-91) also found that students in SRL environments are more motivated to learn and more actively involved in their learning than those who study in more restrictive environments. For this reason, educators should help students to be strategic and to self-regulate themselves towards their academic goals.

Fashion design students, in particular, should be strategic and self-directive, because fashion designers need to keep abreast of the latest developments in this highly competitive industry. Many fashion design students will also be self-employed, and will therefore need to be skilled in all aspects of the creation process (Dias, 2008: 86).

The researcher is a third-year lecturer at the fashion department and her experience in class is that fashion students do not perform well academically, meaning that the average passing grade is between 50 and 56%. An average of 34% of the fashion students enrolled for the fashion course pass the course within the expected period of three years. In addition, fashion students find it difficult to cope with responsibilities due to a lack of skills in goal-setting, planning, and the deployment of strategies to reach their goals. Students do very little planning and seldom ask the lecturer or their fellow students for help in and outside the scheduled class time. In view of these problems the researcher realised that a new approach must be taken, and that the fashion lecturers need to incorporate a more extensive set of self-regulatory instructional strategies.

2. Purpose

This chapter reports on a study aimed at investigating whether fashion lecturers at a University of Technology weave self-regulated learning strategies into their teaching in order to enhance the students' intellectual and scholarly development. As SRL is such a broad concept, this paper reports mainly on specific strategies of SRL such as goal-setting, time management, resource management and reflection. For the purpose of this study, the researcher views these SLR strategies as vital strategies that could benefit fashion students. In addition, the chapter reflects on the fashion design lecturers' understanding of the concept of SRL, whether lecturers model and directly instruct the above strategies, and their administration of formal-informal and self-reflection strategies. Figure 1 outlines the specific strategies investigated in this study.
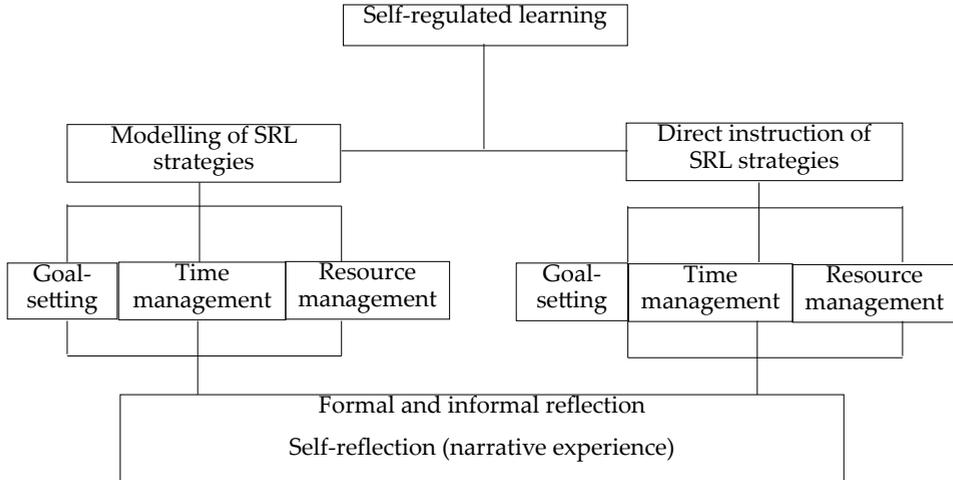
Figure 1: Model for self-regulated learning

3. RESEARCH DESIGN AND METHODOLOGY

The proposed study follows an interpretive-positivist paradigm with a qualitative research approach (Maree, 2007: 289). An intrinsic case study method was used as it deals with the uniqueness of a specific group of lecturers, namely the fashion design lecturers at a South African University of Technology in the Free State. The purposeful convenience sampling method was employed and three female lecturers who lecture NDF (National Diploma: Fashion) were selected. These lecturers were involved in the main modules of the NDF programme and their contact time with students varied between 11 and 21 hours per week. Conversational interviews with individuals were conducted. The interviews, which lasted between one and two hours, were audio-recorded and subsequently transcribed. Questions asked during the interview consisted of mainly open-ended questions, which were analysed qualitatively by means of content analysis. Claims of validity rest on the data collection and analysis techniques, therefore a combination of strategies, such as literature readings, participant observation, and semi-structured interviews were incorporated (Davies, 2007: 187-206). Typewritten transcriptions from the audio-recorded interviews were returned to the respondents for their approval before the data were analysed. Common themes in the data gathering were identified. Innovative and improved teaching that promotes SRL will now be discussed, followed by a comprehensive discussion of the results.

4. Students' development of self-regulation

To understand how self-regulatory skills become self-sustaining, social cognitive researchers (Zimmerman, 1995: 217-221; Schunk and Zimmerman, 1998: 359-382; Zimmerman, 2002a: 17-26) identify a three cyclical model involving forethought, performance, and self-reflection phases. The self-regulating process begins in the forethought phase where important activities such as goal-setting, time and resource management, and strategic planning take place. In the performance phase strategies to reach the goals set in the forethought phase are deployed. Within this phase activities are used to help the student become aware of his/her state of cognition, motivation, emotions, use of time and effort as well as the content of the task. The performance phase is followed by the self-reflection phase which includes students' judgments and evaluation regarding the execution of his/her task, comparing it to previously established criteria as well as general assessments about the task.

Many students fail to acquire self-regulatory skills on their own; therefore lecturers seek to achieve greater academic self-regulation through innovative and improved teaching that promotes SRL (Zimmerman and Martinez-Pons, 1988: 284-290 and 1990: 51-59; Hoover-Dempsey, Battiato, Walker, Reed, De Jog and Jones, 2001: 117; Zimmerman 2002a: 6-12).

5. Innovative and improved teaching that promotes SRL

Self-regulated learning is more likely to develop when lecturers provide support by means of several teaching methods such as modelling and the direct instruction (strategy instruction) of self-regulated strategies (see Figure 1).

6. Modelling of SRL

Modelling is the process of intentionally demonstrating and describing the component parts of a skill to a student, and to provide explicit information (Schunk and Zimmerman, 2003: 63). According to Gaskill and Woolfolk Hoy (2002: 183-185), Reynolds and Miller (2003: 7-9), Schraw and Brooks (2001: 7) and Schunk and Zimmerman (1998: 178-195), the task of effective modelling is to:

- Create a rationale for the new skill to be learned. The lecturer must explain to the students why the acquisition of this skill is important. Students must also be provided with an example of how, when and where this skill will be used. For example, a fashion lecturer in garment technology would explain the insertion of different kinds of zippers such as invisible, fly, open-end zippers and more specifically the purpose of each zipper.

- Model the entire procedure while the students observe. For example, demonstrating to the students how to insert a zipper. The first goal is to identify the appropriate zipper for the specific garment and fabric and then how to insert the zipper according to the correct method.

- ▪ Model component parts of the task. If the task can be broken into smaller parts, model each part, for instance each step of inserting a zipper.
- ▪ Allow the student to practise the steps under the guidance of the lecturer. For example, the student may practise the first step of inserting a zipper and receive feedback from the lecturer on each step before proceeding to the next.
- ▪ Allow the student to practise the entire procedure under the guidance of the lecturer; for example, the student inserts the zipper by doing all the steps by him-/herself.

The other teaching method, namely direct instruction (strategy instruction) of self-regulated strategies (see Figure 1), will now be discussed in more detail.

7. Direct instruction (strategy instruction) of SRL

Direct instruction is the process of explaining and incorporating activities regarding self-regulation strategies. For example, the lecturer explains to the students the characteristics of a strategy, such as how to set a goal. The lecturer also explains how the strategy is applied and how the strategy is used (Montalvo and Torres, 2004: 1-34). Paris and Winograd (2001: 9-14) and Boekaerts and Casscaller (2006: 199-210) propose that many students do not apply SRL strategies effectively without direct instruction. Schraw and Brooks (2001: 5) further postulate that strategy instruction is important because it is moderately to highly successful. Students usually benefit from such instruction. Strategy instruction appears to be most beneficial for low-achieving students. One reason may be that low-achievers know fewer strategies and therefore have more room for improvement. Programmes that combine more than one strategy suffice to cause a substantial change in learning. Strategy instruction programmes that emphasise the role of conditional knowledge are effective, as they enable students to determine when and where to use newly-acquired strategies.

Lecturers need to discuss different learning strategies in class: what the strategy is, how the strategy operates and when and why a strategy should be applied. Lecturers thus have to trigger the use of different self-regulated learning strategies (Boekaerts and Casscallar, 2006: 205). If lecturers go through the process of explaining and discussing strategies, students will become aware of their own learning strategies and then compare the strategy to other options. Students may realise that they have adopted a poor learning strategy and need to justify their own strategies (Paris and Winograd, 2001: 8-9). It is important to note that newly learned strategies do not readily transfer to new tasks; therefore lecturers must incorporate strategy instruction into their classrooms.

Butler and Winne (1995: 245-251) are of the opinion that students are often unaware of what they do not know and are unable to distinguish between important and unimportant information. Lecturers may help students by modelling and directly instructing (for example, how to highlight or summarise work) by asking specific questions on the content, and to prompt them to assess their own level of understanding (Paris and Winograd, 2001: 9-10). Reflection is another strategy that operates throughout all the phases of SRL.

8. Reflection and self-reflection (narrative experience)

Self-regulated learning may be promoted by reflection, recording and discussing evidence of personal growth. Assessment of growth is closely aligned with journals and conferences because these are *tools* for promoting reflection on progress and learning. The lecturer may easily implement a simple technique to promote SRL, such as record-keeping of goals achieved, grades received, progress made in learning, and behaviour management. Students who use these records will understand how periodic self-appraisal may lead to feelings of pride (Montalvo and Torres, 2004: 11-13). Boekaerts and Corno (2005: 209-212) argue that no one single instrument such as formal assessment, self-report in portfolios, checklists and informal feedback discussions is sufficient to capture what students think, feel and undertake in order to direct their learning and motivation.

The type of reflection may also have an effect on learning behaviour. Zimmerman (2000: 14-28) reports that self-reflection (narrative experience), in particular self-assessment of performance, may help students to develop SRL strategies. Students may be encouraged to self-reflect on their learning, by helping them to use internal and external feedback in order to judge to what extent goals are being met and whether strategies are affected. Students must be made aware of the importance of setting realistic and specific short-term goals. They must be provided with continuous opportunities for evaluating information. The level of goal achievement and the subject knowledge and effectiveness of the strategies being used should be emphasised.

Self-assessment of learning processes and outcomes is useful because it stimulates repair strategies, promotes monitoring of progress and feelings of self-efficacy. For example, students who write a single draft of paper because they postponed it until the last minute and then feel relieved simply that it was done, display poor strategies, failure to plan and have little sense of accomplishment or efficacy with the result (Paris and Winograd, 2001: 10-11).

Lecturers may review progress on reports and projects at the beginning, middle, and end of the activity so that the learning strategies may be reviewed and revised if necessary. At the beginning, students set short-term academic goals. They may ask themselves questions such as, when will I start, where will I start and how will I start. In the middle, students adopt learning strategies, such as time scheduling, asking questions and complying with target dates. Students ask themselves questions such as, am I accomplishing what I hoped to do, am I being distracted and is this taking more time than I thought. At the end, students evaluate how effective their strategies are in helping them to meet their goals and adjust strategies accordingly. Students may ask themselves questions such as, did I accomplish what I hoped to, did I become distracted and did I plan enough time to complete the task (Zimmerman and Kitsantas, 2001: 29-36).

Feedback should be corrective and help students to become aware of where they failed and how to correct problems (Montalvo and Torres, 2004: 1-34). Clifford (1991: 23-29) suggests that lecturers must teach students to think in terms of "constructive

failure". Everyone fails from time to time, but it is important to realise that it is the response to failure and not failure itself that is important.

In this study self-regulated learning is viewed from a social-cognitive perspective and the researcher knew that teaching methods such as modelling and direct instruction of self-regulated strategies can facilitate transition to self-regulation. In an attempt to determine whether lecturers model and directly instruct certain SRL strategies to the fashion design students, a qualitative research design was followed and results will now be discussed.

9. Results and discussion

In this section a short overview of the main findings of the study are discussed and recommendations given. Recommendations are stipulated according to several factors that have been identified and that can lead to effective SRL in the fashion course.

Understanding the concept of SRL is important for lecturers because they face complex and rarely straightforward problems and challenges. Boekaerts and Corno (2005: 199) suggest that there is no straightforward definition of SRL. For this study SRL is described as the process in which learners' self-initiated thoughts, behaviours and feelings are targeted in order to pursue valuable academic goals (Zimmerman and Schunk, 2001: 4-7). Self-regulated learning is therefore an academically effective form of learning which includes cognitive skills necessary to memorise and recall information as well as meta-cognitive skills that enable students to understand and monitor their cognitive processes. The learners set goals, monitor, control, regulate their behaviour, and reflect on their learning, while being guided by study guides or group work exercises (Zimmerman, 2002a: 64-70).

Statements from the participants on their understanding of the concept of SRL confirmed that SRL is perceived as the ability to set goals and to do time management. As the lecturer of third-year students states: "I think it means that students have to regulate their own time in order to know the theory and to be able to keep up with their due date, …".

All the participants jointly perceived that SRL is a self-directive process. They also indicated that "you have to do it yourself, and not let the lecturer keep reminding you to do your work". This is an indication that students must manage their own learning process. They seemed to be unaware of the fact that SRL is more than a self-directive process, which also includes learners' self-initiated thoughts, behaviour and feelings.

Explanations and encouragements about SLR strategy use may have an impact on students' strategic learning in various ways. If lecturers talk about SRL strategies it can make students aware of these strategies and, therefore, possibly enhance the use of these strategies (Schraw and Brooks, 2001: 5; Boekaerts and Casscallar, 2006: 205). Therefore, the researcher focused on the modelling and direct instruction (strategy instruction) of goal-setting, time management and resource management.

Goal-setting

Goal-setting may be defined as a person's skill to set a clearly defined objective (Locke and Latham, 2002: 708). Literature postulates that lecturers need to set clear and specific goals for students in the class because it makes tasks more manageable for students and helps them to observe their progress in a more reliable way (Linnenbrink and Pintrich, 2003: 121-124). Referring to the above statement, the participants were asked to respond to the following question: *Explain how you would model goal-setting in class?*

All the participants indicated that they regularly share and clarify the instructional goals they set for each class verbally and by means of their study guides. A study guide consists of a time planner for the year and lesson plans with specific outcomes for each week. As the first-year lecturer states: "I definitely use a lesson plan with specific outcomes and I always try to reach those goals at the end of the day". It is interesting to note that the first-year lecturer ensures that the study guide is in front of the student. Therefore, s/he does not only communicate goal-setting, but students may in fact follow it step by step. This could indicate that the participants model goal-setting in a structured manner by means of lesson plans. All the participants also indicated that they communicate goals by means of specific tasks and class activities.

Caraway, Tucker, Reinke and Hall (2003: 417-427) claim that if students set challenging goals for themselves they will more easily maintain high levels of commitment despite encountering obstacles or challenges. Thus, the following question was asked: *Do you give the students the opportunity to set their own goals?*

Participants reported that they less often give students the opportunity to set their own goals. The lecturer of second-year students indicated that she sets specific goals in class with the collaboration of the students. The lecturer of first-year students stated that she sets the main goal and within these parameters the students may choose their own specific goals. The researcher also observed that setting goals is difficult for students. For example, students often set goals such as "To pass all my subjects" or "I will work harder" or "I will get an A" but these are performance goals that do not emphasise conceptual understanding and deep learning.

This contradicts the literature which states that goals are most effective when set by the student, especially when these goals are mastery goals (complete knowledge) rather than performance goals (process measured by grades) (Ames, 1992: 327-348; Abdullah, 2001: 2; Schunk, 2005: 86). Thus, if the lecturer sets goals, behaviour is obedient rather than self-directed. Linnenbrink and Pintrich (2003: 121-124) also stated that student participation in goal-setting is a fundamental aspect of SRL. Students who engage in goal-setting use deeper cognitive strategies (elaboration and organisation), and deeper meta-cognitive strategies (goal-planning activities and self-reflection activities).

Practice is one of the most important aspects of learning in the classroom. Successful practice involves polishing goal-setting skills to make them smoother, more efficient and automatic (Brophy, 1999: 21). To establish whether lecturers directly instruct (give students the opportunity to participate and practise) their students how to set

their own goals, the following questions were asked. *Do you instruct your students on how to set goals? Do you provide the opportunities where students may practise and master the skill of goal setting?*

In response to the above questions all the participants indicated that they never thought about teaching their students how to set their own goals. The lecturer of third-year students reported that she is doing a study on motivation and she now realises the value of teaching her students the how, when and where of goal-setting. Time management is an essential component in reaching a goal.

Time management

Time management is essential in setting goals in order to overcome frustration, and to persist in task completion; therefore, the participants had to explain how they *model and directly instruct the concept of time-management in class.*

Individual interviews revealed that participants use time planners and try to remain on schedule in order to communicate and model time management to students. The lecturer of first-year students indicated that she frequently refers to the time planner: "Yes, definitely there are due dates and I do not take any excuses at all". The researcher observed that the Fashion department has very strict "due dates" and rules in order to foster time-management skills. Interviews further revealed that, in the second semester of the year, senior students work on "open" clothing ranges. Students must then set their own time schedules for completion of the garments. The majority of the participants indicated that they do not administer any activities in order to teach students the skill to manage their time. Participants also reported that time-management is second nature to them and they did not realise that students do not know how to manage their time. The lecturer of third-year students reported that it could help the students if time management is incorporated into the syllabus. The participants issue students with assignments to do on their own and they indicated that some but not all students complete their assignments on time. Participants also stressed the fact that students do struggle with time management. "They feel they have to plan too much. Students do not work like that and they struggle with due dates" (third-year lecturer). It appears that lecturers model good planning by using "tools" such as day planners, study guides, and reminders. Nevertheless, lecturers do not give the students sufficient opportunity to practise time management skills to enable them to become skilled in making choices and establishing priorities.

Paris and Winograd (2001: 9-11) postulate that lecturers should allow students to select their own activities and they should know how to limit the choices to prescribed activities. Students must also be guided to create favourable learning environments. This may be accomplished by helping them to develop volitional strategies. Lecturers who encourage SRL often challenge students to check the available time and assignments so that they may compile a schedule for homework and projects. In the following section resource management as a SRL strategy, also essential to setting goals, will be discussed.

NON-SOCIAL AND SOCIAL RESOURCE MANAGEMENT

In this study, non-social resources would include textbooks, internet, library and study material while social resources would include interaction with peers, lecturers and the industry. The researcher wanted to establish how lecturers manage resources. She therefore asked the following question: *How do you manage non-social resources in class?* All three lecturers use textbooks as the main source and model non-social resources in class by means of assignments in which students must use more than one type of resource, such as the library and internet.

According to social cognitive researchers (Zimmerman, 2002b: 64-70; Montalvo and Torres, 2004: 1-34), the social support by lecturers and peers will enhance SRL. Therefore, the researcher asked the following question to obtain information on the use of experts or peers in class: *Do you think it is important for students to interact with peers and other people when they need to solve a problem? Explain.*

The majority of the participants do not model the use of social resources, but were of the opinion that it would help students to interact with others in order to enhance learning. One respondent stated that she invites expertise from the industry to present lectures or demonstrations; therefore she models social interaction that enhances a person's cognition of self-regulation habits as postulated by Montalvo and Torres (2004: 1-34). The students' interaction with their lecturers, peers and the fashion industry plays a crucial role in the development of their self-regulatory skills.

Boekaerts and Casscallar (2006: 205) postulate that students develop the knowledge and skills that enhance SRL when they engage in activities that focus on meaningful aspects of learning, when they have the opportunity to make choices about their learning, to control challenges and when to collaborate with other students (Boekaerts and Casscallar, 2006: 205). Students have much to gain if they work in small groups on activities and assignments. Co-operative learning increases the students' interest, positive attitude, and creates the potential for cognitive and meta-cognitive benefits. During times when students work in small groups it is important that the lecturer acts as a facilitator to provide assistance when needed (Brophy, 1999: 27). For this reason, the participants were asked whether they provide students with the opportunity to practise non-social and social resource management in class.

The participants responded that they do not directly instruct students on how to manage resources. It must be mentioned though that the first-year students undergo a formal short course in the use of the library and the internet. The researcher further observed that the fashion students do not have formal study groups where they learn how to solve problems through joint interventions. All the participants make little to no use of social resources in their classes and do not promote it to students. The use of co-operative learning exercises, in and outside the classroom, is also very limited.

REFLECTION AND SELF-REFLECTION (NARRATIVE EXPERIENCE)

In this study reflection is divided into reflection and self-reflection. Reflection includes formal and informal reflection. Tools for formal reflection are tests and examinations where students are awarded a grade to indicate their performance. Tools for informal

reflection can be a class discussion while self-reflection can include self-report on feelings and perceptions.

Boekaerts and Corno (2005: 29-212) state: "Assessment structures and criteria given by the lecturer that focus on students' improvement could enhance SRL". Students need evidence that they are mastering knowledge and skills, therefore providing frequent, immediate and accurate feedback will help students to develop self-regulatory skills (Gaskill and Woolfolk Hoy, 2002: 183-206). On the one hand, feedback informs students that they are making progress and, on the other hand, it points out areas for improvement. "Good" assessment includes data from many sources, such as portfolios, co-operative work projects, practical work and not merely paper and pen tests. Different types of feedback have different influences on performance. Outcome feedback provides specific information about performance and is usually indicated by a grade. Cognitive feedback such as encoding, organisation elaboration, and inferencing (Shraw and Brooks, 2001: 9) appears to have a more valuable influence than performance feedback, therefore timelier and informative feedback to students improves learning (Brophy, 1999: 26). Consequently the lecturers were asked whether they teach the students the value of reflection in class.

The responses from the lecturers show that they assess the students formally by means of tests, projects, day-to-day assignments and practical assignments. The second-year lecturer reported that she incorporates students' meanings and feelings during informal feedback sessions. During reflection sessions the lecturers give a broad overview of the "good and bad" points and do not give students the opportunity to reflect on their own work.

Self-reflection of learning involves beliefs about what a student knows and what s/he does not understand. A feeling of knowing occurs when a student believes that s/he has some understanding of the material discussed in class (Schunk, 2005: 86). During the self-reflection phase of SRL, students must evaluate their performances with regard to criteria set by the lecturer and by themselves. Self-reflection makes them aware of the importance of setting realistic goals and to what extent goals are being met (Zimmerman, 2000: 14-28). In order for students to self-reflect on academic work more accurately, students must be trained in this regard (Brophy, 1999: 26). Practice trails may be set up. for example, in the practical class, students may evaluate a tailored jacket. The evaluation may be matched with the lecturers' evaluation, followed by a discussion.

When providing feedback on students' assignments, lecturers can ask questions that help students to critically reflect on their own learning. Not merely on the content but also on the strategy they used to process the content and solve the problem. This will help the students to refine their strategies (Brophy, 1999: 26). For that reason the following question was asked: *Do you teach your students the value of self-reflection in class? Explain.*

According to their responses to the question it appears that participants do not instruct or give students the opportunity to self-reflect in class. One of the lecturers indicated that if students self-reflect on, for instance, their own garments, they do it according to their own standards and not according to the lecturer's standards, thus

giving themselves 100%. Participants also indicated that it could help students to self-reflect before they solve a new problem.

To establish the habit of self-reflection, lecturers need to encourage students to critically reflect on their own work by keeping journals or by means of informal classroom discussions. Another method is to bring real-life problems into the classroom for students to work on. Students could also be allowed to collaborate with the lecturer in determining deadlines for projects and other regulations (Paris and Winograd, 2001: 11-13).

10. Conclusions and recommendations

Lecturers perceive the concept of SRL as the ability to understand and control one's learning environment, but they do not mention properties such as cognition, meta-cognition and motivation.

This study found that lecturers model goal-setting and time management through their communication with students in class and on structured study guides. The lecturers set the goals and do the time management. This coincides with literature which states that if goals are modelled through communication it has the potential to impact on students' learning in the sense that the lecturer and the students work towards the same goals. It must be noted that lectures do not involve students sufficiently in the decision-making process with regard to what is to be learned. Lecturers in the fashion course may provide students with opportunities to set challenging goals for themselves that will lead to higher levels of commitment (Carraway *et al.*, 2003: 417-427).

The majority of the participants do not model the use of social resources such as consulting a peer in class, although the researcher noticed that students in fashion design tend to seek help from peers. In the Western educational traditions, and in this study, this was considered "cheating". Findings in this study indicated that the lecturers could model social resources more effectively through co-operative work.

In practical classes lecturers effectively enhance students' self-regulatory development by proceeding through the recommended hierarchical levels of SRL. In this study the lecturers tend to model goal-setting and time management throughout the course but seldom give the students the opportunity to practise skills such as goal-setting and time management. Therefore the students do not learn how to set their own goals and do time management effectively. In the fashion design course due dates are of great importance and the lecturers reported that the students lack the skill to manage their time which leads to great frustration.

In addition, it was also found that lecturers do not directly instruct students how to manage available resources. There is little or no use of social resources in classes, such as group work or guest speakers from the industry. Explanations and encouragement about the use of self-regulated learning strategies may enhance students' learning. This study reveals that the lecturers do not teach students different learning strategies

or how to apply learning strategies, but suggests that students follow a separate course in the use of strategy.

According to the responses of the lecturers, formal reflection (tests, projects, practical work) are well managed, but lecturers do not fully perceive reflection as a strategy that operates throughout all the phases of SRL. Therefore, very little opportunity for self-reflection on own work is given by means of self-reflective journals and co-operative work. Thus, students do not learn the skill of self-questioning in order to become self-regulated learners.

According to findings, it could be concluded that lecturers in the fashion programme lecture mainly according to the traditional, teacher-centred practices that leads to surface learning. Lecturers shed light on the curriculum and they assist and support students in their attempts to master a certain skill focussing to a large extent on the content. It appears that students are cognitively, emotionally and socially dependent on their lecturers who formulate the learning goals.

The researcher identified several factors relating to the learning environment of fashion students that may lead to SRL among them:

- It is important that fashion lecturers understand the concept of SRL because teaching requires problem-solving and invention skills in order to assist fashion students to be successful learners. It is thus important that the fashion lecturers should be instructed in methods such as problem-based learning or co-operative innovation in which they work together to adapt, invent, evaluate, discuss and revise instruction that suits the fashion course.

- This study found that students need to be taught how to set their own goals and do time management. Student autonomy is an important condition for active SRL. The researcher strongly recommends that fashion lecturers provide students with more opportunities to set challenging goals for themselves, thus leading to higher levels of commitment (Carraway *et al*., 2003: 417-427). Students should not be given total freedom, but lecturers could establish a framework within which students are given choices. Exercises in class on time management and goal-setting may be incorporated in the classroom. This could be done from the first year, with a lot of support from the lecturers who then gradually withdraw their support throughout the second and third years until the students are capable of setting and reaching their own goals successfully in time.

- Results of this study showed that lecturers make little use of "social" resources such as group work exercises. They could incorporate more co-operative learning exercises in and outside the classroom. Co-operative learning has positive effects on SRL. Lecturers may by means of explanations and class discussions support students to develop strategic knowledge that may help them in the forethought, performance, and self-reflection phases of self-regulation.

- Direct instruction of SRL strategies is a drawback in the fashion course. SRL could be improved by directly incorporating it into the course outcomes. In practical classes instruction should not only include demonstrations but also the purpose of the skill and the application where it can be used. In theory classes lecturers

may instruct their students in general study skills and learning strategies such as rehearsal, repeating study material to remember it, elaboration, writing study material in one's own words, organisation, and to highlight its structure. Thus, lecturers must stimulate the use of different self-regulation strategies among students in fashion design.

- SRL strategies may be offered and explained to encourage the students to talk about their own strategies, and to help them to value strategies by making connections between strategy use and performance. Because the use of strategies improves students' performance, the lectures should know how to lecture strategies to their students. Therefore, it is recommended that fashion lecturers undergo short courses in SRL strategy instruction.

- This study found that lecturers do not perceive reflection as a strategy that operates throughout all the phases of SRL. The type of evaluation may have an effect on learning behaviour. No single instrument is sufficient to capture what students think, feel and undertake in order to direct their learning and motivation. Therefore the researcher recommends that the lecturers include more timely informal feedback discussions. Self-reflection (narrative experience) is a drawback in the fashion design course. It is thus strongly recommended that fashion lecturers include critical self-report in portfolios, checklists and informal self-reflection feedback discussions.

- To conclude, it is recommended that the learning environment be adapted. The curriculum should be modified in such a way that students may regulate their own learning, be able to learn with and from their peers, and take responsibility for updating and sharing knowledge and skills.

11. Conclusion

Effective teaching and learning should encourage independent learning that is reflected in self-regulation (Ramsden, 1992: 125-126). The researcher wanted to determine how this theory can be applied in the fashion course in order to support the fashion students to be more successful. Data on SRL was gathered by means of individual interviews with three lecturers in fashion design concerning SRL. Research findings were discussed according to identified themes such as the concept of SRL, modelling and direct instruction of goal-setting, time and resource management, as well as reflection strategies. It is believed that a small amount of course time (10%) devoted to promote SRL could lead to a noticeable improvement, because many students simply do not understand the full complexity of learning.

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Chapter 5

Development of schedules using solo taxonomy to assess the quality of mathematics and science learning in South African schools

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Thapelo Mamiala
North-West University, Mafikeng Campus
21971714@nwu.ac.za
&
David Treagust
Curtin University of Technology
Western Australia

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1. Introduction

Students have been exposed to various forms and styles of explanations of school chemistry and natural phenomena and as such are able to form impressions about teachers' and textbooks' ways of explaining. The purpose of the study was to identify and examine students' perceptions of teachers' and textbooks' use of explanations in school chemistry. The focus was on the perceptions that students attach to explanations which teachers and textbooks use to express and elaborate on some of the school chemistry concepts. Students' responses were categorised and analysed in terms of a framework adapted from Tuan, Chang, Wang and Treagust (2000). Findings show that although learners regard textbooks' explanations as important, they still view teachers' explanations as essential in making sense of the textbooks' explanations.

Learners in school science and mathematics hold alternative explanations of scientific phenomena and mathematical concepts. At times these alternative explanations, which are also referred to as misconceptions, are difficult to change and are based on the students' everyday experiences of the world (Hsu, Wu and Hwang, 2008; Lubben, Campbell, Kasanda, Kapenda and Kandjeo-Marenga, 2002). They contradict the scientifically acceptable explanations of phenomena. There is also increasing recognition that these alternative explanations occur from a variety of sources (Kearsey and Turner, 1999). Verbal explanations by the teacher may be viewed as important media for learning as they facilitate manipulation of ideas, patterns and images. Written explanations from the textbook create excellent opportunities for learners to become actively involved in a learning situation and be able to form systematic connections between concepts (Arthur, 1998; Bezemer and Kress, 2008; 1999; Keys, 1999; Macdonald and Rogan, 1990; Martin, 1993; Peacock and Gates, 2000). The teacher as an explainer and the textbook as an explanatory artefact serve as important sources of school science explanations to the students as explainees. Since the focus of both the teacher and the textbook is the student it is essential to

determine the students' perceptions of what both the teacher and textbook attempt to achieve – explaining school science concepts to the explainee.

There are limited studies on explanations in teaching and learning situations (Baram-Tsabari and Yarden, 2005; Rice, 2005). Although it does not elaborate much on the aspect, the new curriculum in Australia recognises the value of understanding explanations in science education (Education Department of Western Australia, 2000). On the other hand, the South African curriculum does not mention explanations (DoE, 2001a and 2007). Students recognise the problems associated with science learning, and national strategies are being implemented to address some of these problems (DoE, 2001b; Pandor, 2008). However, there is no mention of the role of explanations in these strategies; yet it is common knowledge that how a teacher explains has an influence on the students' learning (De-Carvalho and Paulo, 2004; Den-Brok, Fisher and Scott, 2005).

In previous work by Dagher and Cossman (1992) and Ogborn *et al.* (1996), explanation types were categorised for a teaching and learning situation in school science. The present research is important for several reasons: it focused on identifying these categories in school chemistry lessons and in school chemistry textbooks used for various topics. In addition, the study attempted to highlight explanation types preferred by learners in school chemistry lessons and perceived to contribute to provide teachers with insightful understanding of the impact and relevance of explanations on pedagogical content knowledge. The study will investigate how students perceive the usefulness of explanations by teachers and textbooks in their understanding of school science and mathematics concepts. Knowledge and understanding of these perceptions has the potential to foster a more conscious and focused effort when teachers and textbook authors elaborate on school science and mathematics. Learners' perceptions are organised in terms of the four broad categories used by Tuan *et al.* (2000): explanatory repertoire, representational repertoire, subject matter knowledge and knowledge of students' understanding.

2. Literature

Studies related to the effective use of explanations in teaching and learning to improve students' performance in science and mathematics emphasise the role of explanatory artefacts such as models in helping learners make sense of science and mathematics concepts (Baram-Tsabari and Yarden, 2005; Blake, 2004; Gilbert, Boulter and Rutherford, 1998). Previously, explanation research focused on the philosophical perspective (Hempel, 1993b; Lipton, 2004), and only in the past two decades has the concept been explored and applied in different fields of study. For instance, while attempts have been made to elaborate on what constitutes an explanation (Edington, 1997; Roberts, 1991), philosophy is still debating the issue (Hempel, 1993a and 1993b; Lipton, 2004). In the process, other studies have proposed a theory of how scientific explanations may be constructed from text (Chinn, 1995). Explanations have been further explored in fields such as artificial intelligence (Lonzinskii, 2000), and in cognitive science which focuses on explanations and mental representations of

dynamic systems (Chemero, 2001). Other studies have attempted to define the concept and differentiate it from everyday usage (De-Carvalho and Paulo, 2004; Den-Brok *et al.*, 2005; Treagust and Harrison, 1997). While these various forms of explanations manifest themselves in many ways in a classroom situation, textbooks are also another source of explanations commonly used in school science (Arthur, 1998; Kearsey and Turner, 1999; Martin, 1993 and 1998).

Textbooks may be viewed as explanatory artefacts and their influence on the images that students construct of scientific phenomena and their explanations may not be underestimated. Studies have been conducted to determine the suitability of school science textbooks in explaining school science concepts. For example, studies evaluating school science textbooks suggested the criteria that may be used in the process (Jehlen, 2000) and the aspect of the extent to which textbooks may be able to "… create meaningful learning in students" (de Posada, 1999: 1). This view may also be applicable to mathematics textbooks. In addition, there is a vast difference between how the same concept is explained by the individual textbooks (Reis, 1998). Peacock (1995) raised concern on the evidence related to the readability and comprehensibility of school science and mathematics textbooks. According to him (Peacock, 1995: 1), findings indicate that "texts are often too difficult for children, in developing countries where pupils are learning through English as the medium of instruction". In discussing some of the frameworks used in school science textbooks, Koulaidis and Tsatsaroni (1996) elaborated on the sociocognitive, sociolinguistic and socio-epistemic approaches in their analysis. In order to connect these aspects raised by Koulaidis and Tsatsaroni (1996), one must recognise the individual meaning that a reader or a learner attaches to explanation by the teacher or the textbook and may be achieved through constructivist framework.

Constructivism recognises and acknowledges the unpredictable and individualistic ways whereby people perceive the world about them (Tobin, 1993; Tobin and Tippins, 1993; Toulmin, 1972; Treagust and Harisson, 1996). For instance, when an explanation is used to explain a phenomenon, the explainee's perception of the phenomenon being explained influences his/her understanding of the phenomenon. This is an area of interest in constructivism and explanation use because it is not possible to predict exactly how an explainee will view the explanation (Lee and Butler, 2003; Tuan *et al.*, 2005). Hence, when explaining the explainer must consider the state of knowledge of the explainee.

3. Methodology

The data are reported under two broad categories, namely, quantitative analysis of students' perceptions on teachers' and textbooks' use of explanations, and qualitative analysis of students' responses to interview questions on explanation use by teachers and textbooks. The conceptual framework of the questionnaire to be used is based on and adapted from an instrument initially used by Tuan, Chang, Wang and Treagust (2000) to assess students' perceptions of teachers' knowledge, and was adapted to determine students' perceptions of teachers' and textbooks' explanatory knowledge.

The study focuses on the descriptive and qualitative analyses rather than on the advance quantitative analyses, hence, limitation to standard deviation and the means in order to measure the general trends on the responses. Quantitative data collection and analysis strategies (Coakes and Steed, 1999) are used to determine students' perceptions of teachers' and textbook's use of explanations in school chemistry. The instrument was originally used to assess students' perceptions of teachers' knowledge. In this study it is used to identify and evaluate students' perceptions of teachers' use of explanations (Tuan *et al.*, 2000). In adapting the instrument to assess students' perceptions of teachers' explanations, some items may be restructured or rephrased while others may be left in their original format. Categories to be used in the adapted questionnaire are Explanatory Repertoire, Representational Repertoire, Subject Matter Knowledge and Knowledge of Students' Understanding and reports on the responses used the Likert scale: 1-Almost Never, 2-Seldom, 3-Sometimes, 4-Often and 5-Almost Always.

Explanatory Repertoire (ER) refers to students' perceptions of the extent to which the teacher selects from among an explanatory repertoire. This category is mainly aimed at identifying students' perceptions of whether or not their teachers' explanatory strategies could engender interest and benefit their content learning. Representational Repertoire (RR) focuses on students' perceptions of the extent to which the teacher uses a representational repertoire that challenges students' previous explanations of the concept/phenomenon. The Subject Matter Knowledge (SMK) category focuses on the students' perceptions of the extent to which the teacher demonstrates a comprehension of purposes, subject matter and ideas within the discipline. The Knowledge of Students' Understanding (KSU) category focuses on students' perceptions of the extent to which the teacher evaluates student understanding during interactive teaching and at the end of lessons and units.

For the South African version of the questionnaire, the word chemistry was substituted with physical science. This version was given to two English language teachers to seek their opinion regarding the level of English language used in the questionnaire. Both teachers responded that the level was reasonable for students in Grades 11 and 12, and upon their recommendations, only a few minor changes were made. The same procedure was repeated with the two teachers who were participating in the study; they also gave a positive response and approval to administer the questionnaire.

It should be highlighted that some of the reliability coefficients are low and the researcher addressed the issue by using Gall *et al.*'s (1996) perspective. The position of Gall *et al.* (1996: 254) on reliability is that "… tests that yield scores with a reliability of 0.80 or higher are sufficiently reliable for most research purposes". However, the authors also indicate that the effect of low reliability may be minimised by the inclusion of time-consuming measurement techniques such as "indepth interviews" (Gall *et al.*, 1996: 230). In this study, the researcher has incorporated the use of interviews so that he is able to attain clarification on the respondents' understanding of the items in the questionnaire as well as minimise the influence that may result due to low reliabilities on some of the scales.

Within each category students' responses to interviews about teachers' and textbooks' use of explanations are discussed and analysed. This consisted of semi-structured interviews with students with the aim to verify and clarify some of the students' responses in the questionnaire. This procedure helped in enhancing the interpretive validity of the study (Cohen *et al.*, 2000; Gall *et al.*, 1996) so that the researcher could establish whether or not there was any consistency in the students' written and spoken responses.

Two aspects were also taken into consideration during the analyses of the data: culture and language. South African society and the system of education are still characterised by cultural practices where learners are not encouraged to critically question what is presented to them or show disbelief to what an adult/teacher is saying in class. An adult or a teacher is viewed as always telling the truth. As a way to address some of these aspects, Kirby and Downs (2007) highlight how the Science Foundation Programme (SFP) at the University of KwaZulu-Natal attempts to respond. Students are provided with skills and confidence to interact and critically assess their learning.

South African learners' perceptions may also be influenced by the fact that English is not their first language. Science explanations are rarely tautological in nature and as such statements are loaded with meaning which at times may be missed and misinterpreted (Mallozi and Malloy, 2007). Analyses of their responses were based on the suggestions of Carrier (2005) and Huang and Morgan (2003) who focus on vocabulary, language function and sentence structures that learners use to engage in critical thinking in science.

As highlighted by Vosniadou (2007: 1), learners need to learn how to restructure their "naïve intuitive theories based on everyday experience and culture". Through this restructuring learners may be able to make sense of scientific explanations. Responses were analysed within the context of the above frameworks.

4. RESULTS

POPULATION SAMPLE

A total of 102 learners from both Australia and Republic of South Africa participated in the study. Out of a total of 35 students from the two Australian classes, 29 completed the questionnaire. In South Africa, the sample of students was distributed in the following order: 41 Grade 11 and 26 Grade 12. Gender distribution of the participants may be viewed as balanced. In Australia, the sample comprised 15 (51.7%) boys and 14 (48.3%) girls, while in South Africa, the sample consisted of 37 (55.2%) boys and 30 (44.8%) girls.

EXPLANATORY REPERTOIRE

This section is organised in terms of subscales used in the questionnaire: Students' perceptions of teachers' explanations in chemistry (SPOTEC). Responses by Australian

and South African students to each item on this scale are shown in Tables 1 and 2, respectively. The total mean for Australian students' responses of this scale (3.34) indicate that the Australian students' responses are between sometimes and often and the South African students' responses are closer to often (see Table 1).

Table 1: Descriptive statistics for the four categories of the instrument to measure students' perceptions of teachers' explanatory knowledge in chemistry lessons.

Scale	No of items	Mean			Standard deviation		
		Aust N=29	SA N=67	Comb N=96	Aust N=29	SA N=67	Comb N=96
Explanatory Repertoire (ER)	8	3.34	3.81	3.67	0.65	0.62	0.66
Representational Repertoire (RR)	7	3.30	3.78	3.63	0.52	0.68	0.67
Subject Matter Knowledge (SMK)	6	3.77	3.78	3.77	0.55	0.76	0.70
Knowledge of Students' Understanding (KSU)	7	3.61	3.98	3.86	0.71	0.68	0.71

The Australian students responded positively on the teachers' explanatory repertoire (83.0% = 39.3+33.7+10.0), indicating that they regard the teachers' explanatory strategies as beneficial and contributing to their content learning often or sometimes, with item 5 having the highest percentage (79.3%) (see Table 2). In items 5 and 7, 20.7% (6.9+13.8 and 0+20.7) of the responses in each case indicated the students' view that their teachers seldom or almost never use interesting methods to explain chemistry topics and a variety of approaches of explanations to teach different topics. A large percentage of students (see item 2) (89.3% = 28.6+25.0+35.7) opine that the teachers provide opportunities for them to express and explain their points of views.

In South Africa, the situation is slightly different with a high percentage of responses within the almost always category (37.6%) (see Table 2). Item 3, with the highest percentage, implies that half of the respondents perceived their teachers as almost always using different ways of explaining to promote their interest in learning and chemistry.

Table 2: Australian and South African students' responses to the Explanatory Repertoire – scale of SPOTEC

STATEMENTS	Almost Never	Seldom	Sometimes	Often	Almost Always
My teacher's way of explaining keeps me interested in chemistry.	1 3.4	13.8	37.9	37.9	6.9
	2 1.5	6.1	16.7	21.2	54.5

STATEMENTS	Almost Never	Seldom	Sometimes	Often	Almost Always
My teacher provides opportunities for me to express and explain my point of view.	3.6 8.2	7.1 8.2	28.6 36.0	25.0 14.8	35.7 32.8
My teacher uses different ways of explaining to promote my interest in learning.	3.4 6.0	13.8 3.0	41.4 16.4	37.9 20.9	3.4 53.7
My teacher uses appropriate models to explain and help me to understand chemistry concepts.	0 1.5	13.8 9.1	37.9 24.2	37.9 27.3	10.3 37.9
My teacher uses interesting methods to explain chemistry topics.	6.9 4.7	13.8 6.3	48.3 18.8	24.1 28.1	6.9 42.1
My teacher's methods of explaining make me think hard.	3.4 10.6	17.2 13.6	44.8 42.4	31.0 18.2	3.4 15.2
My teacher uses a variety of approaches of explanations to teach different topics.	0 9.1	20.7 7.6	37.9 27.3	37.9 34.8	3.4 21.2
My teacher shows us and explains activities that I can use to continue my study of a topic.	3.4 6.2	10.3 6.2	37.9 13.8	37.9 30.8	10.3 43.0
Average	3.0 6.0	14.0 7.5	39.3 24.4	33.7 24.5	10.0 37.6

[1]Australian students' responses

[2]South African students' responses

A high percentage (92.4% = 16.7+21.2+54.5) (see item 1 in Table 2) of students indicated that the teachers keep them interested in chemistry. The scale mean percentage (86.5% = 24.4+24.5+37.6) (see Table 2) of responses for students in this category (sometimes, often and almost always) shows that they regarded their teachers' explanations as beneficial and contributing to their content learning. This result is further supported by the total means responses of this scale (3.81) (see Table 1) which indicates that the mean responses for this scale are between sometimes and often.

Students were then interviewed on one of the items within the same category to examine and verify what they expressed in the questionnaire. For instance, Item 1 of the questionnaire guided their responses under the first category: Does the teacher's way of explaining keep you interested in chemistry? (Item 1) Most students indicated that teachers were making use of everyday examples and humour to keep them interested. Other aspects mentioned by the students are related to clarity and ability of teachers to explain in simple language. According to one of the students, "he does … add real life experiences … adding little stories and stuff like that … " (as3). Responses compared well with the quantitative responses (see item 1 in Table 2); 82.7%

(37.9+37.9+6.9) of Australian students agree that the teachers' way of explaining was keeping them interested in chemistry.

In response to whether their teacher's way of explaining concepts kept them interested in chemistry, two South African students gave verbal responses that were compatible with their written responses. For instance, one student stated sometimes in the questionnaire and when probed further during the interview he said "… when we start doing concepts that involved formulas … I do not have a problem, but the teacher is able to explain when I start to have a problem …" (ss1). [Students said this hesitantly and his facial expression indicated that he was uncertain]. When the other member of the group was asked the same question, he stated almost always in the questionnaire and gave a similar response in the interview that "Mr Leka answers each and every question that you ask him …" (ss6).

Friendly personality, moving at a reasonable pace in his teaching, use of jokes, willingness of the teacher to allow students to ask questions in class and ability of the teacher to show how what they are doing in class is related to their everyday life experience are some of the reasons that students stated in support of their positive responses to the teachers' way of explaining kept them interested in chemistry. The total mean of South African students responses on the Explanatory Repertoire scale was 3.81 (see Table 1) which implies that the students perceived the teachers' way of explaining as often keeping them interested in chemistry. The response by the Australian students on this scale (3.34) was between sometimes and often.

Representational repertoire

The highest percentage of Australian students' responses are within the category of sometimes (45.2%), with items 14 and 15 having the highest individual percentages (62.1% and 58.6%, respectively) (Table 3). The majority of the students (65.5% = 48.3+17.2) (see item 11) agreed that teachers often or almost always used demonstrations to show and explain chemistry concepts.

In items 12 and 13, the majority of the students (27.6% and 24.1%, respectively) indicated that their teachers almost never or seldom used real objects to explain and help them to understand chemistry concepts or stories to explain chemistry ideas. On average, under Representational Repertoire, 85.2% (45.2+32.0+8.0) (see Table 3) of the Australian students' responses indicated that they viewed teachers as making use of various forms or modes of explanatory representations during chemistry lessons sometimes, often or almost always. The total mean response in this scale (3.30) (see Table 1) indicates that the students' responses are between sometimes and often.

Table 3: Australian and South African students' responses to the Representational Repertoire – scale of SPOTEC

STATEMENTS	Almost Never	Seldom	Sometimes	Often	Almost Always
My teacher uses familiar examples to explain chemistry concepts.	0 4.6	3.6 4.6	46.4 27.7	35.7 12.3	14.3 50.8
My teacher uses appropriate diagrams and graphs to explain chemistry concepts.	0 1.5	10.7 3.0	39.3 16.8	39.3 24.2	10.7 54.5
My teacher uses demonstrations to show and explain chemistry concepts.	0 4.5	3.4 4.5	31.0 16.7	48.3 25.8	17.2 48.5
My teacher uses real objects to explain and help me understand chemistry concepts.	6.9 6.0	20.7 6.0	34.5 26.9	37.9 22.3	0 38.8
My teacher uses stories to explain chemistry ideas.	6.9 16.9	17.2 12.3	44.8 40.0	24.1 10.8	6.9 20.0
My teacher uses analogies with which I am familiar to explain and help me to understand chemistry concepts.	6.9 6.1	10.3 13.6	62.1 27.3	20.7 25.8	0 27.2
My teacher uses familiar events to describe and explain chemistry concepts.	3.4 6.0	13.8 13.4	58.6 22.4	17.2 20.9	6.9 37.3
Average	3.4 6.5	11.4 8.2	45.2 25.4	32.0 20.3	8.0 39.6

The highest average of South African students' responses is within the category of Almost Always (39.6%) (see Table 3) with items 9, 10 and 11 having percentages over 48%. These data imply that students perceived their teachers as using representational repertoires that challenge their previous explanations of phenomena.

On this scale, 85.3% of the students chose sometimes, often or almost always and the total mean of the responses is 3.78, which implies that most of the responses are either sometimes or often and more closer to often. According to the data (95.5% = 16.8+24.2+54.5) (see item 10), a high percentage of students indicated that their teachers are using appropriate diagrams and graphs.

When interviewed on the second category the students responded as follows: Does the teacher use familiar examples in his explanations? (Item 9) When probed on their teachers' use of examples that are familiar to them in chemistry the Australian students' responses were positive, agreeing that at times teachers do give background information to the meanings of what they say during the lessons. Australian students' responses on this aspect are even stronger in the questionnaire responses (see Item 9 in Table 3), where 96.4% (46.4+35.7+14.3) of the students indicated that the teachers

were sometimes, often or almost always making use of familiar examples to explain chemistry concepts.

When South African students were asked to state their opinion on whether their teacher was using familiar examples to explain concepts, there was a wide spread of opinion. Some of the students indicated almost never, while others indicated sometimes or almost always. One student gave a response of almost never and when probed during the interview (ss7), he said that normally the teacher makes use of the examples from Grade 9; his expectation was that a teacher will make use of familiar explanations to explain unfamiliar concepts. ss2 supported her response of often by stating "… he uses familiar examples that are real […] he was talking about sulphur and its compounds, […] it gives good colour […] something that I see" (ss4). Visual representation of some aspects of the explanation helped the students to perceive the explanations as being familiar. Demonstration by the teacher also helped the students to familiarise themselves with the contents of the explanation. The total mean response for the South African students on the Representational Repertoire scale was 3.78, which implies that these students perceived the teacher as often using familiar examples. In Australia, the mean response of this scale was 3.30, between sometimes and often (see Table 1).

Subject matter knowledge

The first item under this scale (see item 16 in Table 4) indicates that all the Australian students (100%) have the view that the teachers know and explain the content they are teaching sometimes, often or almost always. Item 18 also indicates that 100% of the responses regard the teacher as the person who knows and is able to answer the questions they ask about chemistry concepts. There was also a high percentage of students (37.9%) (see item 21) with the view that the teachers seldom or almost never explain the impact of chemistry on society. The total mean response in this scale (3.77) highlights that most of the students' responses were between seldom and sometimes (see Table 1).

In South Africa, there is a high average response (45.6%) (see Table 4) of students who chose almost always. A large percentage (95.5% = 4.5+13.6+77.4) of students stated that their teachers know and explain the content they are teaching (see item 16 in Table 4). Item 18 also had a high percentage (95.5%) of students who indicated that their teachers know and explain the answers to questions they ask about chemistry concepts. Both Australian and South African groups had high percentages on these two items (16 and 18).

The total average percentage response of South African students on the Subject Matter Knowledge scale who perceived their teachers as being able to demonstrate a comprehension of purposes, subject matter and ideas within the discipline was high (78.5% = 14.9+18.0+45.6), implying that the students were positive on this aspect. The total mean response on this scale (3.78) implies that most of the responses are closer to often (see Table 1).

Table 4: Australian and South African students' responses to the Subject Matter Knowledge – scale of SPOTEC

STATEMENTS	Almost Never	Seldom	Sometimes	Often	Almost Always
My teacher knows and explains the content s/he is teaching.	0 / 1.5	0 / 3.0	13.8 / 4.5	31.0 / 13.6	55.2 / 77.4
My teacher knows and explains how chemistry theories or principles have been developed.	0 / 3.1	3.4 / 7.7	31.0 / 15.4	31.0 / 15.4	34.5 / 58.4
My teacher knows and explains the answers to questions that we ask about chemistry concepts.	0 / 1.5	0 / 3.0	17.2 / 7.6	51.7 / 21.2	31.0 / 66.7
My teacher knows and explains how chemistry is related to technology.	0 / 19.4	10.3 / 14.9	34.5 / 20.9	44.8 / 13.4	10.3 / 31.4
My teacher knows and explains the history behind chemistry discoveries.	0 / 19.7	6.9 / 18.2	41.4 / 21.2	34.5 / 22.7	17.2 / 18.2
My teacher explains the impact of chemistry on society.	3.4 / 15.5	34.5 / 21.5	34.5 / 20.0	20.7 / 21.5	6.9 / 21.5
Average	0.6 / 10.1	9.2 / 11.4	28.7 / 14.9	35.6 / 18.0	25.9 / 45.6

In the third category Item 17 guided the students' responses: Does your teacher explain how chemistry theories have developed? (Item 17) When asked about whether the teacher was explaining how chemistry theories have been developed or not, the quantitative responses (see Item 17 in Table 4), have shown strong agreement with 96.5% of the Australian students being in agreement. However, when interviewed on the same matter, not all the students were in agreement, one group stating "… not always", "… only, sometimes", "… when it is necessary", and they gave a section on gas laws (as3) as an example. One group gave a response similar to that observed in one of the lessons when the teacher gave background information on the theory behind the atomic nature of particles. According to one of the students:

> […] he usually goes back to where the first scientist developed […] How they figured out all this stuff […] the beginning of a periodic table with for instance how bits were originally missed out and then filled in later and in fact we get an understanding where it all came from to begin with (as4).

This response implies that students are receptive of relational type of explanations.

To the question of whether their teacher explained how chemistry theories have been developed, all the South African respondents gave a positive answer between often and almost always (89.2% = 15.4+15.4+58.4) (see Item 17 in Table 4), and the reasons they provided for their answers were based on examples from the physics section of the subject.

Knowledge of students' understanding

The highest percentage of the Australian students' responses (73.2%) in this scale view the teachers' tests as allowing them to check their understanding of explanations (see Item 28 in Table 5). However, in item 26, 20.7% of the responses indicated that students are of the opinion that the teachers seldom assess whether or not they understand their explanations. On average, 88.2% (31.5+38.0+18.7) (see Table 5) of the responses in this scale perceived the teachers as being able to evaluate their understanding through explanations. Under this scale the total mean score (3.61) highlights that most of the students' responses are between sometimes and often.

Table 5: Australian and South African students' responses to the Knowledge of Students' Understanding – scale of SPOTEC

STATEMENTS	Almost Never	Seldom	Sometimes	Often	Almost Always
My teacher's tests evaluate my explanations and understanding of a topic.	0	6.9	31.0	34.5	27.6
	3.0	9.0	26.8	28.4	32.8
My teacher's questions evaluate my explanations and understanding of a topic.	0	13.8	34.5	41.4	10.3
	4.5	7.6	28.8	34.8	24.3
My teacher's assessment methods evaluate my explanations and understanding.	10.3	3.4	44.8	27.6	13.8
	6.6	8.2	29.5	31.1	24.6
My teacher uses different approaches (explanations, questions, discussion, etc.) to find out whether or not I understand.	3.4	10.3	34.5	31.0	20.7
	9.0	3.0	10.4	16.4	61.2
My teacher assesses whether or not I understand his/her explanations.	3.4	17.2	27.6	44.8	6.9
	1.5	4.5	19.7	28.8	45.5
My teacher uses tests to check that I understand the explanations used in chemistry classes.	0	6.9	24.1	41.4	27.6
	1.5	6.0	22.4	16.4	53.7
My teacher's tests allow me to check my understanding of explanations.	3.4	3.4	24.1	44.8	24.1
	1.5	7.5	16.4	9.0	65.6
Average	3.0	8.8	31.5	38.0	18.7
	3.9	6.5	22.0	23.6	44.0

In South Africa, the high percentage of responses on this scale are within the category of Almost Always (44.0%) (see Table 5), with items 28, 25 and 27 having the highest individual percentages of 65.6%, 61.2% and 53.7%, respectively.

On average, under this scale, 89.6% of the responses indicated that the students perceived the teacher as evaluating their understanding during interactive teaching and at the end of lessons; this is further supported by the total mean responses (3.98) (see Table 1), implying that most students' responses are between often and almost always. The mean responses in all four scales of the combined groups have a high percentage of students indicating almost always (see Table 1).

Table 6: Cronbach alpha reliabilities for the four scales

Scale	No. of items	Alpha reliability		
		Combined N=96	Aust N=29	SA N=67
Explanatory Repertoire	8	0.73	0.86	0.59
Representational Repertoire	7	0.75	0.71	0.72
Subject Matter Knowledge	6	0.70	0.73	0.70
Knowledge of Students' Understanding	7	0.80	0.85	0.76

Estimates of the internal consistency of the four scales of the SPOTEC instrument were calculated using Cronbach's alpha coefficient for the two groups of Australian and South African respondents. As the individual group means were used as units of analysis, it was considered important to report the internal consistency of the individual groups of students. Table 6 shows the Cronbach alpha coefficient for each scale of the SPOTEC instrument using individual groups as well as the combined group as units of statistical analysis. The scales of each category for Australian students had high Cronbach alpha values (0.71-0.86) and the South African values were slightly lower, ranging from 0.59 to 0.76.

The last category used Item 25 to facilitate and guide the interview: *Do the teacher's explanations assess your understanding of chemistry concepts?* The students were probed on the teachers' assessment of their understanding of explanations. The majority of the students indicated that occurred by means of assignments, tests or at times by asking questions in class. The quantitative responses indicated that although a high percentage of Australian students (88.3% = 31.5+38.0+18.7) (see Table 5) still agreed that their teachers had ways of assessing their understanding of chemistry explanation, there is still a group which has a different view; 11.8% (3.0+8.8) did not regard their teacher as having a way of assessing their understanding of explanation. What is more noticeable in the responses is the high percentage of Australian students (20.6%) (see Item 26 in Table 5) who have the view that the teacher seldom (17.2%) or almost never (3.4%) assesses whether or not they understand his/her explanations. Although the interviewed students indicated that the teacher made use of tests, assignments and questions in class to assess their explanations and understanding, in the questionnaire (see item 24), 13.7% (10.3+3.4) of the classes stated that the

teachers' assessment methods almost never or seldom evaluated their explanations and understanding.

When the same question was asked on how the teacher was assessing their understanding of the explanations in chemistry, the majority of the South African students indicated that this occurred by frequently asking questions during the lessons. One student put it this way: "… he assesses by asking questions and … he asks questions so that we can answer back and we can ask more questions …" (ss4). As can be noted from this student's response, there is interaction and frequent questioning by both teacher and students. A student in another group stated "… When you ask him a question he will ask you whether you understood, and when you tell him that you understood, he will ask you another question, to see if you can answer to demonstrate your understanding …" (ss1). Questioning during the lesson seemed to be the assessment strategy used by South African teachers to determine whether the students understood the explanations. The students strongly believed that the teachers assessed their understanding of their explanations. This was also supported by the quantitative responses (94.0% = 19.7+28.8+45.5) (see item 26 in Table 5). It should be noted that 47.1% of the questionnaire respondents in item 26 indicated almost always: this differs from the responses by the Australian respondents, of whom only 6.9% indicated almost always when asked whether the teacher was assessing their understanding of his/her explanations. When compared to Australian students, a higher percentage of South African students regarded teachers' explanations as assessing their understanding of chemistry concepts (45.5%) (see item 26 in Table 5).

5. Discussion and conclusion

The focus of this study was on the perceptions that learners have toward the teachers' and textbooks' use of explanations in school science. The data show how learners view the teachers' and textbooks' use of explanations under the four broad categories.

Explanatory Repertoire (ER)

Compared to Australian students there was a high percentage of South African students who perceived their teachers' explanatory strategies as being beneficial. The mean response to this scale was 3.34 for Australian students and 3.81 for South African students. The total mean responses of the combined group in this scale (3.67), between often and almost always (see Table 1), indicated that students benefited from their teachers' explanatory repertoires and this aspect was also highlighted during the interviews.

Representational Repertoire (RR)

Similar trends as in the previous scale were noted; there was a higher percentage of South African students who regarded teachers' representational repertoires as effective. Students viewed teachers as making use of various forms of explanatory representations during chemistry lessons. The mean response to this scale was 3.30 for Australian students and 3.78 for South African students. The total mean responses of

the combined group in this scale (3.63), between often and almost always, indicated that students benefited from their teachers' representational repertoires.

Subject Matter Knowledge (SMK)

In this scale, Australia had a higher percentage of students who perceived their teachers as demonstrating understanding of the subject matter and ideas within the discipline. The mean response to this scale was 3.77 for Australian students and 3.78 for South African students. The total mean responses of the combined group in this scale (3.77), between often and almost always, indicated that students benefited from their teachers' subject matter knowledge.

Knowledge of Students' Understanding (KSU)

South African students, when compared to Australian students, had a slightly higher percentage who perceived their teachers as being capable of evaluating their understanding of the concepts through the use of explanations. The mean response to this scale was 3.61 for Australian students and 3.98 for South African students. The total mean responses of the combined group in this scale (3.86), between often and almost always, indicated that students benefited from their teachers' knowledge of students' understanding.

During the interview, students indicated that they view textbooks' explanations as being too scientific and therefore not at their level. Students regarded scientific explanations as taking time to understand and associated them with the use of suitable terms. They have a naïve understanding of a scientific explanation and its purpose. Majority of the students indicated that they are able to make sense of textbooks' explanations after the teachers have provided them with preliminary explanations of the concept/topic. Australian students indicated that they were satisfied with the textbooks' use of explanations but in South Africa many students strongly indicated that the teacher plays an important role in helping them to make sense of the textbooks' explanations, probably this reaction may be associated with learners having English as a second language and finding it difficult to use it in elaborate. As indicated earlier, some students perceived the textbook's explanation as too scientific and therefore difficult to understand but the teachers' explanations were simple and acceptable.

Categorisation of the explanations by the use of the adapted instruments have the potential to help school chemistry teachers and textbook authors to acquire a better understanding of how their explanatory knowledge and use in teaching and writing respectively may be improved as a result of students' perceptions. The findings will provide science teachers and textbook authors with a valuable tool for assessing students' perceptions of their explanations, with a view to improving them, and suggesting ways to improve students' understanding of scientific explanations presented by teachers and textbooks. An intended outcome of this study was to encourage teachers to present school chemistry content in a way that will facilitate understanding and meaning making by students instead of relying on rote learning. The study makes suggestion to teachers and textbook authors on how to structure and present explanations so that school chemistry learners can easily understand them.

One aspect that teachers should realise is that students' interest and understanding of teachers' and textbooks' explanations has nothing to do with the importance of the topic/section under discussion or with the truth contained in a scientific explanation. Rather, their interest and understanding has more to do with the extent to which the new explanation relates to their prior knowledge and everyday experiences. The greater the gap between teaching explanations and students' prior experiences and knowledge, the explanation is perceived as being more abstract and students will be less interested in the explanation. User-friendly chemistry textbooks need to be developed that focus on conceptual understanding rather than covering a lot of content because this may lead to an increase in overall comprehension of reading material. Explanations and problems in the textbooks should be such that they require more than a recall or algorithmic learning and yet simple enough to give students a reasonable chance of success when attempting to read on their own.

It is anticipated that as a result of this research, textbook authors and curriculum writers may become more sensitive to the types and nature of explanation that they use in writing their materials. Teacher training institutions should equip future teachers with the skills needed to develop teaching explanations that will help in narrowing the gap between scientific explanations and students' explanations. This has implications for both pre-service and in-service teacher training. In South Africa, the physical environment (that is, equipment and materials resources needed by the teachers) generally are inadequate and as such, they impact on the types and nature of explanations that teachers may use. There is the need to upgrade most of South African government schools that are located in the historically disadvantage communities so that teachers and students can use, for example, effective explanatory artefacts such as models for learning science and chemistry in particular.

This is probably the first empirical study in school chemistry explanations using an adapted instrument (SPOTEC). Further validation of the instrument is required if it is to be used for multilevel analysis or in conventional statistical methods. The study serves to inform teachers and textbook authors about how their students currently perceive their explanations and what they would prefer them to be like. With this knowledge, teachers and authors may be able to make the improvements in their explanations of school chemistry concepts. The intended improvement will result in students being able to make better sense and meaning of scientific explanations which is crucial for students who are in their senior years of secondary school and are expected to write examinations with some of the questions requiring explanations.

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Rethinking the value of simulated games in economics education: an experimental teaching strategy

Michael M. van Wyk
University of the Free state
Vanwykmm@ufs.ac.za

1. INTRODUCTION

Excellent and effective teaching demands a host of devices, techniques and strategies not only to achieve cross-critical outcomes, but because variety, itself, is a desideratum. One teaching instrument which perhaps is seldom used is the simulated games. To encourage this development, learning activities become important. As an example of one approach, this study investigated the advantages of using simulation games as an experiential teaching strategy as a stimulus to encourage, create interest, and develop critical thinking and reflective skills in Economics education**.**

The simulated game bug bit and infected me with the experimental virus. I was exposed to experiential games and simulations during the Train-the-Trainers program 2005-2007, presented by the National Council on Economic Education (NCEE) (2005: 3-5). NCEE is a nationwide network in the United States of America (USA). It spearheads the promotion of Economics literacy among students and their teachers. NCEE's mission is to help students develop real-life skills essential for success in the business world: to be able to think and choose responsibly as consumers, savers, investors, citizens, members of the workforce, and effective participants in a global economy

> I was trained in the experimental approach by NCEE faculty staff and came to appreciate the effectiveness and relevance of simulated games in Economics education. My conscience bothered me for almost a year. Then I started experimenting with simulated games. I do not have a fair and valid excuse for my delayed enthusiasm. After all, it was simulations that helped me understand how my car works and the impact of compounded interest on my investments! Some people experience games as too frivolous. My vocabulary improved by playing games. More recently, I used a computer-based game to boost the keyboarding skills of students in our faculty. Simulations and games are a formidable combination. Simulated micro-teaching and experimental teaching sessions used to train student teachers in our faculty immediately spring to mind. Why the fuss over experiential teaching approach for Economics education?
>
> I believe that Economics experiments place students directly into real Economics situations where they will be required to make choices based on specific incentives. These experiments provide a powerful link between Economics theory and direct experience. I contend that for the sake of the quality of teaching and learning, but also for my own teaching practices – for which I previously relied heavily on the lecture format – I decided to use more effective and efficient strategies to develop my students' cognitive, psychomotor and

affective learning skills. Incidentally, these students are now obliged to teach the underlying principles of the National Curriculum Statement (NCS). They are expected to comply with policies that call for effective and efficient teaching strategies. I contend that a competent lecturer with effective and efficient teaching skills will produce competent student teachers. The next paragraph explains the conceptual framework of simulated games.

2. Literature review

Conceptualisation of simulated games

Educational games and simulations are experiential exercises that transport students to another world. They apply their knowledge, skills, and strategies in the execution of their assigned roles. Games are competitive exercises in which the objective is to win and players must apply subject matter or relevant knowledge in an effort to advance in the exercise and win. By contrast, simulations are open-ended situations with many interacting variables (Gredler, 1996: 521 and 1994: 223). A simulation game is a game that contains a mixture of skill, chance and strategy to stimulate an aspect of reality, such as a stock exchange. Ruohomaki (1995: 308-334) stated that a simulation game combines the features of a game (competition, cooperation, rules, participants and roles) with those of a simulation (incorporation of critical features of reality). Economics education needs more active and collaborative teaching and learning strategies. Games can be divided into three distinct sections: general business games/simulations; games with educational features, and games for specific educational purposes. These games can be classified as a) Computer games: All computer games on the market; b) Educational computer games: Computer games developed specifically for educational purposes, and c) Computer games with educational features. As illustrated in Table 1, the scope of computer games with educational features includes educational games, as well as other market games not specifically developed for educational purposes, but which nonetheless, have a positive effect on students' learning or development.

Table 1: Effects of research studies conducted on simulated games (1980-2003)

Factors	Positive effects	Negative effects
Academic achievement	Higher for players who play a little. Durkin and Barber, 2002; Cole, 1996 as cited in Subrahmanyam *et al.*, 2001.	Negative correlation with time spent game playing. Anderson and Dill, 2000.
Self-esteem	Use of computer games with educational features in education. Can and Cagiltay, 2006; Durkin and Barber, 2002; Malone, 1980	Negative correlation with frequency of time play for boys. Colwell and Payne, 2000.
Social behaviour	No negative effect. Colwell and Payne, 2000. Positive effect when played together. Durkin and Barber, 2002; Media Analysis Laboratory, 1998; Prensky, 2001; Rosas *et al.*, 2003; Strasburger and Donnerstein, 1999.	Anderson and Bushman, 2001 and 2002; Anderson, 2002; Chory-Assad, 2000. No effect: Phillips *et al.*, 1995.

Factors	Positive effects	Negative effects
Increased aggression	No association with game playing. Interactive Digital Software Association, 2001; Durkin and Barber, 2002.	Anderson and Bushman, 2001 & 2002; Anderson, 2002; Bartholow and Anderson, 2002; Chory-Assad, 2000.
Visual skills	Improved "spatial representation", "iconic skills" and "visual attention". Subrahmanyam *et al.*, 2001: 13; Greenfield *et al.*, 1994; Greenfield, 1984 as cited in Prensky, 2001.	Some games require only simple skills. Gredler, 1996. Market games generally include repetitive activities and have negative effects on learning strategies. Coyne, 2003; Gredler, 1996; Price, 1990. Badly designed games have negative effect on learning. Provenzo, 1992. During speedy games, opportunity for reflection is decreased. Prensky, 2001.
Motor skills	Increased performance as time spent. Kawashima *et al.*, 1991.	
Computer skills	Prensky, 2001; Subrahmanyam *et al.*, 2001	
Problem-solving skills	Rieber, 1996	
Discovery	Gorriz and Medina, 2000; Greenfield, 1984 as cited in Prensky, 2001; Price, 1990.	
Exploration	Prensky, 2001; Provenzo, 1992.	
Engagement-interactivity	Gredler, 1996; Prensky, 2001; Price, 1990;Provenzo, 1992.	
Motivation-flow	Malone, 1980; Prensky, 2001; Rieber, 1996; Rosas *et al.*, 2003.	
Cognitive skills	(In the long term) Cole, 1996 as cited in Subrahmanyam *et al.*, 2001.	

3. SIMULATED ECONOMICS GAMES PLAYED IN THIS STUDY

In recent years, several attempts have been made to enhance student learning experiences by increasing their motivation, by attempting to focus their attention, and by helping them to construct meaningful and permanent records of their learning in Economics education (Van Wyk, 2007: 12). The specific simulated games for this study were carefully selected, modified and aligned to achieve the learning outcomes for the module EEE112, Elementary Economics (Van Wyk, 2008: 3). Seven simulated Economics games were played during the first semester of 2008 (February to June 2008) in the Faculty of Education, University of the Free State (UFS).

The first game focused on three Economics concepts of "opportunity cost, decision making and scarcity problem" principles. Students played a UFS cap auction game for allocating a scarce resource to the highest bidder. In this game I used a UFS cap as the scare resource. A second concept, *productivity*, was demonstrated by using The Quality Book Factory game. After demonstrating the game to the students, they had to demonstrate how they would use it to demonstrate the supply chain and labour specialisation of scarce resources to produce a quality product. Groups had to produce as many quality products (books) as possible within a certain time. The third principle that was demonstrated was the interaction between *consumers* and

producers. The game used was called Dairy Farmers versus Food Retailers. Group members demonstrated how the forces of supply and demand determine price and how changes in the price of a product and service affect the quantities demanded and supplied in the market.

The fourth game, The Market Never Stands Still, explained how *demand* and *supply* shift in response to changes in factors affecting consumers and producers, respectively. The game, Markets Interact, demonstrated how changes in determinants of supply or demand affect market prices and quantities exchanged. Students were clustered through the "think-pair-share" group technique for the Economics quizzes. These were multiple-choice questions on a particular learning unit of the module EEE112. In the last game, the Fiscal Policy: A Two-Act game, groups of students demonstrated the effects of *expansionary* and *contractionary* fiscal policy of government and how the president of the South African Reserve Bank can intervene in market operations through role play. Table 2 provides a chronological summary of the games played, the outcomes of each game, the time allocation per game, participations, and gains or rewards for participants.

Table 2: Simulated games played in the contact sessions

Games played	Outcomes of the game	Time allocation	Participants	Gains or rewards
UFS cap auction	Students demonstrate the ability to use the decision-making model for allocating a scarce resource. Example of a UFS t-shirt	15 minutes per contact session	Students' highest bidding process	Highest bidder for UFS cap auction
The Quality Book Factory	Students understand the supply chain and through specialisation of scare resources *how* to produce a quality product. Produce a quality book through one pierce of A4-paper+paper clip+ruler+pen	55 minutes per contact session X 3 rounds (3 hours/15min)	Small groups of five members	CASS marks total # books produced in set time + M & M's
Dairy Farmers versus Food Retailers	Students participate in a simulation and demonstrate how the forces of supply and demand determine price and how changes in the price of a product and service affect the quantities demanded and supplied. Example of consumers/producers	55 minutes per contact session X 3 rounds (3 hours/15min)	All students participate as buyers and sellers	Individual score cards. CASS marks

Games played	Outcomes of the game	Time allocation	Participants	Gains or rewards
The Market Never Stands Still	Students explain how demand and supply shift in response to changes in factors affecting consumers and producers, respectively. Then they predict the effects of changes in demand and supply on market prices and quantities traded.	55 minutes per contact session X 2 rounds (2 hours/20min)	Individual students	CASS marks (grades scores) + M & M's
Markets Interact	Students analyse how changes in determinants of supply or demand affect market prices and quantities exchanged. Students analyse how changes in one market affect other markets.	55 minutes of one period	All students: individual	Individual score cards. CASS marks + Cert
Economics quizzes (Van Wyk, 2008)	Students participate in Economics quizzes of 25 questions of 2 sessions each covering learning units 1-4 of the module EEE 112-Elementary Economics. One member pastes answer to correct number on Economics Score card	50 minutes x 3 rounds	Randomly select small groups of four members	Group CASS marks (grades) + Certificate + Pen set
Fiscal Policy: A Two-Act play	Students understand the effects of the expansionary and contractionary fiscal policy of the Reserve Bank	110 minutes	Groups playing different roles	Group CASS marks (grades)

* Continuous Assessment (CASS) marks: counts for 50% of final mark for promotion in the course work

4. THEORETICAL FRAMEWORK

A theoretical framework is a collection of interrelated concepts, like a theory but not necessarily so well worked-out. A theoretical framework guides your research, determining what will be measured and what statistical relationships will be sought (Costello and Osborne, 2005: 1-33). The rationale for using simulated-based games as an experiential teaching approach in Economics education stems from the fact that it is a widely used and broadly applied teaching strategy in both Social Sciences and Economics and Management Science.

In recently published studies, the simulated-based experimental (SBE) approach was used for a variety of applications, including an in-class simulation game to assess student learning (Klassen and Willoughby, 2003: 1-37). Another study reported that the introduction of experimental games in the Finance education enhanced students' learning and instructors' teaching performances (Cabula and Toma, 2002: 121). I contend that a simulated-based experimental approach is effective, relevant and applicable for this study which investigates the advantages of using simulated games as an experiential teaching approach in Economics education.

Emanating from the above, the research question is: *Do simulated games as an experiential teaching strategy result in benefits (gains) for the instructor and student teachers in Economics education?*

To achieve the objective, the following specific questions were formulated:

- What are the benefits (gains) of using Economics simulation games as an experiential approach for the lecturer's teaching practice?
- What are the benefits (gains) of using Economics simulation games as an experiential approach for students' learning?

Purpose of the study

This study investigates the benefits (gains) of using simulated games as an experiential teaching approach in Economics education. To achieve the purpose, this study specifically investigates:

- The value (gains) of using Economics simulation games as an experimental approach for students' learning in the classroom.
- The value (gains) of using Economics simulation games as an experimental approach for the lecturer's teaching performance in the classroom.

5. Methodology

Sampling: Third-year BEd student teachers participated in the study. Only 129 BEd students who were registered for module EEE112, Elementary Economics, were selected as the proportional stratified sample for the study. 81% of the sample size was made up of female students (N=99) and 19% were males (N=30). A quota sampling of 10% (N=14) was randomly selected for the interviews. The interviewees accepted the official invitation and interviews were conducted directly after the 12-week period of the semester module. The researcher taught both groups in the mentioned period, comprising two contact sessions of 55 minutes per week for the first semester. This action research was done in the Department of Curriculum Studies in the Faculty of Education at the University of the Free State.

The setting and procedure for playing the games

Seven simulated games were played in relatively large lecture rooms at the Faculty of Education. The instruction sessions were conducted in both Afrikaans and English.

Ninety Afrikaans-speaking and 39 English-speaking students played the seven games. The classrooms were large enough and provided suitable space in which to accommodate all the students who participated in the games. Dates for Economics quizzes were diarised in the EEE 112 module. Students were randomly selected and divided into small groups to play the three quizzes. Other simulation games such as *The Quality Book Factory* on productivity and *Markets Interact* were explained and demonstrated by the lecturer in the classroom and then played by the students. Rules, criteria and outcomes of each simulated game were clearly communicated to students. Students were compelled to adhere to the rules and criteria of each game. They were penalised when failing to do so. The times allocated for the respective games varied between fifty-five minutes (55 min) and three hours and fifteen minutes (3 hours and 15 min) per game. Specific continuous assessment marks (grades) were allocated to each game as part of the final mark for the EEE112 module (see Table 1). The researcher acted as instructor (lecturer), observer, judge and quality controller during contact sessions.

Research instruments

Three instruments were used for data collection: A modular evaluation feedback form (MEF), a structured questionnaire, and interview questions. The Faculty of Education designed a MEF form to regularly evaluate lecturers' performances and the contents of learning materials. The students complete these evaluation forms directly after completion of a module at the end of each semester as part of their formative assessment. The rationale behind the use of the MEF is to promote the quality of all exit level qualifications. The EEE112 module happens to be one of the modules in the learning programme of the BEd qualification (CHE, 2007: 1-4). Registered EEE112 students completed the MEF form anonymously (N=129) and the lecturer received the results once the module was completed.

Questionnaire

A structured questionnaire – devised on the basis of an extensive study of the relevant literature - was completed by students (N=129). The questionnaire was based on a 4-point Likert scale (4=Strongly Agree, 3=Agree, 2=Strongly Disagree, 1=Disagree) aimed at determining the responses relating to Economics games as an experimental approach in the classroom. To test the reliability of the research results, Cronbach's alpha coefficient was calculated for items in the questionnaire. A calculated test for reliability showed that question 1 (α=0.8071), question 2 (α=0.8631), and question 3 (α=0.9901) were reliable items in the questionnaire.

Interviews: A quota sampling of 10% (N=14) was identified and randomly selected for the interviews by using student numbers. Open-ended questions were designed to obtain data. Interviews (N=14) were conducted and the responses recorded. The interviewees accepted the official invitations and 20-minute interview session were conducted directly at the end of the 12-week period of the semester module.

DATA ANALYSIS PROCEDURE

The data analysis procedure included two main phases: the descriptive statistical data analysis and the qualitative data analysis. Regarding the descriptive data, SPSS software was used for data storage and for calculation of frequencies and percentages. For the qualitative data, the content analysis method was used, as explained by Leedy and Ormod (2001: 221-234). The data was coded, themes were found, and the data organised and defined according to the codes and themes. Interpretations were then made. Miles and Huberman (1994: 321-344) described this process as "data reduction", "data display" and "conclusion drawing and verification".

6. RESULTS

LECTURER'S TEACHING PERFORMANCE

Students regularly evaluate academics at our faculty. The evaluations, which take place after completion of the module, are formative. The students complete the MEF anonymously and the lecturer gets the results once the module has been completed. The objective of the modular evaluation is to examine the lecturer's performance in four main skills areas: 1) Module guide design skills; 2) Lecturer's teaching skills; 3) Assessment skills and 4) Reflection skills. Each category consists of subcategories. The *modular guide design skills* consists of the following subcategories: (i) course content, (ii) application possibilities, functionality, acquisition of knowledge and skills and expectations of contact sessions. The *lecturer's teaching skills* consist of (i) well prepared for sessions, (ii) acted in professional manner, (iii) explains content clearly and (iv) effective facilitation. *Assessment skills* consist of (i) instruction details were clear and unambiguous, (ii) assessment criteria were available, activities were relevant and (iii) applicable to content and assessment of games were fair and reliable. *Reflection skills* consist of (i) logbook/diary of games played, (ii) debriefing to clear "muddy points" and (iii) effectiveness of facilitation during the games. The score for lecturer's teaching performance is structured on a Likert scale of 1=Poorly, 2=Mediocre, 3=Satisfactory, 4=Good and 5=Exceptional. A score of 5 indicates *Exceptional* performance and 1 indicates *Poor* performance. The higher the score, the better the lecturer's teaching performance in the related categories. The faculty requires a score of 3.5 or higher to be considered acceptable performance for these categories (see Table 3).

Table 3: Lecturer's overall teaching performance

Categories	Average	Minimum	Maximum	Standard Deviation (SD)	Standard Deviation for Mean
Modular guide design skills	3.98	3.61	4.21	0.2	0.0320
Lecturer's teaching skills	4.32	4.11	4.78	0.1	0.0336
Assessment skills	4.11	4.03	4.55	0.2	0.0225
Reflection skills	3.27	3.38	3.58	0.2	0.0209

Based on the data obtained in Table 3, the average scores of the categories in Lecturer's skills (4.32) and Assessment (4.11) reported as good performances as required by the Faculty. Modular guide (3.98) and Reflection (3.27) showed a satisfactory performance structured as required by Faculty's acceptable standard.

Table 4: Subcategories of modular design skills

Subcategories	Alpha	Average	Minimum	Maximum	Mean Score	Standard Deviation (SD)
Content contributed towards attainment of outcomes	0.88	4.33	3.22	5.10	1.88	0.4
Goal and outcomes were stated clearly	0.91	5.11	3.55	5.62	2.07	0.5
Contents is structured meaningfully	0.81	4.39	2.23	4.87	2.64	0.4
Study guide and instructions *are* user friendly	0.79	4.00	3.09	4.57	1.48	0.3
Valuable aid to learning	0.85	4.76	3.66	5.00	1.34	0.5

Based on data obtained in Table 4, mean scores and standard deviations for each subcategory in the modular guide section of the MEF were reported. As is evident from the table, the average scores per subcategory varied between 4.00 and 5.11 (Scales 1-5). The standard deviation (SD) varied between 0.3 and 0.5. The results in Table 3 indicate that the internal consistency was high per subcategory, varying between Content is structured meaningfully (0.81) and Goal and outcomes were stated clearly (0.91). The exception was the subcategory: Study guide and instructions are user friendly (0.79). The alpha coefficient for five subcategories was 0.84. The overall lecturer's performance of subcategories for modular guide averages ranged from 4.33 to 5.11 which indicated that scores were reported as good to exceptional performances as required by the Faculty's acceptable standard.

Table 5: Subcategories of lecturer's teaching skills

Subcategories	Average	Minimum	Maximum	Mean score	Standard Deviation (SD)	Alpha
Effective facilitation	4.98	3.61	5.41	1.80	0.2	0.88
Well prepared for sessions	5.77	4.11	6.78	2.67	0.3	0.93
Explained content clearly	4.11	4.03	5.58	1.55	0.2	0.61
Acted in professional manner	5.27	3.38	5.78	2.40	0.5	0.77

Based on the data obtained in Table 5, the average scores of subcategories for the lecturer's teaching skills ranged from 4.11 to 5.77, reported as good to exceptional performances. Well prepared for sessions (5.77) showed an exceptional performance structured as required by Faculty's acceptable standard. The standard deviation (SD) varied between 0.2 and 0.5. The results in Table 4 indicate that the internal consistency was high per subcategory, varying between Well prepared for sessions (0.93) and Acted in professional manner (0.77), except for subcategory Explains content clearly (0.61). The alpha coefficient for five subcategories was 0.79.

Table 6: Subcategories of assessment skills

Subcategories	Alpha	Average	Minimum	Maximum	Mean Score	SD
Instruction details were clear and unambiguous	0.58	4.33	3.55	5.10	1.55	0.2
Assessment criteria were available	0.83	4.11	4.05	5.62	1.57	0.3
Activities were relevant and applicable to content	0.98	5.39	4.43	5.87	1.44	0.4
Punctual feedback on assignments	0.80	5.00	3.09	4.57	1.48	0.3
Assessment of games was fair and reliable	0.93	5.76	4.16	6.00	1.84	0.5

Table 6 reported the mean scores and standard deviations for each subcategory in the assessment skills section of the MEF. As is evident from Table 6, the average scores per subcategory varied between 4.11 and 5.76 (Scales 1-5). The standard deviation (SD) varied between 0.2 and 0.5. The results in Table 5 indicate that the internal consistency was high per subcategory, varying between Activities were relevant and applicable to content (0.98) and Assessment of games was fair and reliable (0.93), except for the subcategory Instruction details were clear and unambiguous (0.58). The alpha coefficient for five subcategories was 0.84. The overall lecturer's

performance in subcategories for assessment skills averages ranged from 4.11 to 5.76 which indicated that scores were reported as good to exceptional.

Table 7: Subcategories of reflection skills

Subcategories	Alpha	Average	Minimum	Maximum	Mean Score	Standard Deviation (SD)
Debriefing to clear "muddy points"	0.78	4.33	2.22	5.10	2.88	0.2
Logbook/Diary of games played	0.91	5.41	3.05	6.62	3.57	0.6
Effectiveness of facilitation	0.55	3.39	2.13	3.17	1.04	0.3

Table 7 shows that the average scores per subcategory varied between 2.39 and 5.41 (Scales 1-5). The standard deviation (SD) varied between 0.2 and 0.6. The results in Table 7 indicate that the internal consistency was high per subcategory, varying between Logbook/Diary of games played (0.91) and Debriefing to clear "muddy points" (0.78), except for the subcategory Effectiveness of facilitation (0.55). The alpha coefficient for five subcategories was 0.74. The overall lecturer's performance of subcategories for reflection skills averages ranged from 3.39 to 5.41 which indicated that scores were reported as good to exceptional performances.

7. STUDENTS' LEARNING GAINS FROM ECONOMICS GAMES

Respondents indicated that the seven games that were played in class were valuable contributions to their learning.

The data in Figure 1 indicate that students viewed the simulated games as valuable contribution to their learning. The majority of the respondents (N=118) indicated that they agreed (74.9%) to strongly agreed (32.8%) that all the games were valuable contributions to their learning. Students indicated that they learned more from the games than from the traditional method.

I learned more from the games economic concepts and content
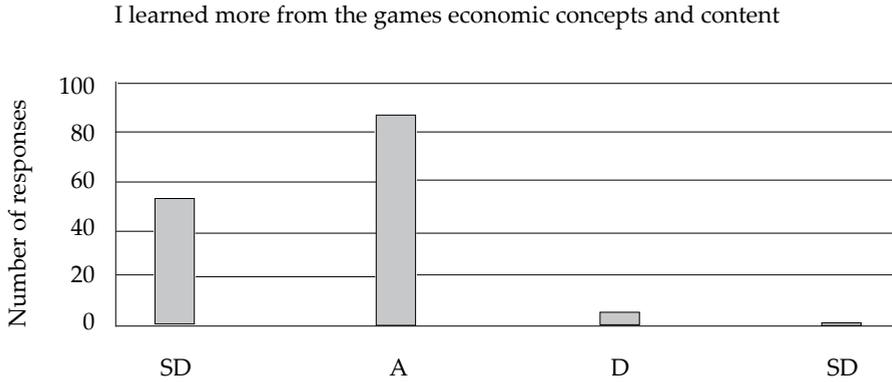
Figure 1: Students learned more from the games Economics concepts and content

Data in Figure 1 indicate that students learned more from the games Economics concepts and content. The majority of the respondents (N=84) indicated that they agreed (65.1%) and 52 respondents strongly agreed (40.3%) that the games enhanced and promoted their Economics conceptual ability. The application of knowledge in the games advanced their understanding of concepts relevant to their learning. Students also indicated that they enjoyed interacting with their classmates during the simulated games.

I enjoyed the ability to interact with my classmates during the games
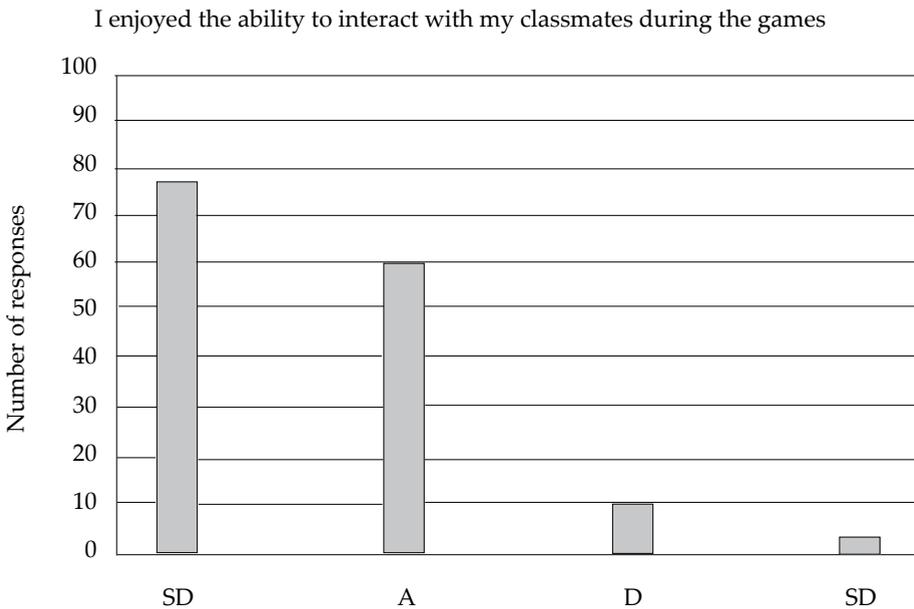
Figure 2: Students' interactions during the games

According to Figure 3, students indicated that they enjoyed interacting with fellow group members during the games. The majority of the respondents (N=139) indicated that they strongly agreed (49.7%) to agreed (40.0%) that all the games enhanced and promoted interaction, serving as a social laboratory. Students indicated that they enjoyed the games as an alternative to the lecture method.

I enjoyed the simulated games as an alternative to the "lecture" method
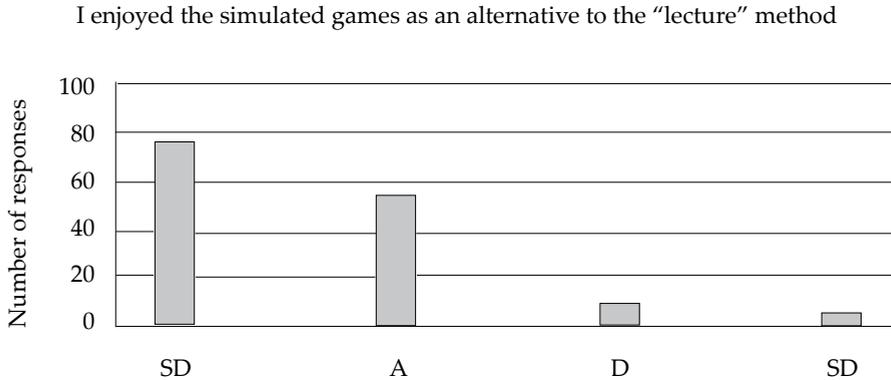
Figure 3: Simulated games as alternative to lecture method

Based on the data presented in Figure 3, students indicated that they enjoyed simulated games as an alternative to the lecture method. The majority of the respondents indicated that they strongly agreed (53.0%) to agreed (39.5%) that they enjoyed all the simulated games compared to lecture method. Students ranked the classroom games according to their opinion on what they got the most from in terms of learning and they motivated their responses.

Table 8: Ranking of Economics simulated games that enhance student learning (N=129)

Seven simulated games played	Ranking	No. of responses per game	% of no. per game	Motivation on learning
Decision-making and scarcity: UFS cap auction	4	99	76.7	Individual accountability for own actions in bidding process. Scarce resources is money to participate in real world
Productivity: The Quality Book Factory (NCEE, 2005)	2	113	87.5	Hard-working, labour specialisation, proud in producing a product, team-work, sharing ideas in making your quality book for the market
Dairy Farmers versus Food Retailers (milk/cheese prices)	5	87	67.4	Business ethics, dealing honesty in the markets. Look out for market information, interaction with other role-players

Seven simulated games played	Ranking	No. of responses per game	% of no. per game	Motivation on learning
The Market Never Stands Still	7	68	52.7	Consumers, business, government and foreign trade influence decision-making. Understand the factors influencing supply of demand curves in the market
Markets Interact	6	79	61.2	How aggregate demand and supply in all business operates, market price determined by supply and demand
Economics quizzes	3	104	80.6	Think-pair and share information to obtain grades. Knowledge, skills to interpret or apply Economics concepts and content.
Fiscal policy: A Two-Act play (NCEE, 2005)	1	126	97.6	Active participation, Interaction between role-players in the economy. Role-play activity, motivate to cooperate with group members pertaining to different roles. Trust and honesty to deal with real Economics issues. Government interference in market operations. South African Reserve Bank's monetary or fiscal policy influences the market.

Rank of games that enhance knowledge, skills and values
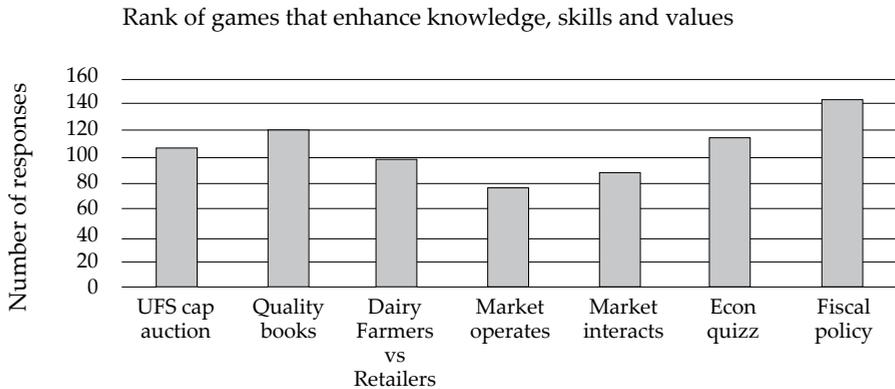
Figure 4: Importance of games played in classroom

Based on the data in Table 8 and Figure 4, students ranked (importance) the games in accordance with enhancing their knowledge, skills and valuable contribution to their learning. Students ranked the importance of the following simulated games: #1-Fiscal Policy: A Two-Act play (98.6%); #2-Productivity: The Quality Book Factory (83.1%);

#3-Economics quizzes (77.0%); #4-Decision-making and Scarcity: UFS cap auction (73.6%); #5-Dairy Farmers versus Food Retailers (66.9%); #6-Markets Interact (66.1%), and #7-The Market Never Stands Still (52.7). Students indicated the importance (ranked) and motivated (valued) that the simulated games enhanced their learning skills through these interactive, participative and experimental teaching strategies.

Table 9: The effects of simulated games on student learning in Economics education (N=129)

Question 1. To what extent do you agree with the following statements regarding the games?	Minimum	Maximum	Mean scores	SD	Alpha
Q1.1. Promoting my learning and academic achievement	2.0	5.8	3.46	0.5	0.97
Q1.2. Improving my retention and accommodating my own learning process	2.2	5.1	2.93	0.4	0.86
Q1.3. Enhancing my satisfaction with my learning experience	2.3	4.8	2.52	0.5	0.85
Q1.4. Helping me to develop business ethics and skills in effective verbal communication code of conduct	2.0	4.1	2.19	0.4	0.70
Q1.5. Developing my social skills and interdependence	2.3	4.8	3.09	0.4	0.81
Q1.6. Promoting my self-esteem and confidence levels	1.8	3.7	1.73	0.3	0.79
Q1.7. Helping me to promote positive race relations among us	2.3	4.7	2.43	0.4	0.80

Data as contained in Table 9, mean scores and standard deviations for each item in the section of the seven simulated games indicate that the students' learning was enhanced. Table 9 indicates that the average scores per items varied between 1.7 and 3.4 (Scales 1-4). Standard deviation (SD) varied between 0.3 and 0.5. The coefficient alpha was computed for each item and for the total instrument to determine the internal consistency of each item. The results in Table 8 indicate that the internal consistency per item: Q1.6. Promoting my self-esteem and confidence levels (0.79) and Q1.1. Promoting my learning and academic achievement (0.97) was high, except for Q1.4. Helping me to develop business ethics and skills in effective verbal communication code of conduct (0.70). The alpha coefficient for all 7 items for this study was 0.81%.

8. INTERPRETATIONS OF INTERVIEWS

The results from the face-to-face interview responses of the quota sampling (N=14) were recorded, analysed and reported. Four themes emerged from the analyses of participants' responses. An analysis and discussion of interviewees' responses are outlined below.

Positive experiences and motivation of Economics simulation games supported students' concentration levels.

Students were positive, motivated and alluded to the lecturer's professionalism with regard to Economics lessons' preparations and planning, presentations of simulation games, facilitation and the use of relevant assessment activities during class sessions (Van Wyk, 2009: 1-12). Durkin and Barber (2002: 373-392) mentioned that computer games supported positive adolescent development skills. Another study conducted by Butler, Phillmann and Smart (2001: 257-259) reported that through simulated games active learning within a lecture increased the impact of short, in-class writing exercises.

In this study some respondents were of the opinion that Economics simulation games were well-planned, well-designed and professionally presented to give students ample opportunities to learn and practise during contact sessions. Students also indicated that their personal relationships improved and that they developed professionally in terms of interdependence and personal interaction. There was an improvement in their socialisation with fellow students through support during the classes. Some of the key extracts from the interview-transcripts are given below.

Students (*Jessica*, *Riaan* and *Tumi*) noted:

> The lecturer was highly motivated when presenting the games. I was also motivated to participate. Further, we were impressed by how the lecturer executed his roles and responsibilities during our sessions. He was absolutely professional in his lesson planning, always on time to present a lesson. He was really helpful and gave us support.

One respondent (*Hanlie*) mentioned:

> We gained valuable and constructive criticism after our simulation game. It was an excellent way to reflect on one's own teaching practice. The more we practised, the more our professional confidence grew. Our lecturer was accessible and available and we were able to consult with him if we struggled with parts of our assignments.

Another respondent (*Michelle*) replied:

> I was really impressed with how motivated the lecturer was and the highly practical skills he demonstrated when using the Economics simulation games. The Economics quizzes were value-added experiences for us.

As far as socialisation is concerned, one student (*Murial*) noted:

> The group I was in for the simulation of The Book Factory on productivity was diverse (Nomvula, Jan-Pierre, Gladys, Lin-Chi and Anita). We had to be sensitive when using examples concerning specific career opportunities. We made provision for differences and accommodated other group members in our simulation game (We became good friends!!).

Business ethics skills in Economics games

A study was conducted that games proved effective in positively changing students' perceptions of ethics in business (Glass and Bonnici, 1997: 183-197). The seven games played in this study have a set of rules, criteria and code of conduct. Students (players)

must adhere to these rules such as honesty, completion of tasks on time, how to conduct a fair deal as a business person otherwise be eliminated from the game and forfeit CASS marks (Van Wyk, 2008: 5-6; Keys and Wolfe, 1990: 305-332). Based on these experiences and on the feedback given by participants on some of the games, their attitudes changed positively in dealing with how markets operate. Research studies done with market and business games generally include business ethics skills activities and these games had positive effects on student learning (Coyne, 2003: 199-203; Gredler, 1996: 334; Price, 1990: 111). In this study interviewees indicated that business ethics in Economics games enabled them to practise decision-making skills that called for ethical standards and their consequences in the classroom. They believed that through this experience, they developed an awareness of and appreciation for the complexity of ethical decision making during their teaching practice.

SOME OF THE KEY EXTRACTS FROM THE INTERVIEW TRANSCRIPTS

A student (*Riaan*) noted:

> I refer to 'The Book Factory' game. It enhanced my confidence in understanding the role of productivity in the economy. In practice one takes decisions that have serious consequences on one's actions. You must play the game in accordance with ethical business rules. You must be honest in dealing with other role players in the market otherwise you will be caught for dealing unethically. The lecturer acted as market referee controlling business operations, like government inspectors**.**

Another student *(Nthabiseng)* responded:

> I appreciated the way the lecturer acted as an instructor, observer, referee and judge during our games. I believe there must be 'checks and balances' in the markets or there must be government involvement. Otherwise, markets will collapse. I must take full responsibility for my decisions in terms of ethical considerations when dealing with business contracts.

SOCIAL SKILLS AND COLLABORATIVE LEARNING

The effectiveness of the games enabled students to acquire and improve their social skills. These social skills were interpreted as interpersonal situations such as the abilities to bargain, persuade, collect and categorise information in a manner that facilitated decision-making, problem-solving, competition, cooperation and command. Research studies reported that positive effects such as positive interdependence, face-to-face interaction, sharing, caring and support developed among students when they played together (Durkin and Barber, 2002: 373-392; Media Analysis Laboratory, 1998: 25; Prensky, 2001: 339; Rosas, Nussbaum and Cumsille, 2003: 71-94; Strasburger and Donnerstein, 1999: 129-137). Interviewees expressed positive sentiments regarding the application and effectiveness of teaching with Economics simulation games. They indicated that this teaching tool enhanced their ability to master the application of the strategy for effective teaching. A positive comment expressed in this regard set out the gains of such a teaching tool.

One student (*Mandy*) said:

> The games we played enhanced my knowledge of the application of the Economics simulation games in the Decision-making: UFS cap auction game. I preferred this experiential strategy because it enhanced my confidence in understanding Economics concepts and content, for example the Fiscal Policy: A Two-Act play. I enjoyed the role play through collaborative learning. We helped and supported each other in the Book Factory activity. If you cheated in the production process, the team would forfeit valuable continuous assessment marks for the EEE112 module.

Three respondents (*Riaan, Tumi* and *Sandra*) mentioned that a specific method, namely the think-pair-and-share technique used by the lecturer enhanced their ability to grasp the teaching tool, Economics content and concepts positively: "Every third class session, we moved to a different group for the Economics quizzes. We learned from each other, we learned about diversity. We work together to solve our different tasks and make decisions on mutual agreement. In doing so we shared, cared and supported members working on each task. This in turn improved my social interdependence skills such as communication, effective debating of Economics issues and defending our position in: "Market in Wheat Trading, How Markets Interact and The Market Never Stands Still."

Contextualised learning

Research studies revealed increased contextualised learning of students that improved their "spatial representation", "iconic skills" and "visual attention" (Subrahmanyam, Greenfield, Kraut and Gross, 2001: 7-30; Greenfield, de Winstanley, Kilpatrick and Kaye, 1994: 96-125). The games played in this study provided opportunities for students to investigate social processes - a social laboratory. Interviewees experienced that through their own actions and observed reactions of other participants in a controlled environment. All the information gained could be used to test principles, theories, and business, economics, or financial relationships. Students experimented with relatively simple inside scenarios compared to those in the real world.

Some of the key extracts from the contextualised learning interview transcripts

Respondents (*Hanlie, Tumi, Sandra* and *Murial*) noted that the application of relevant and contextually used Economics simulation games must be brought in line with the realities of the South African situation. "The examples used in the EEE122 study guide must be representative of our country. Some students were using examples which were not relevant to South Africa Economics issues. One student used economic data from the United States and Botswana instead of South Africa's economy which is more applicable when explaining the markets of your simulation game".

Students indicated that more opportunities for practical sessions for students should be provided during contact sessions. A respondent (*Nthabiseng*) noted: "I proposed more sessions per student for presentation in our classes. I believed more practical sessions will strengthen our teaching skills."

The effectiveness of applying simulation games depends on the availability and relevance of specific topics pertaining to new concepts and content within the students' frame of reference. Knowledge and skills then have to be applied to relevant simulation game situations which, in turn, will add value to their personal and professional development in the subject (Van Wyk, 2009: 23 and 2007: 1-3).

A summary of the findings of the interviews reinforced the participants' earlier evaluations of MEF. Structured question results revealed that Economics games enhanced their learning through positive experiences and motivated them by increasing their concentration levels of Economics concepts and content which they can now apply with confidence in real-life situations. They also mentioned that the simulated games improved their business ethics skills such as honesty and fairness, and helped them to improve their effective communication skills, interrelationship skills, presentation skills and creativity skills through role-playing. Economics games expanded their understanding of the functioning of cooperative learning and collaborative exchanges which they can now apply in a contextualised learning environment.

Based on the results of the descriptive data analysis and transcript themes that emerged from the interviews, an evaluation of the lecturer's teaching performance and students' learning will be discussed with specific reference to the advantages of simulated games in Economics education.

9. Discussion

The results of this study are encouraging and add to the body of information of other research studies in this regard for introducing simulated games as an experimental teaching strategy (Tsigaris, 2008: 1-23; Van Wyk, 2009: 1-12, 2008: 1-34 and 2007: 231-243; Kumar and Lightner, 2007: 1-34; Kaplan, 2007: 23-45; Klassen and Willoughby, 2003: 12-25; Cebula and Toma, 2002: 33-39). The researcher contends that the use of simulations and games for Economics education for this study was an appropriate experimental approach utilised in exploring the gains for the lecturers' teaching performances and students' learning for this particular study. In his study Tsigaris (2008: 1-23) reported on a number of benefits that accrue to the instructor for using simulation games in Economics education that offer further support for previous findings of similar research studies that applied an experiential approach. Brauer and Delemeester (2001: 23-56) point to a number of benefits that accrue to the instructor from using experimental classroom games such as a break from routine, motivation, fun and repetition of Economics. One of the most important benefits to the instructor is improvement in teaching which leads to tenure and hence job security as well as promotion.

The results from the MEF student evaluation revealed that the modular guide design averages ranged from 4.33 to 5.11, indicating that average scores were reported as good to exceptional. The design of the modular guide is influenced by the way the games were perceived in the students' MEF evaluations. According to Kumar and Lightner (2007: 1-56), factors such as objectives and goals, matching of level of difficulty of the games to the level of ability of the students influenced the design

process of the modular course. They also mentioned that the purpose of the games needs to be well-defined and should provide appropriate challenges. Each section must have clear instructions and debriefing or evaluations of each unit must take place. In addition, lecturer's teaching skills ranging from 4.11 to 5.77 were reported as good to exceptional performances. This indicates that the lecturer prepared well for the contact sessions (5.77), acted in a professional manner (0.77) and explained the contents clearly (0.61). Findings revealed that the lecturer's teaching practice showed an accepted performance standard as required by the Faculty.

Cebula and Toma (2002: 1-33) reported in a study on the effect of classroom games on student learning and instructor evaluation. The findings of their study revealed that the use of classroom gaming exercise raises instructor evaluation and enhances student learning outcomes. From the interviews it became clear that students were positive, motivated and alluded to the lecturer's professionalism with regard to Economics lessons' preparations and planning, presentations of simulation games, facilitation and the use of applicable assessment activities during class sessions. The lecturer's assessment of students' performances averages ranged from 4.11 to 5.76, indicating that scores were reported as good to exceptional performances. Students indicated that the assessment instruction details were clear and unambiguous. The assessment criteria were available in the modular guide. Most of the activities were relevant and applicable to the Economics content.

Finally, the assessment instruments used for the seven games were transparent, fair and reliable. The MEF evaluations revealed that the lecturer's teaching performances ranged from 3.39 to 5.41, indicating that scores were reported as good to exceptional performances. The lecturer gained by keeping a logbook/reflective diary of incidents during class sessions. Debriefing of lessons presented and evaluating his/her own teaching practice supported the lecturer's reflective competency. The negative aspects were as follows: students may not understand or learn anything from the games, and these games may prevent students from learning course content if they are played too often. Rather than using games, more productive course activities could be planned, which will be more useful for the students. Some games may restrict creativity.

The second part of the discussion focused on the gains (benefits) on students' learning. Students viewed the simulated games as contributing positively to their learning. The majority of the respondents (N=118) indicated that they agreed (74.9%) to strongly agreed (82.8%) that the games were valuable contributions to their learning. Cole (1996: 45-56) reported that playing games had a positive effect on students' learning in the long term (cited in Subrahmanyam, Greenfield, Kraut and Gross, 2001: 2-7). Another study conducted by Rieber (1996: 1-23) on students' learning revealed that the use of simulations and games in the blending of micro-worlds enhanced critical thinking and problem-solving skills. Rieber reported that through debriefing and feedback, learning by doing, learning from mistakes and cooperation contributed to student learning after each game. According to the MEF evaluation of this study, reflection skills by the lecturer's performances ranged from 3.39 to 5.41, indicating that scores were reported as good to exceptional performances as required by the

Faculty's standard. The seven simulated games (see Table 2) played helped students to have fun and enjoy themselves in the classroom.

The effectiveness of these simulated games promoted engagement, interactivity, and active participation of students in the Economics education classroom. The majority of the respondents (N=138) indicated that they strongly agreed (53.0%) to agreed (39.5%) that they enjoyed the simulated games compared to the lecture method often used by other lecturers in the Faculty. The researcher contends that the simulated Economics games provide a great deal of highly interactive feedback, which is crucial to learning. Economics games also provided the students with a variety of decision-making situations which are frequently encountered in the real world. Some students gave other students first-hand advice since they had been confronted with identify problems and were able to construct real-life solutions to these problems while playing these games.

According to Rieber (1996: 12), gaming elements are linked to enjoyable activities that promote the flowing stage of the game. Thus, gaming activities have the potential to engross the student into a state of flow and consequently cause better learning through focus and pleasant rewards. Gredler (1996: 4-23) states that intellectual skills and "cognitive strategies" are acquired during academic games. Subrahmanyam *et al.* (2001: 33) confirmed that games have cognitive development effects on visual skills including "spatial representation" "iconic skills" and "visual attention". Students have the opportunity to use decision-making, problem-solving and communication skills previously learned, and refine them into marketable skills. New skills such as business ethics, diversity and honesty were also learned during the games played. Students experienced real-life forces via cooperation and collaboration learning while developing problem-solving skills in teams. An interviewee noted: "We must play the game according to business rules which have ethical consequences". Practice being honest while playing the game and making a transaction with other role-players in the market. Dishonesty and breaking the rules will result in getting caught for unethical and unfair business practices.

The Economics games became a bridge that linked students to real-life market operation experiences. The use of simulated games in the Economics classroom are a device for motivating students and increasing students' conceptual and concentration levels: Economics games were effective when attempting to alter the attitudes of students. They became more positive towards the experiential approach to teaching and learning in Economics. The games motivated students to take responsibility for their own learning which, in turn, led to intrinsic motivation contained by the method itself (Rieber, 1996: 2). Malone (1980: 33) and Malone and Lepper (1987: 2-14) mentioned four characteristics of games that increase motivation and eagerness for learning: challenge, fantasy, curiosity, and control. This allowed the students to explore new concepts and ideas without fear of repercussions. Students demonstrated their individual abilities in an environment different from the traditional lecture-room setting.

The games effectively enabled students to acquire factual and conceptual knowledge and retain the knowledge and acquired skills. Students' communication skills were refined. Oral communications improved as individuals learned to give and

understand directions, clarify tasks, and share in problem-solving, decision-making, presentation and demonstrations during the games. One student responded: "This improved my social interdependence skills namely: communication skills, effective debating of Economics issues and defending our position on "Market in wheat trading" and "How Markets Interacts and The Market Never Stands Still." Students ranked (see Table 8) the following games as enhancing their knowledge, skills and valuable contribution to their learning: The Fiscal policy; Two-Act role-play activity, The Book Factory on productivity, Economics quizzes, Decision-making: UFS cap auction bidding allocations, A Market in Wheat Trading, Markets Interact, and The Market Never Stands Still. The majority of the respondents (N=119) indicated that they strongly agreed (79.7%) to agreed (60.0%) that all the games enhanced and promoted interaction, which served as a social laboratory. Another student mentioned: "Every third class session, we rotated to a different group for the Economics quizzes. It enhanced our interpersonal skills. Through this we share, care and support members on task allocated". The experimental games enable students to acquire and improve social skills and gain confidence in their ability to employ those skills effectively during the games in the classroom. The use of simulated games as a social laboratory provided students an opportunity to exercise the social skills and knowledge previously acquired, to utilise them in an artificial environment, and to gain some comprehension for the complexities of selected social, Economics, and business processes. Students with all levels of abilities and skills work together successfully. The value of teamwork was not overlooked. Students learned the importance of working together and of cooperative learning.

10. Conclusion

This chapter presented evidence about the benefits (gains) that accrued to the lecturer's teaching performance and to the students' learning as a result of running different simulation-based Economics games in the Elementary Economics module during the first semester of 2008 (February to June). The majority of the literature reviews attempt to measure the effect of experimental games that accrue only to student learning in terms of academic performances. No other studies include lecturer's teaching practices.

To the best of the researcher's knowledge there is only one study conducted in 2008 outside South Africa that examines the benefits that accrue to the instructor's teaching performance as a result of introducing classroom experimental games in an introductory Economics course. In order for experimental games to be an effective teaching strategy, a necessary condition for success is the enhancement of the lecturer's teaching performance which, in turn, impacts on the students' motivation to study and perform better academically than when using the lecture method.

The lecturer's teaching performances were evaluated as good to exceptional in performance and were in accordance with the Faculty's acceptable standards. This indicates that the lecturer's teaching performance improved by the use of simulated games in Economics education. Simulated games increased academic performance,

social skills and reflective skills of both the lecturer and the students. It would appear that these games enhanced the teaching and learning capacity of those who presented and participated in the experimental games. Despite the positive results in support of these seven experimental games or other active learning methods yield, only a few studies have been conducted in teaching Economics education at universities of faculties of education. Further research needs to be conducted by employing more experimental games in teaching and learning environments.

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CHAPTER 7

Moving towards interactive formative assessment

Jabulisile Ngwenya
University of KwaZulu-Natal
Ngwenyaj@ukzn.ac.za

1. INTRODUCTION

Feedback is regarded as a fundamental element of formative assessment to plan future instruction and to provide further learning opportunities. This chapter reviews research on feedback with the focus on feedback as the teachers understand it. Literature shows that, although feedback is crucial in promoting teaching and learning, the type of feedback and the way it is given to learners can cause confusion and misunderstandings. Although there is a move to descriptive feedback, there is still a need for feedback that will encourage interaction between the teacher and the learners and among the learners during classroom conversation. Such feedback is initiated by questioning and requires effective listening while both teacher and learners are learning from each other. A model of interactive formative feedback is then proposed that emphasises interaction, effective questioning and listening during classroom conversation.

Black and William (1998) noted that assessment can only become formative when information from assessment is used to adapt teaching and learning for the benefit of learning. This information is given to learners by the teacher or other learners in a form of feedback during classroom interaction. It does not only provide information to learners about how well they are performing but also the learners' responses to that information.

Feedback is generally regarded as a crucial element of assessment and a significant factor in influencing teaching and learning. Effective feedback encourages teacher and peer dialogue, facilitates the development of self-assessment in learning, provides information to teachers and learners that can be used to shape teaching and learning, and provides opportunities to close the gap between current and desired performance (Black, Harrison, Lee, Marshall and Wiliam, 2003; Taras, 2006). Although feedback is recognised as an important part of formative assessment it is still a challenge to both teachers and learners. In support of this, a number of research studies have been conducted where teachers express their frustration concerning feedback. The premise underlying this review is that effective feedback can significantly improve teaching and learning if it is provided during communication in the classroom conversation. This chapter therefore focuses on feedback as a form of communication where teacher and learner interact during classroom conversation.

2. MEANING OF FEEDBACK

According to Shute (2008), formative feedback is the information that is communicated to the learner with the intention to modify his/her thinking or behaviour for the purpose of improving learning. Assessment without feedback produces no learning. Therefore assessment activity can help learning if it provides information to be used as feedback by teachers and learners, in assessing themselves and each other, to modify the teaching and learning activities in which they are engaged. It is therefore of little use if the information obtained from it is not used in teaching and learning. It is a form of communication between the teacher and the learner that is important in teaching and learning.

3. HOW EFFECTIVE IS FEEDBACK?

In a number of articles that have been written on feedback researchers agree that feedback increases learning and performance. The choice of feedback by teachers results in misconceptions and confusion concerning feedback because of its complexity and timing.

COMPLEXITY OF FEEDBACK

Length and complexity of feedback is another factor that needs to be considered when assessing learners. Feedback seems like a means of giving a grade rather than helping students to learn. Learners seldom know how to improve their assessment because of few comments or advice and lack of follow-up action and guidelines to correct mistakes made. On the other hand, teachers are concerned that learners do not read comments (Duncan, 2007; Smith and Gorard, 2005) and are only interested in their marks and grades. They do not use feedback for learning purposes but they only use it to see how well they have done, especially compared to others. This is revealed when they are given a second chance to do their work where they do not incorporate feedback advice into subsequent tasks. Feedback is a form of communication between the teacher and the learner (Brown, 2007; Hounsell, 2008) but learners do not find the language used by teachers to communicate feedback easy. What contributes to learners' negative perceptions of feedback is their inability to fully understand the language that is used when commenting (Brown, 2007; Hounsell, 2008; Shute, 2008). They also pointed out that teachers usually take for granted that learners will understand their comments and use them accordingly. As a result learners often fail to interpret written comments.

TIMING OF FEEDBACK

Timing of feedback provided to learners is cause for concern as it impacts upon the usefulness of feedback. How timely it is also plays a considerable role in the effectiveness of learning. Numerous studies have been conducted on learners' voices and conceptions of feedback (Black and Wiliam, 2004; Harlen, 2005; Carles, 2006; Rust, 2003; Paulos and Mahoney, 2007; Weaver, 2006). These studies show that

learners are complaining that in many cases they receive feedback from teachers which not only causes confusion but also results in misconceptions. Late feedback often contributes little to learning because it is given too late for learners to use it. In addition, written feedback does not help learners because it is given to learners after a task is completed and in large amounts. Oral feedback can be given to learners to supplement written feedback. Immediacy of feedback is important to ensure that learners have time to act on it in order to improve learning. In a study conducted by Corbell and Anderson (2001) immediate feedback proved to be the most effective way of improving teaching and learning. Immediate feedback occurs where there is effective oral communication in the classroom. Lack of feedback makes communication a one-directional process.

Types of feedback

Complexity and timing of feedback cause confusion and misconceptions in the classroom because of the type of feedback used by the teachers. Tunstall and Gipps (1996) conducted a small-scale research on the different types of feedback in the classroom. The feedback was considered rewarding and punishing, approving or disapproving, specifying attainment or specifying improvement, and constructing achievement or constructing the way forward. From these categories Tunstall and Gipps (1996) found that feedback can be evaluative, thus judgmental, or descriptive, thus task-related. According to them, rewarding or punishment and approving or disapproving can lead to performance-goal orientation, which is evaluative. Specifying attainment or specifying improvement and constructing achievement or constructing the way forward can lead to a mastery goal orientation, which is descriptive.

Evaluative feedback measures learners' achievement with a score. It aims to summarise achievement not to give guidance on the improvement of reasoning. In their study Black *et al*. (2003) found that giving grades or marks distract learners from formal formative feedback. Marzano, Pickering and Pollock (2001) are of the opinion that feedback needs to be corrective in nature, timely, specific and involve learners. They found that telling learners that their answers are wrong or right has a negative effect on their achievement. Motivational feedback is intended to encourage and support the learner. The aim of giving motivational feedback is to make the learner feel good not to give guidance and to improve the learner's reasoning. Torrance and Pryor (1998) found that teachers gave feedback in terms of short-term rewards, praise and team points such as 'smiley face' stickers rather than detailed comment on how to develop an idea further or help with specific problems. These external rewards have been shown to encourage competition among the learners without improving his/her own understandings.

On the other hand, descriptive feedback provides opportunities for the learner to make adjustments and improvements towards mastery of assessment standards (Barry, 2008). Learners can use descriptive feedback to enhance motivation and learning, to encourage reflection and to clarify their progress (Crisp, 2007). Barry (2008) used descriptive feedback to strengthen her learners' communication skills and their ability to reflect on their own learning process in mathematics. In her class

descriptive feedback was treated as a dialogue between her learners, as a reflection on their own learning process. When learners are given an opportunity to reflect on their own and their peers' work, they are going beyond merely indicating right or wrong answers.

In her study Rogers (2006) reviewed literature on descriptive feedback. She traced the process of feedback back to Dewey's concept of reflective thinking. She mentions that the power of students' description of their own learning, provided in dialogue, is the central role for meeting their needs and creating the trust and community in a classroom. Rogers does not view descriptive feedback as self assessment. She adds that descriptive feedback occurs when students have sole authority over their internal experiences as learners. Rodgers (2006) emphasises the importance of giving learners an opportunity to reflect during descriptive feedback. She mentions that teachers and learners are engaged in dialogue during reflection. Rogers points out that the purpose of descriptive feedback is to gather information about what a student has learned and how s/he learned it as well as for each student to be aware of his/her own learning processes. According to Rogers, the main focus of descriptive feedback is on the student. Although teachers and learners engage in a dialogue, the main focus is on communication skills and their ability to reflect on their own learning process. He focuses only on students providing the descriptive feedback to reflect on their learning. Marzano, Pickering and Pollock (2001) focus on the descriptive feedback given by the teachers. Black and Wiliam (1998) emphasise interaction for teachers to better understand their learners' progress. O'Conner in his study discusses the importance of using descriptive feedback rather than evaluative feedback. Black and Wiliam's as well as O'Conner's beliefs about feedback are similar and in agreement with the findings of Marzano, Pickering and Pollock.

What is evident from this review of literature is the complex and inadequate feedback provided at any time by the teacher which sometimes leads to confusion and misunderstandings. Complex and inadequate feedback results from the choice of feedback by the teacher. Although Rogers (2006) views descriptive feedback as the solution to evaluative and motivational feedback, it places more emphasis on learners. She does not emphasise the importance of questioning and listening during interaction. Therefore descriptive feedback does not emphasise the importance of high-order questioning and listening where teachers and learners interact during classroom conversations.

These misconceptions and misunderstandings which result in differing perceptions of feedback can be reduced by means of assessment dialogues which emphasise the importance of teacher and learner interaction. Questioning is used to initiate classroom conversation with the aim of providing effective feedback. Early studies on teacher questioning and feedback focused on the IRE or IRF pattern. More recent studies, however, have focused on teacher talk that encourages learner involvement during assessment. Ruiz-Primo and Furtak (2007) expanded on this IRE structure by identifying the ESRU model of informal formative assessment. Although they focus on assessment conversation in the context of scientific inquiry which encourages high-order thinking skills, their levels of interaction are not clear. They emphasise the teacher's actions during interaction.

In their model of feedback, Hattie and Timperly (2008) suggest that effective feedback must answer three major questions asked by a teacher or by a learner: *Where am I going? How am I going?* and *Where to next?* These questions are based on the goals which teachers and learners want to achieve, progress they are making towards the goal and the activities that need to be done to make better progress. Answers to these questions depend on the levels and extent of interaction between the teacher and the learner during classroom dialogue. These include, posing a question, responses from learners, question from response (to give reasons for responses), clarification of responses, reaching consensus and action towards responses. During this interaction more emphasis is placed on questioning and listening for both parties. Therefore the present model of feedback will draw from Ruiz-Primo and Furtak's model of formative assessment.

Feedback as communication

Feedback is viewed as an integral part of communication. This communication is a form of classroom dialogue between the teacher and the learners and between the learners during the assessment process in class. Teacher and learner conversations during teaching and learning are a vital part of formative feedback. These conversations depend on the questions teachers ask when giving instructional activities. Therefore developing questioning is usually the first move in setting up interactive classrooms conversations where dialogue flourishes. Questions are regarded as a means of initiating productive dialogue. During interactive feedback teachers and learners interact and communicate throughout the lesson.

Questioning in interactive feedback

Teaching means discussing and asking questions while learning means engaging in a discussion and answering questions. Current research focuses on creating more challenging and meaningful classroom questions. In many instances, however, teachers often ask closed questions which require one pre-determined correct answer which is already known to the teacher. Such questions are restricted to knowledge recall where feedback is given as correct or wrong answer. Other studies show that even if teachers ask higher order questions, learners continue to give lower level answers. The clarity and specificity of the teacher's question may result in higher order questions eliciting lower level responses. Teachers are encouraged to use questions and classroom discussion as an opportunity to increase their learners' knowledge and understanding (Black and Wiliam, 1998). Learners should be given open questions to encourage them to think beyond content knowledge. This enables the teacher to develop learners' understanding and to promote critical thinking. Such questions allow for a range of responses. Therefore teachers should give learners time to respond by allowing them to discuss their thinking in pairs or in small groups (Chin, 2006). By so doing they can give feedback to one another and respond in a variety of ways while giving different answers.

Feedback usually concentrates more on identification of weaknesses than strengths. In other words, teachers concentrate more on the right answer. To use feedback

effectively wrong answers also need to be examined. Emphasis should be focused on the process involved in finding the solution even if the answer is wrong. Learners should be encouraged to explain the process and procedures used in solving the problem. Feedback should encourage critical thinking in learner's responses.

According to Sullivan and Liburn (2004), higher order questions necessitate the understanding of an aspect and its relationship with other aspects. Such questions encourage learner involvement because learners will be expected to discuss their answers in groups. Learners can learn by answering the questions and the teacher learns from learners' attempts, and there may be several acceptable answers. Therefore all learners are involved to give alternative answers and share their responses with partners and the rest of the class. These questions have the potential to uncover the unintended conception from the learners. Burns (2005) found that asking learners to explain their answers helps to clear misunderstandings on the part of the learner and help the teacher to improve his/her teaching strategies for future lessons on the topic. On the other hand, learners' incorrect response or unexpected question during classroom conversation can help to make the teacher aware of a learner's misunderstanding. The teacher's reaction to the response is very quick, spontaneous and flexible because it can take different forms. The teacher can respond with a question, elicit other points of view from other learners, start a discussion or repeat an activity.

Communication and listening

On the other hand, the teacher may also distort learner's responses. There is a relationship between assessment conversation and listening. Providing immediate feedback requires effective listening strategies from both parties. During formative assessment learners may be lost due to blockage in feedback from lack of communication and listening skills. Poor listening strategies may result in inadequate response and blockage in feedback. However, inadequate response may result in confusion or misconception on the part of the learner. Teachers should ensure that response from the learners is understood and interpreted through active listening (Yorke, 2003) in order to give adequate feedback.

4. A model of interactive formative feedback

This model presents a framework in which to consider interactive formative feedback. Interactive feedback is regarded as a two-way communication between the teacher and the learner. It aims to challenge learners to be more involved in class discussions and be more communicative of their thought processes with the teacher and their peers. It requires effective listening strategies and analysing skills for responses on the part of both the teacher and the learner. While the frequency of teacher questions is emphasised, it is suggested that more learner-initiated questions must increase critical thinking skills.

The framework is based on a pattern that involves teacher posing a planned question to learners. Learners are then given an opportunity to share their thinking while

discussing the answer in groups. During group discussions learners might come up with a question or respond to the teacher's question. At this stage learners are asked to clarify, explain or give reasons for their response. This question is probing learners to think deeper than the original response. In other words, it is a follow-up question once learners have responded to the initial question. Probing question will assist in recognising gaps and misunderstandings. It also aims to shape the learners' ideas, to make it clear to all learners and to learn from the responses. This question challenges learners' thinking while emphasising reasoning behind their correct or wrong answers. Chin (2006) emphasises the importance of wait-time in the questioning cycle. In this model first wait-time is the period that follows a teacher's question where learners are sharing their ideas before responding. Second wait-time follows learners' responses. During this period both teacher and learners are involved in thinking about the responses. Extending wait-time gives learners the opportunity to build on each other's ideas while engaging in higher level thinking and to involve all learners into class interactions. It also gives teachers adequate time to consider responses and reactions to learners' answers. They then have to reach consensus on more valid explanation or reason. The final stage is where teacher and learners use information from classroom conversation by taking action on the basis of responses in order to adapt teaching and learning. Each and every stage or level gives both parties an opportunity to learn.

Listening is crucial as it enables both teachers and learners to ask questions, give responses, reach consensus and use information appropriately in order to improve teaching and learning. In this model feedback is viewed as a communication process which is initiated by questions and requires listening skills on the part of both learners and teachers and helps them to acquire information continuously during daily classroom conversation. During interactive feedback, teachers move away from being providers or evaluators of correct answers to be facilitators and mediators of learning. For learners the opportunity to engage in conversation and challenge each other enables them to achieve beyond what they can learn alone.

5. Conclusion

Feedback is regarded as a fundamental element of formative assessment to plan future instruction and to provide further learning opportunities. After a review of literature on feedback it was found that teachers' choice of the type of feedback causes confusions and misunderstandings in class. Although other researchers regard descriptive feedback as the solution to these misconceptions, it fails to cater for higher order thinking where learners are also engaged in posing questions. The proposed model is an extension of the ESRU model of informal formative assessment. Drawing from Hattie and Timperly's (2008) model of feedback, three major questions asked by a teacher or by a learner must be answered by effective feedback: Where am I going? How am I going? and Where to next? These questions are based on the goals that teachers and learners want to achieve, the progress they are making towards the goal, and the activities that need to be done in order to make better progress. Answers to these questions depend on the levels and extent of interaction

between the teacher and the learner during classroom dialogue. These include teacher posing a planned question to learners, giving learners an opportunity to share their thinking while discussing the answer in groups, learners giving a response, question from response (to give reasons for responses), clarification of responses, reaching consensus and action towards responses. During this interaction more emphasis is placed on questioning and listening for both parties. Each and every stage or level gives both parties an opportunity to learn.

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<p style="text-align:center">CHAPTER 8</p>

21st-century learning and teaching: emerging approaches, new pedagogies and a scholarship of engagement

Chaka Chaka
Walter Sisulu University
cchaka@wsu.ac.za
&
Leeto Ramothea
Walter Sisulu University

1. INTRODUCTION

This chapter outlines three related scenarios - emerging approaches, new pedagogies and a scholarship of engagement - in the context of 21st-century learning and teaching. In this instance, 21st century is both an epoch-oriented device and a framework for conceptualising learning and teaching in particular, and education in general, in the current era. It puts a premium on learning, and regards everyone – including educators - as a learner. In this regard, this chapter contends that the 21st century poses new demands and challenges for both learners and educators; learners and educators need different capabilities for work, citizenship and self-sustainability, and both learners and educators need to transform their approaches, pedagogies and assessments and embrace the scholarship of engagement if they are to be relevant to the 21st century. The chapter briefly delineates emerging approaches, new pedagogies, new assessments and a scholarship of engagement within the framework of 21st-century learning and teaching.

> The illiterate of the twenty-first century will not be those who cannot read and write, but those who cannot learn, unlearn, and relearn (Help Team, quoting Alvin Toffler).
>
> If we are to rise to the challenges and opportunities in this new global age, it means embracing a new vision for teaching and learning (Help Team, 2009).

Educationally speaking, our present era and times require new visions for and new pathways to learning and teaching. They require learners, educators, schools, community stakeholders, system managers and governments to embrace transformation, change and paradigm shift. In particular, in the 21st century, both learners and educators need to embrace emerging approaches, new pedagogies, new assessments and a scholarship of engagement. Learners and educators need different capabilities for work, citizenship (Dede, 2007; see Siemens and Tittenberger, 2009) and self-sustainability. Most importantly, both learners and educators must possess a range of 21st-century skills to enable them to meaningfully survive and adequately participate as full citizens in this era.

2. Framing issues: 21ˢᵀ-century learning and teaching

In this chapter, the expression "21ˢᵗ century" has two meanings: it is an epoch-oriented device and a framework for conceptualising learning and teaching in particular, and education in general, in the current era. As an epoch-oriented device, 21ˢᵗ century has at least two temporal dimensions. First, it is a period following the 20ᵗʰ century spanning 100 years – from 2001 to 2101. This is its standard conception that has both a long-range timeline view and a deferred sense of urgency. Secondly, it refers to the current times. In this instance, it has a short-range view and an urgent sense of immediacy. As a framework it is a conceptual model and perspective within which to situate learning and teaching. Thus, in this context, 21ˢᵗ-century learning and teaching is learning and teaching that is sensitive, adaptable and responsive to the human, social, economic, developmental, and technological imperatives of the 21ˢᵗ century.

Conceptualising 21ˢᵗ century by means of this epoch-framework standpoint has implications for learning and teaching, in particular, and for education, in general. This implies that traditional approaches, pedagogies and assessments that characterised the 20ᵗʰ century must be revisited. In addition, this implies that 21ˢᵗ century skills must be incorporated into learning and teaching. Similarly, this conceptualisation means that a different form of scholarship – a scholarship of engagement – needs to be embraced. Above all, it means that sustainable enabling learning environments are a necessity for a successful learning and teaching. According to this framework, learning in the 21ˢᵗ century encompasses eight critical systems whereby it is encoded, as shown in Figure 1. These are core subjects and 21ˢᵗ-century themes; life and career skills; learning and innovation skills; 21ˢᵗ-century standards assessment; information, media and technology skills; curriculum and instruction; professional development, and learning environments (Partnership for 21ˢᵗ Century Skills, 2009).
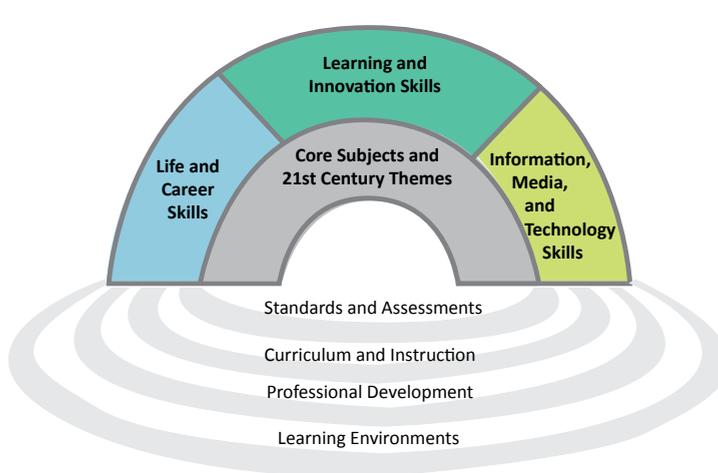
Figure 1: Eight critical systems for 21ˢᵗ-century learning (Source: Partnership for 21ˢᵗ Century Skills, 2009: 1)

Emerging approaches

> To meet 21st century education objectives, [schools] must introduce new ways of teaching that fully engage [learners] and support active learning […] (Cisco Systems, 2008a: 1).

> Education and training institutions are becoming increasingly aware that today's generation of learners is different. Bored with traditional methods they are speaking with their feet as they withdraw from studies and go in search of activities that are more engaging and interactive. For some, this means that they leave the education arena for ever. Educators have been [warned about] this disengagement and exodus for some time and the need to revolutionise approaches to teaching and learning for a new generation that is wired differently […] The learning styles of these young people are significantly different from learners of the past, who are now their teachers or supervisors (Davenport and Baron, 2007: 1).

The 21ˢᵗ century highlights learning and teaching; that is, it calls for a reconceptualisation of both the learning and teaching practice and the classical principles – especially as they were informed by the 20ᵗʰ century educational ethos - underpinning it. Unlike most of the 20ᵗʰ century educational models that privileged the act of teaching over learning as an enterprise, the 21ˢᵗ century prizes learning over teaching. In this epoch, learning becomes an overarching leitmotif for any learner-educator encounter. This call resonates with the view that "the aim of 21st century education is *learning* – creative, powerful, personal, and open-ended in our lives" (Vermont Department of Education, 2009: 2). It also fits in with the argument that realising 21ˢᵗ century learning requires learner-centric approaches. In this scenario, the need for emerging or evolving approaches that are able to capture the spirit of the 21ˢᵗ-century learning becomes more than relevant. These approaches include, *inter alia*, personalised and self-directed learning; situational and socialised learning; connectivist and networked learning, as well as hybrid learning.

3. Personalised and self-directed learning

Personalised and self-directed learning must occupy centre stage in the 21ˢᵗ-century learning scenario. Personalised learning stems from the realisation that a one-size-fits-all approach to learning is inherently flawed and as such ill-adapted to individual learners' needs and circumstances (Centre for Educational Research and Innovation, 2008). At its core is the contention that learning materials, learning objects, pedagogies and learning programmes be customised and tailored to learners' personal needs and expectations. In this sense, it entails a just-in-time (Perspective on 21ˢᵗ Century Pedagogies, 2007) and just-on-demand learning or education as and when learners need it. As such, it stands in stark contrast to just-in-case exam-oriented learning and teaching. For its part, self-directed learning is a reconceptualisation of the classical self-discovery learning approach. It is about learners monitoring their own learning process and their own understanding of learning objects. It also entails learners identifying and locating or creating, recreating and repurposing appropriate learning materials and being able to transfer learning from one domain to another (Partnership for 21ˢᵗ Century Skills, 2004). Personalised and self-directed learning

results in and feeds into the personalised and self-directed education as one of the critical paradigms for 21st-century education.

4. Situational and socialised learning

Situational and socialised learning (SSL) is a blend of situated and social forms of learning. On the one hand, situational learning is an umbrella term encompassing several methodologies such as simulation-, case-, scenario-based learning, role-playing (Davenport and Baron, 2007) and peripheral or vicarious learning (Dede, 2007). It involves customising learning to learners' personal contexts. In this sense, it has an element of context-aware learning. Most importantly, it is driven by the view that "the right learner needs to access the right content, on the right device, at the right time and at the right place" (Chaka, 2007). This view accords well with the 21st-century learning environment. On the other hand, socialised learning is learning that blends learning with socialising. It is leveraged through both learners' personal and social relationships (e.g., social networks, learning networks, communities of learning, etc.) and learners' digital lifestyle technologies. In the former instance, socialised learning embodies sociability and interactivity as it leverages learners' human, social and relational capital. In the latter instance, it taps into cultural and behavioural capital since it harnesses learners' digital lifestyle behaviours (Chaka, in press a). In general, SSL exploits the collective intelligence of both learners and the digital lifestyle technologies they use. On this score, it capitalises on learners' informal personal situations and social contexts, thereby building personalisation, socialisation, contextualisation and informalisation into learning and teaching in keeping with the prevailing 21st-century learners' lifestyles.

5. Connectivist and networked learning

Connectivist and networked learning (CNL) combines connectivist learning and networked leaning. Connectivism as theorised by Siemens (2005 and 2008) and Siemens and Tittenberger (2009) synergises the principles advanced by social network, chaos, complexity, and self-organising theories. It views knowledge and cognition as being distributed across networks of people and technologies, and learning as the process of connecting, growing, and navigating those networks. It also maintains that learning is focused on connecting different elements of information and knowledge and that the connections between these elements are more important than the aggregate knowledge possessed by one individual. Moreover, it posits that knowledge is based on rapidly changing foundations and that new knowledge is continually replacing the old one (also see Chaka, 2007 and 2009). It further espouses the following principles:

- learning is a process of connecting specialised nodes or sources of information;
- learning also resides in non-human appliances;

- ability to see connections between different fields, concepts, and ideas is a core skill, and
- current knowledge is the primary goal for all connectivist learning activities.

Networked learning supplements connectivist learning. It leverages the social, learning and digital networks which 21ˢᵗ-century learners establish among themselves and through their digital lifestyle technologies. Such networks are spatially, institutionally/organisationally and digitally distributed, resulting in distributed learning. They comprise individuals, communities, and institutions/organisations. According to Siemens and Tittenberger (2009), learning is networked at three levels: neural, conceptual and external levels. The neural level deals with learning and the brain; the conceptual level is related to domain-specific learning – learning domain-specific concepts, and the external level entails participatory digital lifestyle technologies. Thus, in this way, CNL leverages individual, social, institutional/organisational and digital capital. Likewise, it harnesses the network effect in the form of the mass participation and collective intelligence or the wisdom of the crowd which learners bring to the learning environment. Most significantly, CNL is an approach that connects learners to their lives and connects with learners' lifestyles so that both learning and schooling do not become points of disconnect for learners. Figure 2 illustrates how schools serve as instances of disconnect for 21ˢᵗ-century learners as per media consumption. This approach captures the ethos of the changing learners of which schools should take note.
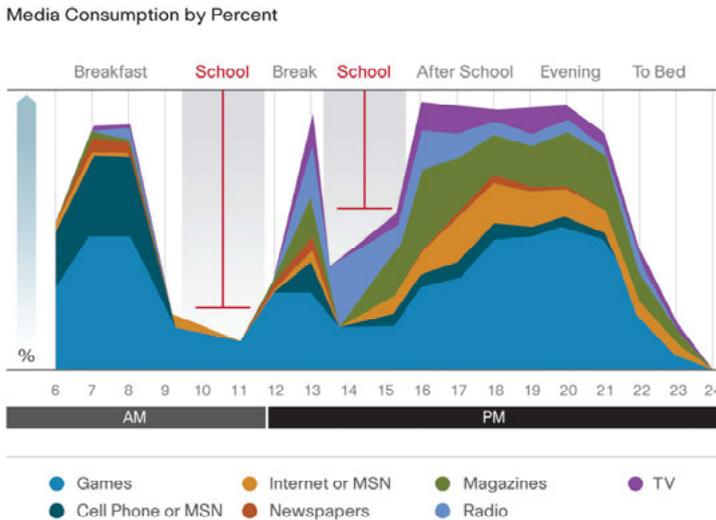
Figure 2: Schools as points of disconnect for 21ˢᵗ-century learners as per media consumption (Source: Cisco Systems, 2008b: 5)

6. New pedagogies

> In the 21st century, it is more important than ever to be multitalented and have an understanding of many different fields (Peterson, 2008: 2).

> For more than 150 years a set of pedagogies reflecting the priorities of the Industrial Age has been embedded in the process of mass schooling. The hallmarks of these pedagogies are found in teacher-controlled learning where deconstructed and reconstructed information is presented to same-age cohorts of students in standardized classroom settings. Many have worked very hard at making improvements to schooling within the confines of this paradigm […] Educators and systems spent the 20th century perfecting the 19th century model of schooling (Whitby, 2007: 2).

As it is, there is just no one best approach for teaching 21st-century knowledge and skills as much as there is no one best pedagogy for mounting 21st-century curriculum (Partnership for 21st Century Skills, 2007). Linked to this view is the contention that most pedagogies and most curricula have passed their use-by dates (see Whitby, 2007). This implies that educators need to embrace a holistic pedagogy review and transformation. They are obliged to modify and align their pedagogies in keeping with changing 21st-century learning and teaching environments. Most crucially, they must innovate and create new pedagogies – that is, 21st-century pedagogies. One instance of such a holistic transformation incorporating pedagogy that is appropriate to the 21st century is depicted in Figure 3. Driven by education – especially Education 1.0, Education 2.0 and Education 3.0 – and grounded in 21st-century learning, this holistic transformation has 21st-century pedagogy and 21st-century skills as its key aspects and technology as its key enabler under Education 3.0 (Cisco Systems, 2008b). In this regard, Education 1.0 represents both traditional education (20th-century educational models) and the traditional Web; Education 2.0 is education based on Web 2.0 (the Read/Think/Write Web), and Education 3.0 symbolises present-day (21st century) education, respectively. Two instances of new pedagogies are 21st-century pedagogy and Pedagogy 3.0.
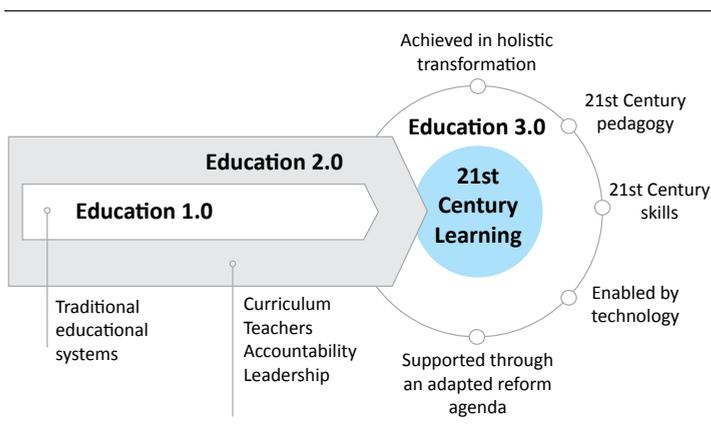
Figure 3: A holistic transformation that incorporates 21st-century pedagogy as one of its elements (Source: Cisco Systems, 2008b: 7)

7. 21ˢᵗ CENTURY PEDAGOGY

One possible pedagogy for 21ˢᵗ-century learning and teaching is 21ˢᵗ-century pedagogy. This pedagogy comprises the following intertwined elements:

▪   **Real-world relevance**: 21ˢᵗ-century pedagogy should focus on authentic activities reflecting the real-world tasks of professionals in practice. Learning becomes authentic when it requires learners to work actively with abstract concepts, facts, and formulae within a realistic social context modelling the everyday practices of the disciplinary culture.

▪   **Cognitive flexibility approach**: 21ˢᵗ-century pedagogy needs to encourage the cognitive flexibility approach. In particular, problems and challenges cannot be solved easily by simply applying existing paradigms. Rather, authentic activities are often ill-defined and open to multiple interpretations, requiring learners to identify for themselves the tasks +and related sub-tasks needed to complete given tasks.

▪   **Sustained investigation**: Sustained investigation must form an integral part of 21ˢᵗ-century pedagogy. Challenges and problems cannot be solved abruptly. Instead, they consist of complex tasks to be investigated by learners over a sustained period of time. All this requires significant investment of time and intellectual resources.

▪   **Multiple sources and perspectives**: multiple sources and perspectives inform 21st-century pedagogy. It provides learners with the opportunity to examine learning tasks from a variety of theoretical and practical perspectives, using multiple resources. It also obliges learners to distinguish relevant from irrelevant information.

▪   **Multiple interpretations and solutions**: 21ˢᵗ-century pedagogy encourages multiple interpretations and solutions to problem situations. It recognises that a one-size-fits-all solution and approach to social problems is not possible. Instead, it allows for diverse interpretations and competing solutions.

▪   **Interdisciplinary perspective**: For 21ˢᵗ-century pedagogy, relevance of knowledge is not limited to a single domain or subject matter specialisation. Rather, authentic learning activities have consequences that go beyond a given discipline, encouraging learners to adopt diverse roles and think in interdisciplinary terms.

▪   **Reflection (meta-cognition)**: Reflection (meta-cognition) is at the core of 21ˢᵗ-century pedagogy. Authentic learning activities enable learners to make choices and reflect on their learning, both individually and collectively, as a team or a community of learners.

▪   **Integrated assessment**: Integrated assessment is also at the core of 21ˢᵗ-century pedagogy. This does not only incorporate all types and forms of assessment, but it is also woven seamlessly into all major tasks in a way that reflects real-world evaluation processes (Lombardi, 2007).

In this regard, a successful 21st-century pedagogy is characterised by the following success factors:

- **Stakeholder involvement**: Decisions about pedagogy are a collective effort involving all stakeholders.
- **Professional development**: Educators and other education leaders need to be trained in both the new pedagogies and how to apply them, and 21st-century learning tools and how to effectively integrate them into their 21st-century learning environments.
- **Alignment with curricula**: Schools must give educators the opportunity to align school curricula with new 21st-century pedagogies. They should also allow educators to be become proficient in applying these pedagogies and the learning technologies that support them. Collaboration, project-based learning, all forms of 21st-century learning approaches, and new pedagogical approaches need to be built into the curriculum.
- **Continual reinforcement**: There must be ongoing training, mentoring, professional learning communities, assessment tools, and other mechanisms to continually reinforce 21st-century pedagogies and 21st-century learning technologies supporting them.
- **Ongoing assessment**: 21st-century pedagogies should incorporate an ongoing holistic assessment of learning, learners and educators (Cisco, 2008a).

Finally, 21st-century pedagogy should attempt to develop the eight critical systems identified in the 21st-century learning and teaching framework (see Figure 1): core subjects and 21st-century themes; life and career skills; learning and innovation skills; 21st-century standards assessment; information, media and technology skills; curriculum and instruction; professional development, and learning environments (Partnership for 21st Century Skills, 2009)

8. Pedagogy 3.0

Pedagogy 3.0 elaborates on McLoughlin and Lee's (2008a and 2008b) concept of Pedagogy 2.0. The latter is an umbrella term for several pedagogical processes (pedagogical approaches, pedagogical theories, pedagogical practices and pedagogical orientations) associated with the adoption and deployment of Education 2.0 technologies (see Chaka, 2009). It consists of the three P's – personalisation, participation and productivity as highlighted in Figure 4.
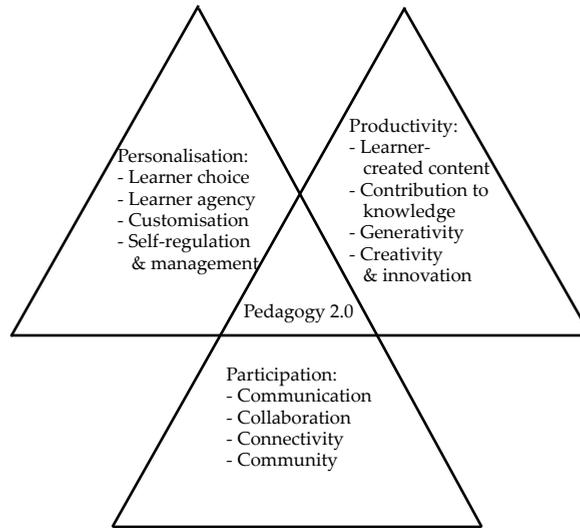
Figure 4: The 3 Ps (personalisation, participation and productivity) constituting Pedagogy 2.0 and their key elements, adapted from McLoughlin and Lee (2008b)

Similarly, in this chapter, Pedagogy 3.0 is a collective term for a number of pedagogical processes linked to the adoption and deployment of Education 3.0 technologies. The latter are part of 21ˢᵗ-century digital lifestyle technologies used by the majority of present-day learners. Such technologies are mostly hybrid or convergent technologies exemplified by blogs, wikis, podcasts, social networks, instant messaging, virtual worlds, massively multiplayer online games (MMOGs), voice over Internet protocol (VoIP), mobile phones, iPods, game consoles, etc. Pedagogy 3.0 is thus one instance of 21ˢᵗ-century pedagogies leveraging the affordances offered by Education 3.0 technologies (see Chaka, in press b). Based on Education 3.0 technologies, this pedagogy consists of the 8 Cs, the 2 Ps, 21ˢᵗ-century skills and 21ˢᵗ-century knowledge as represented in Figure 5.

```
       Content          Content        Community        Creativity

   Participation                                              Productivity

                          Pedagogy 3.0 based
                            on Education 3.0
                             technologies
   21st-century                                              21st-century
      skills                                                   knowledge

       Customisation   Communication    Connection      Collaboration
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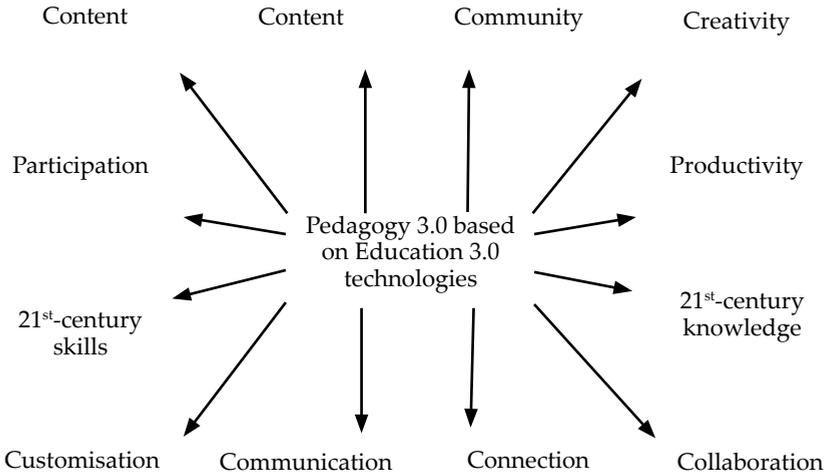
Figure 5: Pedagogy 3.0 as based on Education 3.0 technologies

In this instance, some of its main drivers – mapped out in Figure 6 – are learning standards (21st-century learning standards); learning skills (21st-century learning skills), and learning technologies (21st-century learning technologies).

First, learning standards comprise the following features:

- Focus on 21st-century content, knowledge, and expertise;
- Building understanding across and among core subjects and interdisciplinary themes;
- Emphasising deep understanding;
- Engaging learners with real-world data, tools and experts they are likely to encounter in life and on the job, and
- Allowing multiple measures of mastery (Partnership for 21st Century Skills, 2009).

Secondly, learning skills entail, *inter alia*, the following skills:

- Information, communication, technology, research and visual literacy skills;
- Higher order thinking and problem-solving skills;
- Self-direction and adaptability;
- Interpersonal and cross-cultural skills, and
- Curiosity and creativity (SchoolKiT, 2009).

Thirdly, learning technologies focus on the following aspects:

- Exploring and investigating concepts;
- Accessing, managing, analysing, and synthesising information, and
- Communicating and producing quality products (SchoolKiT, 2009).
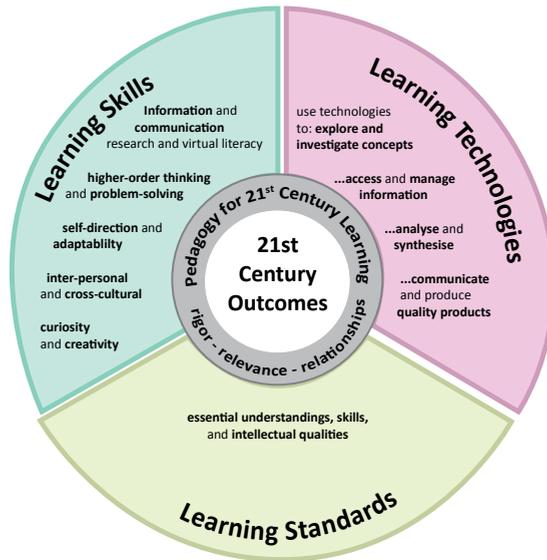
Figure 6: The main drivers of Pedagogy 3.0 (Source: SchoolKiT, 2009: 2)

In general, Pedagogy 3.0 places more emphasis on HOTS (higher order thinking skills) needed for one to be a functional citizen in the 21ˢᵗ century as opposed to LOTS (lower order thinking skills). Brain-based active learning triggers the former while the latter are part of traditional passive learning (see Jukes and Dosaj, 2006).

In addition, Pedagogy 3.0 takes cognisance of the personal learning and thinking skills (PLTS) framework that recognises that 21ˢᵗ-century learners are independent enquirers; creative thinkers; reflective learners; team workers; self-managers, and effective participators (QCA, 2007). Moreover, it is responsive to the learning styles of 21ˢᵗ-century learners. That is, it recognises that these learners are collaborators, free agents, wise analysers, creative synthesisers (Lambert, 2002), and multi-taskers, on the one hand. On the other hand, it acknowledges that they are visual, auditive, kinetic, and tactile learners (García *et al.*, 2009).

Overall, new pedagogies should be humanising; personalise knowledge; foreground the interpersonal nature of learning; engage and enable learners, and contribute to learner-driven knowledge creation and innovation (see Whitby, 2007). Above all, they must foster and enhance learners' *contextualised multiple intelligences* (Cheng, 2004).

9. NEW ASSESSMENTS

> In 21ˢᵗ century learning environments, decontextualised drop-in-from-the-sky assessments consisting of isolated tasks and performances will have zero validity as indices of educational attainment (Elliot, 2008: 3, citing Pellegrino, 1999).

Undoubtedly, 21st-century learning and teaching necessitates new or transformative forms of assessment. This resonates with emerging or evolving approaches, new pedagogies and curricula, and changing learners characteristic of this era (see Chaka, in press a and in press b, 2009). One such new and transformative assessment is Assessment 3.0 (see Elliot, 2008).

10. Assessment 3.0

Assessment 3.0 elaborates on Assessment 2.0 (see Elliot, 2008). The latter captures the spirit of Web 2.0/Education 2.0 technologies in the same way as Pedagogy 2.0 does. The former leverages Education 3.0 technologies or 21st-century learning technologies which learners use at home, in the workplace, and in their everyday lives. It is assessment that responds and is attuned to learners' lifestyles, so as to capitalise on learners' preferences, choices and habits and establish a *connect* between learners and learning.

Some of the characteristics of Assessment 3.0 suitable for 21st-century learning and teaching are as follows:

- **Integration**: Holistic and integrated assessment of 21st-century learning content.
- **Authenticity**: It should attempt to evaluate real-world knowledge and skills prevalent in the 21st century.
- **Personalisation and differentiation**: It should be tailored to the differentiated knowledge, skills and interests of each learner.
- **Negotiation**: This type of assessment requires negotiation and agreement between the learner and the educator.
- **Engagement and learner-centricity**: It should engage the personal interests and preferences of the learner and be sensitive to the learner's needs and expectations.
- **Recognition of existing knowledge and skills**: It has to be willing to accredit the learner's existing knowledge and skills.
- **Depth and probing**: It targets deep knowledge and understanding – not memorisation.
- **Problem-oriented**: It focuses on original tasks requiring genuine problem-solving skills.
- **Collaboratively produced**: It needs to be collaboratively designed and produced by all relevant stakeholders.
- **Peer and self-assessment**: It should entail self-reflection and peer review – calibrated peer assessment is one case in point.
- **Resources- and tools-based**: It should be all-inclusive – it should attempt to incorporate all the available resources and technologies (see Elliot, 2008).
- **Flexible and just-in-time in nature**: It needs to be flexible, and be sensitive to learners' level of preparedness, and be mounted as and when learners are ready.

Assessment 3.0 should take other factors into consideration, namely:

- extent of learners' access to 21ˢᵗ-century technologies both in and out of school;
- learners' facility with 21ˢᵗ-century learning technologies;
- range and depth of information readily accessible to learners;
- extent to which images, graphics, visuals and audio material may amplify text and operate as instances of text, and
- learner-created products and learners' level of ethical and legal practices when remixing/repurposing products (NCTE, 2008).

Finally, Assessment 3.0 needs to incorporate 21ˢᵗ-century electronic portfolios (e-portfolios) as part of its assessment. 21ˢᵗ-century e-portfolios – as digital archives and document collection and management tools – have multiple purposes: learning; evidence records; showcasing; assessment, and performance review. They can be used in two related ways: as a process (e.g., collection, selection, reflection, and presentation) and as a product (e.g., evidence records) (Barrett, 2007). Figure 7 provides an instance of 21ˢᵗ-century e-portfolio offerings.
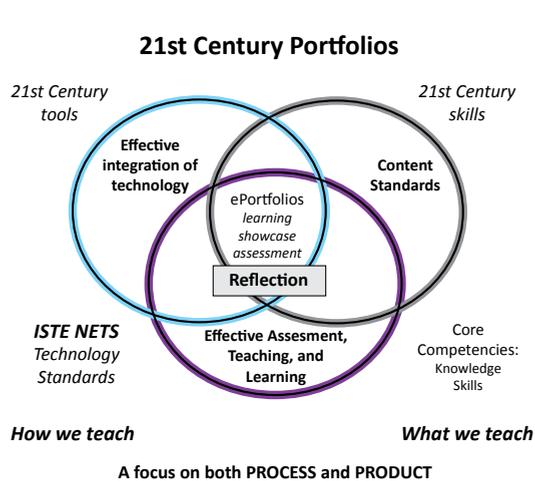
Figure 7: 21ˢᵗ-century Web 2.0 e-portfolio offerings (Source: Barrett, 2007)

11. Scholarship of engagement

Scholarship of engagement (SoE) must be one of the key differentiators in the 21ˢᵗ-century learning and teaching environment. It needs to serve as an underlying architecture whereby 21ˢᵗ-century learning and teaching is framed, shaped and enhanced. In general, SoE is referred to in multiple ways: engaged scholarship; scholarly engagement; community-engaged scholarship; public scholarship; faculty/university engagement; outreach scholarship, and critical scholarship (Giles, 2009; Sandmann, 2006). In this instance, scholarship encompasses, *inter alia*, the following: learning; teaching; research; knowledge production and dissemination; engagement,

and reflective critique. Engagement is primarily about partnering university knowledge and resources with those of the public and private sectors with a view to:

- enriching scholarship, research and innovation;
- enhancing learning, teaching and curriculum;
- preparing educated and fully functional community members;
- inculcating democratic ethos, promoting civic accountability, and contributing to the public good, and
- addressing critical societal issues and advancing community development (Stanton, 2007).

However, while the basic level SoE has elements of learning, teaching, research and service, it should not be simplistically narrowed down and reduced to these four factors. Essentially, it is about moving beyond mere outreach and service learning programmes, and genuinely involving the community (schools, learners, community-based organisations, private sector, etc) in the following joint efforts and activities: co-sharing ideas; collaborative learning; collaborative research; co-production of knowledge; collaborative innovation projects, and negotiated and mutual engagement projects. As Sandmann (2006) points out, it must adhere to the highest standards of quality scholarship as well as be guided by clear-cut principles of engagement.

In addition, SoE must be multi-directional, multi-pronged and multi-sited. It must engage and listen to all voices; encourage multiple conversations, and source everybody's input. Moreover, it should attempt to holistically empower all the relevant stakeholders. It must ensure that learners are afforded enabling and empowering sustainable learning environments. Lastly, it needs to ensure that all community members are fully equipped with the survival toolkit to meet the demands and challenges posed by the 21st century.

12. Conclusion

The 21st-century learning and teaching landscape is ever-changing and transforming, giving rise to new demands and challenges. To keep pace with this rapid change and transformation and the attendant new demands and challenges, learners, educators, schools, community stakeholders, system managers and governments need to embrace a paradigm shift, and be innovative and forward thinking. In particular, all these stakeholders must innovate approaches, pedagogies, curricula, assessments and a scholarship that resonate with and are relevant to 21st-century learning and teaching environments. For this reason this chapter has proposed and explored approaches (e.g., personalised and self-directed learning and connectivist and networked learning), pedagogies (e.g., 21st-century pedagogy and Pedagogy 3.0), assessments (e.g., Assessment 3.0), and a scholarship (e.g., scholarship of engagement) that capture the ethos of the 21st century and are responsive to this era. In conclusion, this chapter maintains that learners need to be provided with enabling and empowering learning spaces so that they can be self-sustainable and fully functional 21st-century citizens.

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CHAPTER 9

Mother-tongue teaching in practice: experiences with pre-service foundation phase teachers at UKZN

Nontokozo Mashiya
University of KwaZulu-Natal, Edgewood Campus
mashiya@ukzn.ac.za

1. INTRODUCTION

The chapter presents the strengths of teaching Life Skills in the medium of instruction of the mother tongue (isiZulu) at the university level as well as the challenges faced during the implementation process. The aim of this chapter is to reflect on the experiences of both a lecturer and the students who were the recipients of this initiative. These students were pre-service teachers who were doing Post Graduate Certificate in Education (PGCE) with the specialisation in the Foundation Phase. Teaching in mother tongue emanated from the Language in Education Policy (1997) of the Department of National Education, which stipulates that Foundation Phase learners should be taught in their mother tongue. Apart from the Department's policy, it is also in the KwaZulu-Natal University's interest to promote multilingualism and the use of African languages. Data was collected by means of classroom discussion and recorded in a diary. At the end of the module students were asked to evaluate the module and the practice of teaching through the medium of instruction of isiZulu. Students' evaluations were analysed and their reflections during lectures were recorded and grouped according to themes. Related information was placed into a single category, resulting in different categories. Findings are reported that students were happy to learn through their mother tongue. Interaction in class discussion was very high. Performance in activities was remarkably high such that all students did very well in their examination. The challenges that the conceptual framework in isiZulu is underdeveloped and that there was a shortage of isiZulu resources did not hinder the process.

The Faculty of Education at the University of KwaZulu-Natal has five priorities, one of these being to promote multilingualism and the use of African languages. This initiative is carried out in two projects: the South Africa-Norway Tertiary Education (SANTED) project and the Post-Graduate Certificate in Education (PGCE) qualification. The South Africa-Norway Tertiary Education (SANTED) is the project that is run within the University to promote the use of African Languages. Communicative isiZulu is taught to English-speaking students to enable them to communicate with isiZulu-speaking learners in schools. The same course is also offered to English-speaking lecturers to enable them to communicate with isiZulu-speaking colleagues and students.

Students with a three-year degree who do not have a teaching qualification obtain a PGCE qualification. They must have teaching subjects in their degrees. For a Foundation Phase specialisation, they must have the basics that are relevant to Foundation Phase teaching. Applicants with psychology, sociology, law with specialisation in family law and children rights are considered legible for the qualification. Students are trained for two years on a part-time basis and one year on a full-time basis. The majority of the students who enrol for this qualification did not opt for teaching. Lack of employment forced them to enrol for a teaching qualification. The majority of the students completed their degrees ten years ago and others have recently graduated with bachelor's degrees.

The language in Education policy of 1997 stipulates that a child at the Foundation Phase must be taught in his/her mother tongue. A wide spectrum of opinions exists as to the locally viable approaches towards multilingual education, ranging from arguments in favour of the cognitive benefits and cost-effectiveness of teaching through one medium (home language) and learning additional languages as subjects (DoE, 1997). The aim of the policy is to maintain home language while providing access to and effective acquisition of additional languages. The idea of teaching in the medium of isiZulu emanated from what the policy states regarding the cognitive and emotional benefits. For teachers to be able to teach in the mother tongue there is a need to teach them in the language which the child would understand better. Apart from the policy, the university wishes to comply with the Constitution of South Africa which is sensitive to human rights. Grandish (2009) highlights Professor Bear Nicholas of Frederiction's St Thomas University who noted that the government and educators are denying basic linguistic rights to the youth by not providing an option for mother-tongue medium instruction. This is put into practice to acknowledge the rights of students and learners in schools. Two Foundation Phase specialisation modules were offered in two languages. These modules are Literacy and Life Skills. They were offered in English to English-speaking students and in isiZulu to isiZulu-speaking students. In this chapter I reflect on my experiences of teaching Life Skills in the medium of instruction of isiZulu to PGCE who were specialising in the Foundation Phase in 2008 and the current cohort of 2009 at the University of KwaZulu-Natal. Experiences of students were taken into account since in their discussions during lectures they included their experiences as their concerns in the implementation process and also in their evaluation of the module.

2. Why do we teach in isiZulu?

We teach in isiZulu to enable our Foundation Phase students to teach in isiZulu, so that they are in a position to comply with the Language in Education Policy of 1997. Foundation Phase teachers' guide mentions that all learners in the Foundation Phase should speak the LoLT at home to enable them to prepare their lessons in isiZulu and to deliver matter in the child's language. Studies on the African continent by researchers such as Kamwangamalu (2000), Ejieh (2004), Iyamu and Ogiegbaen (2007: 100) and Aliyu (2008) bear testimony to the benefits of mother-tongue teaching. Ejieh (2004: 74) states that children will benefit culturally, socially, linguistically and

cognitively by using the mother tongue as the medium of instruction throughout the six years of primary school, and that their command of English will be improved if they are taught English as an entirely separate subject by a specially trained teacher through the six years. This is in line with Kamwangamalu (2000: 122) that those who support mother-tongue education maintain that effective literacy acquisition and second-language proficiency depend on well-developed first-language proficiency.

Some teachers believe that code-switching helps students to gain more insight into English. They are not aware that teaching by code-switching diminishes the use of the mother tongue. In a study conducted in India, the results show that access to school has increased and enrolment rates are improving, the dropout rate are still alarmingly high and achievement levels are low. One of the reasons stated is that education is conducted in a language, which learners do not understand, using unfamiliar cultural context. The article also reports that an education which begins in the mother tongue and builds competence in the second language before using it as a medium of instruction, thus reducing linguistic and cultural barriers faced by students when entering school, is a key component in increasing the educational attainment of speakers of minority languages (MacKenzie, 2009).

A number of studies (Kamwangamalu, 2000; Janshala, 2003; Neke, 2005; Iyamu and Ogiegbaen, 2007) have observed that mother-tongue teaching makes lessons interesting. All students were able to engage in class discussions. This is because a mother tongue is the language which a person has acquired in early years and which normally has become his instrument of thought and communication according to United Nations Educational, Scientific and Cultural Organization (UNESCO) (Kamwangamalu, 2000: 121). Mother-tongue teaching improves the quality of education and preserves the language (Janshala, 2003: 1).

In Tanzania, Kiswahili has been used as a medium of instruction in primary education and catered for a large student population with great success, compared to the use of English in the post-primary education sector (Neke, 2005: 76). Opuku-Amakwa (2009) emphasises that the use of English in classrooms in Ghana which is an unfamiliar language to students creates anxiety among students and stalls effective classroom participation. Learning in the foreign language is still a challenge to university students and not only to students in the post-primary sector. Singh-Ghuman (2002: 48) states that Asian students in America have tended to score lower than their white peers on tests of ability and attainment. This was caused by the fact that they were learning in English and not in their Asian language. Some students do not perform to the best of their ability because of their inability to express themselves in writing. Poor listening skills are also a factor. Iyamu and Ogiegbaen (2007) confirm that the mother tongue provides a more rewarding learning environment as school learning and experience become a continuation of home experience, a condition that guarantees cognitive equilibrium.

Though mother-tongue teaching makes learning easier for students and for learners in schools, it is not possible to teach all the subjects in the mother tongue. Ejieh (2004: 78) affirms this in the study of students' attitudes towards teaching in the mother tongue in Nigerian primary schools. This was evident during the lecturing process. It was

not possible to teach some parts of the module in complete isiZulu. For example, the theoretical foundations of Life Skills deals with theories. Theories were treated as they are with a lot of code-switching, and their names were not changed into isiZulu. This was due to the fact that some English words used in the content do not exist in isiZulu, implying that there is no direct translation of those terms.

Lam (2002: 251) gives evidence of the learner who learnt two languages simultaneously, Russian and English. The learner states that his energies were not focused and he did not learn either language well. This stresses the importance of focusing on one language at an early age to avoid the divided attention on the part of a learner. In many countries, a foreign language is taught in the fourth grade and this continues until the end of high school (Pavlenko, 2003). This gives learners sufficient time to learn their vernacular without interference from the foreign language.

3. Methodology

The lecturer's experiences were captured after each interesting event. During discussion sessions students reported on their experiences which were also recorded in a notebook. Experiences of two cohorts who did PGCE Foundation Phase in 2008 and 2009 are taken into account. The first group consisted of 21 students and the current group consists of 12 students. Some information was taken from the students' evaluation of the module. All the information was categorised into themes. The first theme which emerged during the analysis was opportunities/strengths and the second theme was challenges. Under the first theme three sub-themes were identified. The sub-themes dealt with performance, participation and self-enrichment. The second theme challenges comprised a number of sub-themes: attitude, conceptual framework, lack of vocabulary, lack of expertise, time factor, lack of resources and discouragement by school teachers.

4. The implementation process

Over the years the university offered a PGCE qualification with the focus on Senior Phase and Further Education and Training (FET). There was a need to train teachers in the Foundation Phase to satisfy the needs of the country and of the Department of Education. Therefore a new PGCE with a specialisation in Foundation Phase was introduced in 2008. This was carried out with a cohort of 36 students. Two elective modules were offered in English and isiZulu. These modules are Literacy and Life Skills. Of the 36 students 21 did Life Skills in isiZulu and 11 did Life Skills in English, and 4 part-time students did not do Life Skills; 36 students did Literacy – 19 did literacy in English and 17 did Literacy in isiZulu.

One lecturer taught Life Skills in the medium of instruction of two languages. English-speaking students were taught in the medium of English and isiZulu-speaking students were taught in the medium of instruction of isiZulu. Both classes were given equal opportunities. Each lecture lasted 90 minutes. Students were given the same tasks and wrote the same test. The test had two sections. Section A was

for English-speaking students and Section B was for isiZulu-speaking students. The isiZulu version was a translation of the English version. They were given 90 minutes to complete the paper. At the end of the year they wrote the same examination. The examination paper had the features of the test. It was a three-hour paper. Both groups were given the same amount of time.

5. Reflections on experiences

Opportunities/strengths

In the process of teaching and learning in the medium of instruction of isiZulu we had two experiences. The implementation of the process had strengths (opportunities) and challenges.

Participation of students was extremely good. Students expressed themselves freely. Students were fully engaged in lively class discussions. Lectures had a social group feature. Different views were obtained because everyone had something to say. There was no tension because they were learning in the comfort of their own language. According to the comments of students after the teaching practicum, learners in schools participated very well. Parental involvement was high. Parents were able to help learners with homework because it was given in the language they understand.

This initiative was *self-enriching*. We learned new concepts that are not used in our daily conversation. Students gained knowledge of preparing Life Skills lesson plans in their own language. There are words in isiZulu which are not used in daily conversation, words that are newly developed, words that were used by indigenous people, words that are borrowed from other languages, words that have just emerged because of the development of technology, e.g. facsimile is called *isikhahlamezi* in isiZulu. This word was developed as the fax machine was developed because there was a need to have a relevant isiZulu word for it.

Students *performed* very well in all their activities. All students who wrote the examination and tests performed well in their activities. They all passed the examination. No supplementary examination was written in this module.

Challenges attitude

The great challenge was introducing the matter to students and informing them that two modules were going to be offered in the medium of instruction of two languages. Some students were not willing to learn through the medium of isiZulu. The Language in Education Policy of 1997 had to be brought to their attention. Some students mentioned that isiZulu is a difficult language for learning. It is only a language for communication. The majority of the students with negative attitudes were those who attended multiracial schools and who are good in English. They stated that they are poor in writing isiZulu; they can only speak it fluently but not write it correctly. Students who had such problems were allowed to learn Life Skills in the medium of English. The second cohort of students who also attended

multiracial schools did not find it difficult to learn life skills in isiZulu. They were happy with the undertaking. Students who attended poor schools and who are not fluent in English were happy to learn in their mother tongue.

Conceptual framework

Conceptual framework in isiZulu is underdeveloped. Many words do not have relevant concepts in isiZulu. This was a problem in the implementation. Code-switching to English took place in order to make meaning of what was learned. There was also disagreement between the concepts. When a word was translated from English into isiZulu it gave another meaning. When translating the word back into English, it gave a different meaning. For example, for the word "facilitator" the term "umqondisi" was used. When translating the term "umqondisi" back into English it gave another meaning, namely "director". In English the word "director" does not mean the same thing as facilitator. It was also discovered that when using an English-isiZulu dictionary, known words seemed to be new words which were difficult to understand. It was like learning a new language. Therefore familiar words were used whose meaning is nearly similar to the word being translated. In English the terms "blue" and "green" are different. isiZulu has no term for blue. One term refers to both, namely "kuluhlaza". The language differentiates by sating "kuluhlaza okotshani" which means "grass green" and "kuluhlaza okwesibhakabhaka" which means "green as the sky". The problem occurs when these two terms are taught to a grade one class. Some sounds are not taught to learners at this level, namely "tsh". Learners in this grade are not taught sounds with three syllables. They do words with two syllables by the end of the year which introduces them to grade two work. Assessment has to be done orally.

Some words are not used in public in isiZulu. They are taboo. When teaching Life Skills, there are sections where learners must learn parts of the body. There are parts of the body which are not called by their names, for example the private parts. In English it is easy to call these parts by their names whereas in isiZulu it is considered disrespectful. Another word must be used to refer to the forbidden one. This is called a 'Hlonipha language'. The word 'hlonipha' means respect. A female private part is called 'cake' or 'cow'. A male private part is called 'stick'. These terms might apply to a particular region and in another region they use another term to refer to it. These words often do not convey the actual message. This is confusing to some people. This word might not be used in all regions as there is a dialect. These are not the standardised words. In other places, they use the term "mouse" to refer to the female private part. Some words are avoided to pay respect to people who are known in the area. For example, if the chief is called "water", people in that region must use another word to refer to water because it is forbidden in that region. This brings confusion in the teaching and learning situation where people come from different parts of the region; they do not attach the same meaning to words.

Lack of vocabulary

Students reported that they found the teaching practicum difficult as they did not have an adequate vocabulary. They do not even know the simple words that are used in the language. Because of the difficulty of isiZulu words, teachers teach some of the work in English. Students discovered that foundation phase students do not know the primary colours in isiZulu. During teaching notes are written in English and in isiZulu, and the explanation is done in isiZulu. The way learners are taught is confusing, the chalkboard summary is in English substituting difficult isiZulu words and easy isiZulu. During my visit to schools to assess students who were doing teaching practice I realised that grade R children cannot differentiate between English and isiZulu because of this mixture. A great deal of code-switching takes place. Students reported that this is caused by the fact that the curriculum itself is not accommodating. All the Foundation Phase, Life Skills and Numeracy programmes are taken from the Life Orientation and Mathematics documents which are written in English. This motivates teachers to teach in English at the Foundation Phase.

Resources

There is a shortage of isiZulu resources in schools and at the university. This is a considerable challenge which is not easy to overcome. The project SANTED is working on the translation of terms for academic learning and for school practice. It is not easy to translate all the material into isiZulu, but the difficult terms will be of much help. For school practice, books are available in isiZulu. These books are translated from the English version. Translated work is often not relevant for Foundation Phase teaching. Sounds cannot be sifted, as mentioned earlier, as some sounds are not taught to some grades. This is serious in the teaching of literacy (isiZulu).

Time factor

Students were given equal amounts of time to complete the test and the examination. The English group finished their work much earlier than the isiZulu group. IsiZulu group needed extra time. The amount of work produced by the two groups was not the same. The English group produced a reasonable amount of work whereas the isiZulu group produced a large amount of work. This was caused by the fact that a short word in English becomes long in isiZulu e.g. 'sky' is translated as 'isibhakabhaka' in isiZulu. One word in English can be explained in more than one word in isiZulu, e.g. 'blue' is translated as 'kuluhlaza okusasibhakabhaka', and a short sentence in English turns into a paragraph in isiZulu. These are the reasons which caused the isiZulu group to finish later and to produce large amounts of work.

Discouragement by school teachers

School teachers were not happy about the teaching of Life Skills in full isiZulu by pre-service teachers. They mentioned that learners do not understand some words in isiZulu. After the teaching practicum they would have to re-teach the section and that would waste time.

Lack of expertise

During the examination time, it was difficult to find an external examiner with expertise in Foundation Phase, Life Skills and in the Language (isiZulu). The examiners we identified had at least two of the characteristics. Most of them had Foundation Phase and Life Skills expertise but were not fluent in isiZulu. Some had isiZulu, knowledge of Life Skills but no Foundation Phase expertise and others had isiZulu and Foundation Phase expertise but no knowledge of Life Skills.

6. Implications and conclusion

This chapter highlights some important considerations and potential pitfalls that could be taken into account in order to make the practice of mother-tongue teaching feasible at both levels, i.e. the higher education level and the school level. Students evaluated the module in June and November. They appreciated learning in their own language. Their major concern was the shortage of isiZulu material. They pointed out that it is difficult to study in English and to write in isiZulu because they were given material that was written in English. This is the only concern they regarded as an obstacle in their learning through the medium of instruction of isiZulu. Material is an urgent issue. This has to be facilitated for the proper teaching at university level and for classroom practice in schools. It is hoped that the status of mother-tongue teaching by mother-tongue teachers and non mother-tongue teachers will be raised, since the SANTED project is offering isiZulu lessons to non-speakers of the language.

The above information clearly indicates that the attitudes of all the stakeholders must be revised. Starting from the students who pointed out that they cannot write their own language properly. These teachers should shed light to the young generation. Practising teachers also need attention. A colloquium was organised with the aim of familiarising teachers with the Language in Education Policy and to emphasise the importance of teaching a Foundation Phase child in a language s/he speaks at home.

This practice is crucial as it is stated that students performed well in their activities and there was growth of vocabulary since words that are not used regularly were discovered. Students had some time to participate without intimidation, where they had to express themselves in the comfort of their language. This is a clear call that learning through the medium of isiZulu must be conducive by making resources available. Some of the challenges will not be overcome soon.

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Bringing marginalised children to the centre of learning: a grade R initiative

Ona Janse van Rensburg
North-West University, Potchefstroom Campus
ona.jansevanrensburg@nwu.ac.za

1. INTRODUCTION

Grade R classes are part of the Foundation Phase as from 1998. The Department of Education has committed itself to making the implementation of the pre-school year a priority from the year 2010. The date was recently extended to 2014. Kader Asmal (previously Minister of Education) foresaw that Grade R will be compulsory as from 2010 for every 5-6-year-old child. Grade R classes can be at a primary school, a nursery school or a private school. Grade R as part of Foundation Phase forms part of the GET phase.

In South African society an ever-widening gap exists between the achievement of previously advantaged learners and learners from a disadvantaged background. The inequality exists even before children start formal schooling. In South Africa the pre-school year is not yet funded by government and children from disadvantaged groups do not have the luxury of learning readiness programmes to help close the gap. Parents often have low education skills that result in low parent involvement in the child's learning and development. In towns and cities, churches, charities and other NGOs often do intervention programmes with pre-school children. Farm children appear to be neglected and marginalised in this sense. Many of these young farm children's parents are illiterate.

Another problem is the need for qualified teachers for pre-school learners in South Africa. A training programme for teachers of disadvantaged and marginalised 5/6-year-old children will lay a firm foundation for future learning success and contribute to bridging the achievement gap and make provision for teachers at farm schools possible where Grade R children are at this stage neglected and marginalised.

A study of related literature was done in America (Head Start). In USA the National Association for the Education of Young Children uses the term Developmentally Appropriate Practise (DAP). This is a philosophy and an approach to education based on knowledge about how children learn and develop. This essential knowledge should be part of teachers' training.

This chapter is based on a report of a scholar from the NWU reaching out to farm children who have been marginalised from Grade R education. This is an attempt to create a sustainable empowering learning environment, namely a Grade R class for these young children. A report will also be given on the process of creating this

learning environment and training a facilitator for this class. This project shows engagement as a university to put theoretical and practical knowledge into schools as in-service learning. Qualitative data will be reported.

2. Background

Education is a fundamental human activity in all societies, aimed at the development of the individual and the development of society as a whole (Dahms, 2009). It is generally known that the South African education system has changed several times during the twentieth century. Schools and colleges were ethnically segregated and central government controlled funds. Since 1995 the various ministries have collapsed and changed the education system into non-segregated provincial departments of education. According to the 1993 Constitution each of the 9 provinces had more authority to design its own provincial system. OBE as a new approach was implemented in Grade 1 classes from 1998. There were several problems with this curriculum. The curriculum was revised and the revised curriculum (NCS) is used in schools in the GET band and compares well with global curricula from (Wilkens, 2009).

The National Curriculum builds on conceptual understanding and in every learning area there are learning outcomes and assessment standards that should be reached in the pre-school or Grade R year. Upon entering school, a Grade 1 learner is expected to be physically, cognitively, affectively, normatively, socio-culturally and linguistically ready for a solid start of his school career. In South Africa the context is complex. Linguistic and cognitive readiness imply that a learner should understand the concepts used in the medium of instruction of the school. A conceptual understanding differs from mere knowledge. The fact that many grade 1 learners are not instructed in their mother tongue plays a significant role in the current teaching situation in the RSA. Another important factor is the fact that since 2004 learners may enrol as grade 1 learners at primary schools if they are five and a half years old and did not attend a grade R class.

To comprehend any educational system one has to take into account contextual forces shaping the educational system. South Africa is known for poverty, illiteracy, unemployment and HIV/AIDS. The unemployment rate is currently 36-40% (6 million people), a third of whom are younger that 30. This implies that they are parents with children in early childhood phase (0-9 years). RSA is a typically developing country with an oversupply of unskilled workers. Only 6.2% of persons aged 20 and over have tertiary qualifications, 16.4% passed matric and 34% are regarded as illiterate. South Africa has one of the most heterogeneous populations in the world with eleven official languages. The language set-up places high demands on education. Up to 53% of households live under the poverty line, 75% of whom live in rural areas. The effect of HIV/AIDS on children's progress in school is devastating because of the disease itself or the death of their parents.

The above statistics are true for the situation in South Africa regarding pre-school and Grade R learners in general. For farm workers and their children numbers regarding being jobless and illiterate are even worse. This research focuses on the marginalisation of Grade R learners at a farm school.

3. TEACHERS

There is a great demand for qualified and accredited ECD teachers to ensure quality teaching and learning in ECD centres. Every year nearly 1,000,000 learners enter Grade 1 classes and less than half of them attended any form of pre-school. Currently, pre-school education is not compulsory, and the Department of Education does not provide formal grants for 5 to 6-year-old Reception Year (Grade R) learners. Many children from disadvantaged socio-economic groups still do not have the opportunity to attend school readiness programmes. By the time these learners start formal schooling they already lack basic social, numerical thinking and language skills. These imperative skills are prerequisites for effective learning, as they form the foundation of the learning process. In cases where disadvantaged pre-schoolers have the opportunity to attend pre-primary or Early Childhood Development (ECD) centres, the qualification and experience of teachers often do not meet the criteria for ECD practitioners, as prescribed by the Department of Education.
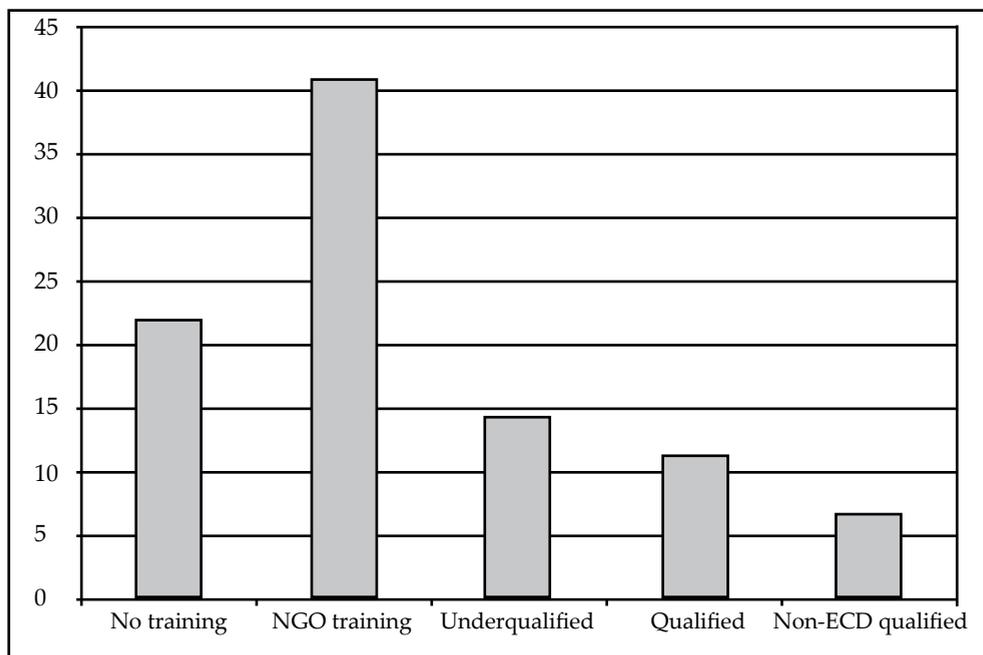
Figure 1: Qualifications according to ECD audit (South African Department of Education, 2001b: 41)

ECD TEACHER TRAINING PROVIDERS

Under-qualification of Grade R teachers and facilitators not only results in poor remuneration, but also influences the quality of learning that takes place, and prevents pre-school learners from having a fair opportunity to develop their full potential and become school-ready. This is the reason why the Department of Education committed itself to addressing this problem by making the implementation of the

pre-school year (Grade R) a priority for the year 2010 (Mbeki, 2008; Pandor, 2005; SAQA, 2007; UNESCO, 2006). According to the 2006 UNESCO International Bureau of Education (IBE) profile, approximately 500,000 learners were enrolled for Grade R classes during 2005 (UNESCO, 2006). The target for 2010 is to have all learners (approximately 1 million pre-school learners) enrolled for accredited Reception Year (Grade R) programmes (UNESCO, 2006). Accordingly, the Department of Education encourages under- and unqualified ECD teachers, in particular those teachers responsible for pre-school education (Grade R), to attain specialised accredited qualifications in order to empower themselves and their learners (Pandor, 2005).

Currently, there is a great demand for qualified and accredited ECD teachers in order to ensure quality ECD teaching and learning.

Figure 1 above shows a frequency table of ECD teacher qualifications and ECD training providers according to a 2001 audit by the Department of Education (DoE, 2001b). At the time, 23% of all ECD teachers did not have any form of ECD qualification; 43% obtained ECD training through non-governmental organisations (NGOs); 15% were under-qualified educators who received training in technical or teacher training colleges (M+2); only 12% of ECD teachers obtained an accredited university ECD qualification (M+3 and more), while 7% of ECD teachers had qualifications in other fields, for example nursing and social work (DoE, 2001b).

The South African Qualifications Authority (SAQA) (2007) recently completed a study to investigate the extent to which teacher qualifications have an impact on ECD. Apart from the fact that far too few teachers are being trained as professional ECD teachers, the link between training and implementation was found to be poor, with little research in the field. While the impact of the qualifications was found to be positive, the study suggests that ECD sites, many of which are rural (40%), often lack awareness of, and capacity to implement ECD programmes (SAQA, 2007).

4. Literature

Researchers continually place school and learning readiness under the spotlight in an attempt to protect the grade 1 learner from possible developmental problems. Annually, approximately one million learners are admitted to Grade 1 in South Africa. Only about fifty per cent of them had the privilege of attending a crèche, a nursery school or Grade R (i.e. the Reception year) before entering Grade 1 (Rademeyer, 2001). The following are generally acknowledged as key concepts and skills regarding the learning readiness of small children.

5. Concept forming

Concept forming is the process of discriminating between the essential characteristics of something (such as a triangle) and which occurs only after repeated perceptions of it (Winkler *et al.*, 2004: 71). The process begins with sensory input: the child makes sense out of sensation (Scott, 2004: 27). Development coheres with concept forming;

concepts form the building-blocks of thinking (DoE, 2002: 40; De Witt, 2006): Age zero to six years can be regarded as a crisis period in concept forming, although the process will continue after this early age (De Witt, 1989: 26). The cognitive system of the child is founded in concept forming (Calitz, 1990: 6). A child with conceptual disorders is unable to organise materials and thoughts in a normal manner. A disturbance in this cognitive ability affects comprehension skills in reading and listening (Lerner, 2004: 39).

6. Approach to learning

Recent constructivist insights have revealed that teaching-learning will most likely not be as effective if the teacher attempted to 'transfer' knowledge to the learners. The learners should instead be assisted to develop for themselves unique, active and constructive ways of mastering the required knowledge/learning materials. Teaching should therefore not be aimed at creating and promoting learning, but rather at enabling the learners to learn (Nieuwoudt, 1998: 36). This is a complex process, as Bloom (1992: 399) and Pantel (1997) convincingly argued.

7. Perceptual abilities and skills

Clear perception and the ability to make meaningful interpretations form the basis of successful learning (Winkler *et al.*, 2004: 71). In the Foundation Phase, for instance, learners require certain perceptions for the development of laterality, body image, balance and spatial orientation. A learner is not ready for formal learning structures if s/he cannot make use of a base line in graphic expression (De Witt, 1989: 34). They should also have reached a certain level of maturity regarding perceptual motor abilities (Gallahue, 1982: 12; Pieterse, 2002: 33).

8. The teacher's role

Table 2 shows the teacher training providers in South Africa. The largest percentage (52%) of facilitators are trained by NGOs at this stage. Because of the unfamiliarity of the new surroundings, learners who attend school for the first time must enjoy an open and secure environment where they have opportunities for self-expression, and where self-confidence and personal development can be stimulated. Teachers therefore require knowledge and understanding of holistic development, both in terms of group and individual dynamics (Darvin and Van Staden, 2005: 10). Teachers have to master the skill of sending positive non-verbal messages, of making learning a fun and challenging experience, of ensuring balance and emotional involvement among learners, and of providing learning materials of the appropriate standard of difficulty (Gravett and Geyser, 2004: 38-39). Teachers must be particularly aware of creating obstacles for learners, such as too difficult learning material, too complex language, disorganised classrooms, inappropriate learning methods and techniques, incorrect tempo of teaching-learning and assessment procedures (DoE, 2001: 3).
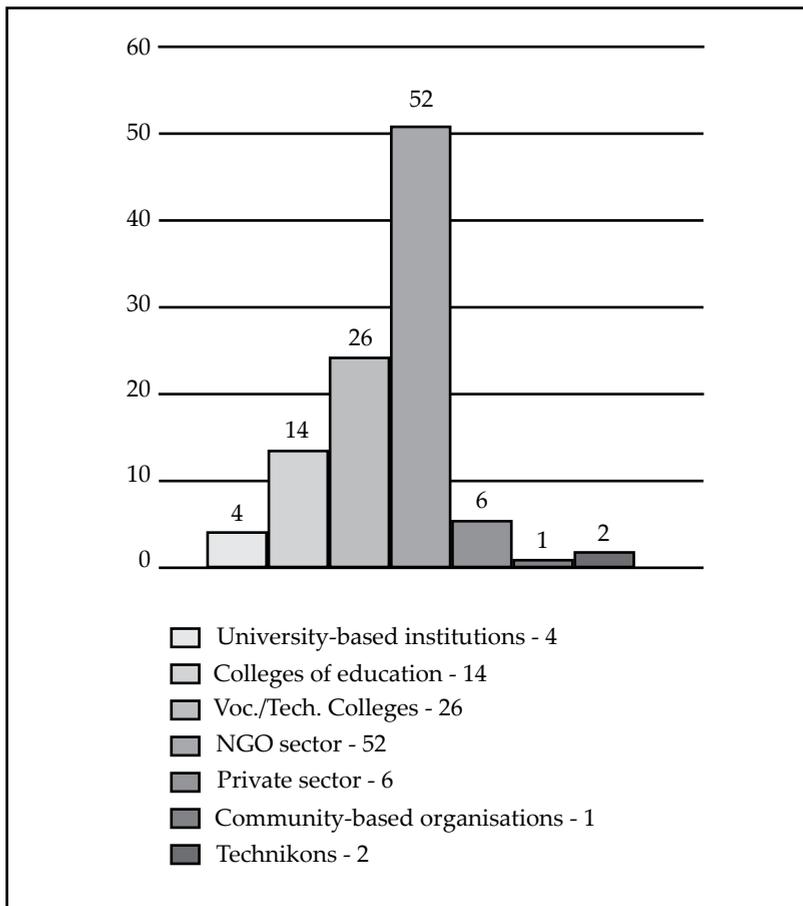
Figure 2: ECD teacher training providers (South African Department of Education, 2001b:44)

9. LANGUAGE

Teachers must be masters of the medium of instruction (Cuvelier, du Plessis and Tech, 2003: 137) because this is the medium whereby new knowledge is acquired. Children must also be taught in the language that they know and understand best (Winkler *et al.*, 2004). That particular language is also the one that best facilitates the forming of concepts (Darvin and Van Staden, 2005: 89). Many children in South Africa are currently being taught in languages other than their home or mother tongues (Rademeyer, 2004: 9; Darvin and Van Staden, 2005: 89). This might be detrimental to their academic achievement in school in view of what has been said of the importance in the teaching-learning context of a language well understood and spoken (see Winkler *et al.*, 2004: 77-80).

A study of related literature was done on America's situation regarding pre-school education and many issues are clear from their experiences.

10. Early childhood education in the United States of America

The first Kindergarten was a German nursery school, founded by Froebel in 1839. In countries such as the United States of America and Australia the year before children commence with formal education is called Kindergarten. Gordon and Williams-Browne (2004: 16) explain this as follows:

> The word Kindergarten – German for 'children's garden' – is a delightful term. It brings to mind the image of young seedlings on the verge of blossoming. The similarity between caring for young plants and young children is not accidental. Froebel, the man who coined the word 'Kindergarten', meant that for that association to be made. As a flower opens from a bud, as too does a child go through natural unfolding process. This idea – and ideal – are part of the Kindergarten story.

Approximately twenty years after Froebel founded the first Kindergarten in Germany, Margaretha Schurz founded the first Kindergarten for German-speaking children in the United States of America in 1856. The small school was located at her home in Wisconsin. Schurz, in turn, was an inspiration for Elizabeth Peabody, who, in 1860, founded the first English-medium nursery school, in Boston. In 1873 Susan Blow established the first Kindergarten school associated with a public school in the United States of America. From 1880 nursery school teachers were designing play materials and song books to stimulate five year-old children. During these early years the philosophy of Froebel was visibly strong. In the ensuing era John Dewey's philosophy, with its element of social reform, gained a foothold in schools (Gordon and Williams-Browne, 2004: 19).

Churches and other institutions, out of concern about children from poor families, established many of the schools. This is the reason for the well-known Head Start programme started in 1965 in the United States of America (Gordon and Williams-Browne, 2004: 23; Evans, 1971: 63).

When the Soviet Union launched the first satellite, Sputnik, in 1957, the question arose in America as to why they were not the first to accomplish this. The issue of human rights followed in the early 1960s and Project Head-start followed as a result of these two causal factors, in order to combat poverty and to stimulate children from an early age. This was the first extensive attempt by the American government to educationally assist children who grew up in poverty. These children were also helped socially, medically, with dental care and treatment, and spiritually, and they were also provided with food. A natural conscious awareness of the needs of young children arose to ensure a better life for them.

Head-start had three outstanding characteristics:

- compensating educational opportunities,
- parental involvement,
- community control.

Over the years Head-start provided educational opportunities and services to more than ten million American children and their families. Project Follow Through followed up Head-Start children in primary school. Head-Start brought a consciousness in communities, and many nursery schools, day-care centres and Kindergartens were started where pre-school children were provided with stimulation programmes (Evans, 1971; Schweinhardt and Weikart, 1999).

According to Lawrence Schweinhardt (1999: 47),

> Children learn from toys, they learn from play, they learn from touching things and moving around, from their senses, from poking things to see how they react. That is the kind of learning that ought to be taken place in programmes. That's the kind of programme that resulted in the reduction in need for special education and in further high school dropouts.

Another well-known American programme for the stimulation of pre-school children is the High-Scope Approach which is used in public, private, half-day and full-day schools. This programme was originally developed for children from low-income families and risk cases. Currently this programme is offered to children worldwide. High Scope consists of 58 experiences and experiments, divided into ten categories: creative work, language development, social relations, movement, music, clarification, series formation, numbers, space and time. Infants' day at school has a fixed routine and is based upon the principles of planning, doing and reflecting. Informal instruction takes place, and there are no typical school activities, such as paperwork or drill-work. Computers in playrooms are recommended but not compulsory; thus schools do not have to buy them. High-Scope plays an important role in the natural Head-Start programme, by giving, on contract basis, training to Head-Start teachers. A national survey revealed that 37% of contemporary Head-Start programmes employ the High-Scope approach. Although there is a close link between the two, High-Scope is not part of the national Head-Start project. High-Scope is especially known for the famous Perry Preschool Project (High-Scope Educational Research Foundation, 2004).

Since 1969 *Sesame Street* has been shown in America. This is a one-hour television programme for infants between the ages of three and six, and a way of learning through fun. One episode consists of a particular theme, which entails a specific letter, number or form. Each episode has a particular outcome that must be achieved. The programme teaches children how to act in particular situations. Adults, children, "Muppets" and guests, who visit weekly, form part of the programme. The majority of the programme (99%) is exposure to Education, and Elmo, an infant who talks in the third person and who gets helped by his co-actors, occupies 1% of the programme. Programmes are divided into small parts, advertisements and news flashes, all with one common theme. *Sesame Street* is shown in 144 countries, including South Africa. Every week 120 million watch *Sesame Street*, of which 5 million are over the age of 13. It provides recreation for old and young, and has won more Emmy's than any

other programme. The programme has been a success for over 30 years, and is still popular (*Sesame Street*, 2003).

In USA the National Association for the Education of Young Children uses the term Developmentally Appropriate Practise (DAP). DAP is a philosophy and an approach to education based on knowledge about how children learn and develop (Gordon and Williams-Browne, 2004: 32). This essential knowledge should form part of teachers' training.

11. Methodology and aim of the project

Theoretical background

The study was done using an exploratory quantitative approach. Contemporary socio-cultural theories such as Bronfrenbrenner's ecosystemic perspective, Vygotsky's social constructivist learning theory and Piaget's constructivistic theory of child development have much to offer for a theoretical framework for understanding school readiness (Donald, Lazarus and Lolwana 2002: 40).

Methods

- Literature study of key elements regarding learning readiness in ECD and programmes in America;
- Establishing a physical and theoretical curriculum for a grade R class;
- Interviews with teachers;
- Focus group interview with parents (parent meeting);
- Interviews with principal of farm school and teachers;
- Data collection of pictures of children.

The aim of the research is to help a farm school in the Potchefstroom district to set up a Grade R curriculum to enable the marginalised farm school children to learn in a constructivist way in an environment with a day programme where they are stimulated effectively by means of an intervention programme (DAP). In this learning environment they gradually learn English words (vocabulary) and concepts from the NCS. They need this for understanding the LOLT (English) in the primary school where they will attend a Grade 1 class at this farm school. The medium of instruction of this school is English and the majority of the learners speak Setwana as a home language.

Outcomes reached

The project started with a visit to all the farm schools in the district at the end of 2007. All the principals indicated that they have open classes at their schools and were very interested in having a grade R class at their school. The researcher decided to identify one specific school because their medium of instruction in grade 1 is English. The other farm schools' LOLT is Setswana.

The principal then had to apply to the educational department for the registration of this grade R class at her school. To get a qualified facilitator was the next challenge. The requirement was that she must be able to speak Afrikaans, English and Setswana. The first facilitator only could remain until the end of January. She only had a standard 8 certificate. The next facilitator previously worked at a pre-school and asked to enrol for training at a level 1. The researcher started training 22 ladies on Saturdays using the material of a NGO. For enrolling at this NGO college in order to obtain a level 1 qualification the students had to pay R2,000. This would enable her (the facilitator) and the other ladies to get appointed at a school and to earn a salary. After a level 4 qualification they can teach at a grade R class but they must be registered at SAICE. Only 5 ladies completed their level 1 that year. During 2008 the researcher bought things for the school. Some people and pre-schools in town donated some of the things for the class. The pictures taken from time to time at this site tell the story.

In January 2009 a new facilitator started with a level 1 qualification. Up to this point the Department of Education had marginalised this farm school and therefore the children by not paying this facilitator's salary. The researcher approached people and businesses to sponsor this salary to no avail. One of the churches in the community sponsored the salary for six months. The department official told the principal that seeing that we cope we can go on like this by paying the facilitator's salary from our pockets. The lady cannot be appointed without registration at SAICE. The principal is also battling with the department regarding transport for the children to the school. Some of these small children walk for up to 10 kilometers to get to school.

In the interviews (qualitative research) all the teachers reported that the grade 1 learners who attended the grade R class during 2008 are far better than the grade 1 learners of the previous years and that they are even better compared to the grade 2 learners this year. The teacher of the grade R class reported during the interview that she can see the improvement in the learners' performance since the beginning of the year, for example in their cutting and drawing pictures. She also reported that she does not feel adequately trained to teach a grade R class.

The researcher uses the learner's drawings to assess the level of development of the grade 1 learners who attended the grade R class during 2008 with the grade 1 learners who did not. The pictures show that the grade R learners of 2008 are far more advanced in their development.

12. Recommendations

Teacher training

Currently there is a great need for qualified teachers for learners in the pre-school years in South Africa. Only 12% of preschool teachers/facilitators are trained. A training programme for teachers of disadvantaged and marginalised 5/6 year-olds will lay a firm foundation for future learning success and contribute to the bridging

of the achievement gap. This will also make provision for teachers at farm schools where Grade R children are at this stage neglected and marginalised.

It is important to train more quality teachers with a vision of a flexible child-centred curriculum. Teachers must also be able to address a wide range of areas beyond normal curriculum issues to meet the needs of more diverse student populations (aptitude, learning styles and prior knowledge) such as the farm school children in this case study. Teachers must have knowledge of learning and child development as well as classroom management. They must have a strong background in cultural competencies to be able to successfully accommodate the cultural diversity within their classrooms and be able to design intervention programmes. They must also be able to give guidance to parents regarding their children.

An effective training programme for teachers will enable them to address the problems of disadvantaged and marginalised 5/6 year-old farm school children.

Parents

Schools should attempt to offer ABET programmes to enable illiterate parents to learn to read and write. Parents should receive guidance regarding the upbringing of their small children. They can be provided with ideas such as talking to their children, telling family and other stories and so expanding their children's knowledge and vocabulary. Parents should also be advised not to send their child to grade 1 too early (not before the year s/he turns 7).

13. Conclusion

This article is based on a report of a scholar from the NWU reaching out to farm children who have been marginalised from Grade R education. This is an attempt to create a sustainable empowering learning environment namely a Grade R class at a farm school for these young learners. This project shows engagement as a university to put theoretical and practical knowledge into schools as in-service learning.

The Department of Education uses Early Childhood Development (ECD) as an umbrella term for the education of children, from birth to at least 9 years old, to grow and to thrive, physically, mentally, emotionally, spiritually, morally, and socially (DoE, 2001a). The ECD learning phase includes the Reception Year (Grade R) and the Foundation Phase (Grades 1 to 3).

According to the Education White Paper on Early Childhood Development (DoE, 2001a), the purpose of Grade R policies and programmes is to protect the child's democratic right to develop his/her cognitive, emotional, social and physical potential. Because ECD is still not compulsory for all 5 to 6 year-old learners, African children from rural communities are the most likely to suffer exclusion from ECD programmes (DoE, 2001a). In this way they are marginalised from the school system. Therefore this research tries to create a sustainable empowering learning environment for these marginalised farm children by means of a scholarship of engagement.

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Chapter 11

Why is OBE failing in the township schools of the Free State Goldfields?

Masilonyana Motseke
Central University of Technology, Free State
mmotseke@cut.ac.za

1. Introduction

The learners going through outcomes-based education (OBE) were expected to acquire skills which would help them to become critical thinkers, good workers and good citizens. However, this is not the case for learners in the Free State Goldfields' township schools, where the implementation of OBE failed. The purpose of this study is to investigate why OBE is failing in the Free State Goldfields' township schools. The impact of this failure on the society is also considered. In order to determine these reasons, a questionnaire was developed and administered to 183 educators from township primary schools in the Free State Goldfields. Focus group interviews were also conducted to confirm information collected by means of the questionnaire. Data collected was qualitatively analysed. It was found that the inadequate professional training of educators, the poor home backgrounds of learners, illiteracy of parents, and a lack of adequate resources and facilities were the main reasons why the implementation of OBE failed in these schools. The re-training of the township school educators, the involvement of parents and the provision of resources may help to implement OBE more effectively in these schools. The inability to address the problems mentioned above could lead to the production of learners who will become unskilled workers and uncooperative members of the community – in contrast to OBE principles.

Prior to 1994, the South African government provided different education systems for the various racial and ethnic groups. Consequently, there were 15 distinct departments of education, each serving different racially or geographically defined groups of learners, with schools for whites receiving far more financial support than schools for other races (Fiske and Ladd, 2005). Education provision for blacks, in particular, was viewed as inferior and perceived by some as promoting enslavement (Fiske and Ladd, 2005; Spady and Schlebusch, 1999). The democratic government was compelled to introduce a new system of education that would not only address the oppression, segregation and rote-learning promoted by apartheid education (Naicker, 1999), but also be in line with the requirements of the South African Constitution (RSA, 1996). The government viewed Curriculum 2005, with OBE as its teaching and learning approach, as the appropriate system of education.

OBE introduced new approaches to teaching, learning, assessment and management within classrooms and schools. It was hoped that OBE would, among others,

- promote cooperation and teamwork among groups and individuals;
- promote creative and critical thinking among all learners;
- guarantee academic success for all learners, and
- equip all learners with skills, knowledge, values and attitudes required for future success (Naicker, 1999; Steyn and Wilkinson, 1998, Van der Horst and McDonald, 1997).

However, the above-mentioned outcomes have not been realised, especially in the black township schools. By contrast, a number of complaints have been raised since the introduction of OBE, including:

- learners not being able to read, write and do mathematics,
- educators not implementing OBE, but continuing with old teaching methods,
- more administrative/paper work for educators and less time for teaching, and
- the conditions in schools, such as time-tabling and educator-learner ratios, still not aligned to OBE (Onwu and Mogari, 2004; Vandeyar, 2005).

Many countries adopted OBE before it was implemented in South Africa. There are conflicting reports with regard to the success of OBE in those countries, with some countries reporting general success, while others indicating absolute failure (Mason, 1999; Vandeyar, 2005; Van Niekerk and Killen, 2000). Despite the differences, the common understanding in the reports is that the implementation of OBE required adequate provision of resources and intense personnel development, as well as major adaptations in school/classroom management, teaching, learning and assessment – with considerable financial implications (Vandeyar, 2005).

The implication is that South Africa faced serious financial and emotional challenges in the implementation of OBE. South Africa's inability to effectively manage the challenges could be responsible for the problems currently experienced with OBE, especially in the township schools.

The purpose of this study was to investigate the factors which make OBE fail in the black township schools of the Free State Goldfields.

2. Research methodology

The research design selected was a basic interpretive qualitative approach, with the aim of giving a descriptive analysis of the factors which make OBE fail in the township schools of the Free State Goldfields. The descriptive approach is oriented towards providing thorough descriptions of social phenomena, as well as their meaning and their implications. This approach was chosen because it is flexible and exploratory; it is also contextual since it captures the naturally occurring behaviour of participants in their natural setting, and in the way the participants themselves view their behaviour (Babbie and Mouton, 2001; Merriam, 2002).

Data collection was done by means of a questionnaire and semi-structured focus group interviews. Once the questionnaires were processed, coded and patterns established, focus group interviews were conducted. The focus group interviews were used to

check and support data obtained by means of the questionnaires. Babbie and Mouton (2001) agree that both questionnaires and interviews are suitable methods for use in a qualitative descriptive investigation. Focus groups of eight to ten educators were formed for the purpose of conducting interviews. A tape-recorder was used and notes were taken during the interviews. The data collected during the focus group interviews was grouped, patterns were established and codes were assigned to these patterns. The interpretive reporting approach (Krueger, 1998) was used.

There was a need to provide numerical data in order to indicate how often certain occurrences or situations applied to the respondents. Silverman (2001) believes that simple counting techniques can offer a means to survey the whole corpus of data ordinarily lost in intensive, qualitative research. Dey (1993) states that numbers and quantities may be used to express situations in a qualitative research, but more value should be attached to the feelings and expressions of participants regarding the situations, than to the numbers. In this study simple totals and percentages were used to enhance the understanding and interpretation resulting form the qualitative data.

Data was analysed qualitatively. Laverty (2003) views data analysis in a qualitative research as the reconstruction of the participants' system of knowledge, their interpretations of their lives, and their classification of their experiences into the themes or topics under discussion. The township educators' responses were viewed as the genuine interpretation and understanding of their situation.

The study was limited to the primary school educators in the Free State Goldfields. Simple random sampling was used – since every primary school educator in the Free State Goldfields had an equal and independent chance of being selected as a member of the sample (Payne and Payne, 2005). Of the 185 educators who were selected, 183 responded – a response rate of 98.9%.

The study was approached from a sociological perspective: while the factors that made OBE fail in the township schools were investigated and revealed, the impact of OBE for the community/society were also considered.

3. Ethical issues

Permission to conduct the research was obtained from the Free State Provincial Department of Education. A letter was written to the principals of selected schools, requesting permission to visit their schools and meet educators. Participating educators were informed that their participation was voluntary and that all information would be treated with strict confidentiality. Participants were requested not to write their names or names of their schools on the questionnaires, in order to protect their identities.

4. Results and discussion of results

The responses of participants are recorded in Tables 1 and 2 below.

The items in Table 1 were developed from issues that were viewed as having an influence on the implementation of OBE in general. Items in Table 2 included factors that influenced classroom processes (such as teaching, learning, assessment and recording).

Table 1: Factors influencing OBE in general (N=183)

Items	Yes %	No %	Total %
Did the teacher-training programme you followed at college/university prepare you for OBE?	10.9	89.1	100
Did the DoE provide you with any OBE training?	75.4	24.6	100
Is OBE material such as handbooks and teaching aids from the DoE adequate (i.e. was it received by all learners)?	10.9	89.1	100
Are parents able to buy additional material for their children?	7.1	92.9	100
Does continuous assessment in OBE mean more written tests than previously?	62.8	37.2	100
Does the illiteracy of parents negatively affect the learning of your learners?	94.0	6.0	100

Table 2: Factors influencing OBE in the classroom (N=183)

Items	Always %	Often %	Sometimes %	Never %	Total %
The number of learners in my class enables me to implement OBE easily.	11.5	9.8	32.8	45.9	100
The poor home background of my learners hinders their progress.	69.9	15.9	14.2	0	100
Because of the lack of material and facilities in my school, I am forced to teach by only talking and writing on the chalkboard.	40.5	20.2	28.4	10.9	100
The conditions existing in my classroom make it difficult for me to achieve the set outcomes.	51.9	15.9	27.3	4.9	100
I can apply OBE assessment techniques with confidence.	9.3	14.2	52.5	24.0	100

The relevance of professional training to outcomes-based education

In order to determine the relevance of their training for the OBE approach, participants were asked if the professional training they had undergone had prepared them for applying OBE in their teaching activities.

The majority of the respondents (89.1%) mentioned that their professional training had not prepared them for the OBE approach. It should be noted that many black educators received their professional training during the apartheid era. Therefore, their professional training was not aligned to the OBE approach, but was relevant to the apartheid education that was offered to black learners at that time (Onwu and Mogari, 2004; Taylor and Vinjevold, 1999). The non-alignment of professional training to the OBE approach implies a substantial gap in the execution of important activities such as preparations for lessons, methods of lesson presentation/facilitation and assessment strategies. The situation would normally be managed by the introduction of an intensive programme of in-service training for educators, in an attempt to provide them with basic skills required for the OBE approach. Such an intensive programme of in-service training would require considerable funding.

The Department of Education (DoE) provided some OBE training in the form of workshops. However, the educators complained that the workshops were too short (the duration of training ranged from a few hours to one week), and too theoretical (only lecturing in one big venue, with no demonstrations or practical application of the OBE approaches).

The other complaint raised by educators was that the workshop facilitators were uncertain about some of the principles and practices within the OBE approach. The lack of demonstrations and the perceived uncertainty of workshop facilitators imply that the training provided by the DoE was not helping educators to implement the OBE approach.

Comments related to the workshops provided by the DoE for educators included the following:

> The information did not help that much because the course facilitators were also not sure of some OBE principles, and they also did not help us with our individual problems – it was just a general presentation.
> OBE needs enough time to be practiced.
> I still have problems after these workshops.

Educators enjoy respect and recognition due to their level of education, the expert knowledge of the teaching practice and the role they play in the education of learners, especially in the township where many people are illiterate. With the introduction of OBE educators become novices; this has a negative impact on their professionalism, as well as on the respect they enjoy from society (Vandeyar, 2005). These educators may be forced to use their old teaching methods, in order to avoid fumbling with OBE approaches.

THE INFLUENCE OF CLASS SIZE ON THE IMPLEMENTATION OF OUTCOMES-BASED EDUCATION

In the OBE approach smaller numbers are recommended in order to promote learner participation, learner-centredness and individual assessment (Spady, 1994; Van der Horst and McDonald, 1997). However, big classes were found to have a negative influence on the respondents' ability to implement OBE. Only 11.5% of the

respondents could easily implement OBE, and 9.8% could do so most of the time. The rest could not easily implement OBE with their large numbers (45.9% never and 32.8% sometimes).

Educators remarked as follows:

> I have 51 learners and I cannot attend to individuals because time is limited.
> Sixty learners; it is not possible to teach OBE in such a class.

The official educator:learner ratio is 1:35 for secondary schools and 1:40 for primary schools. However, many township classrooms still have more learners than officially prescribed (Chisholm, 2005). Kokot (1997) maintains that it would require a highly trained educator to handle 40 learners in the classroom. Therefore, the inadequately trained township school educators would find it difficult to handle the large classes, especially within a complex system such as OBE.

The educators' inability to handle large classes could lead to behavioural problems, ineffective teaching and poor results – all factors with the potential to have negative long-term effects among learners as workers and as members of society.

MATERIAL, EQUIPMENT AND RESOURCES IN THE IMPLEMENTATION OF OUTCOMES-BASED EDUCATION

The supply of materials such as charts, glue, colouring pens, drawing pins and teaching aids from the DoE was not sufficient for all learners. The majority of the respondents (92.9%) reported that parents were unable to buy additional material. The lack of teaching aids could also promote a situation where the educator does most of the talking, while learners listen quietly ('chalk-and-talk'). Only 10.9% of the respondents never used 'chalk-and-talk', while 40.5% always used it, 20.2% often used it and 28.4% sometimes used it.

In addition to the lack of materials, the township schools are generally characterised by a lack of libraries and laboratories, and a shortage of equipment such as photocopying machines, computers and data projectors (Bloch, 2008). Since the OBE approach emphasises self-discovery and learner participation (Spady, 1994), the dearth of material and equipment negatively influences the implementation of the OBE approach in the township schools.

The comments of participants included the following:

> I try to teach without material, but my teaching is not effective and interesting.
> My teaching becomes negatively affected if there is no material. I cannot teach creativity in children.
> Enough material is needed.

The non-availability of teaching and learning material may be stressful for the township school educators as it may, among others, have a negative impact on the teaching of the educator, and promote feelings of failure among these educators (Vandeyar, 2005). The former Model C schools are in a position to provide teaching and learning material where the DoE fails to do so – since the majority of parents

of learners in these schools can afford to pay school fees (Fiske and Ladd, 2005; Vally, 2005). The availability of teaching and learning material in the former Model C schools may lead to the achievement of set outcomes, and the production of good-quality learners, whereas the non-availability of materials in the township schools may imply poor teaching, poor-quality learners and poor results – factors which reduce the respect and recognition township educators enjoy.

The role of the home background in teaching and learning

Research revealed that the home background of learners and their economic and social circumstances, play an important role in their linguistic and educational development (Coltrane, 2003; Sibaya, Sibaya and Mugisha, 1996; Van der Horst and McDonald, 1997). Fiske and Ladd (2005) found that, due to their advantaged background, white learners generally perform better than black learners. In the OBE specifically, the educator is expected to use the learner's existing knowledge in order to lead to new knowledge (Spady, 1994). The township schools have many learners who come from backgrounds characterised by lack of books, television and internet access (Fiske and Ladd, 2005; Mpeta, 2000). These learners may, therefore, not be exposed to educative material, or may have little relevant knowledge which the educator can use as a starting-point in lesson presentation. It is for this reason that the majority of the respondents (69.9% always and 15.9% often) indicated that the poor home backgrounds of their learners hindered the learners' progress. The implication is that the educator remains the only source of information and is expected to explain and describe (i.e. do most of the talking), while learners mainly listen.

The comments of participants were:

> I have to lower the standard of my lesson because these learners lack the broad insight and knowledge.
> I have to oversimplify my lesson to accommodate them.
> The lesson becomes very difficult because I do not know where to start with them.

The other issues related to home backgrounds could be discipline, attitudes and behaviour. For instance, informal settlements are generally known for high incidents of crime, child abuse, prostitution and general lawlessness (Dunlap, 2000). Children who are exposed to these activities may be attracted and find themselves perpetrating such activities (Dunlap, 2000; Fiske and Ladd, 2005). Bloch (2008) believes that poverty, hunger, child abuse and criminal gangs have an impact on what is happening in the classroom. Therefore, unhealthy and unsafe home backgrounds do not only contribute to poor learner performance, but may also turn children into delinquents and social misfits.

Parental involvement in outcomes-based education

The OBE approach emphasises parental involvement in the learners' education and school tasks. Parents are expected to help their children to do homework, to collect and prepare material for projects, to monitor progress of their children and to attend

parents' meetings and evenings (Onwu and Mogari, 2004; Spady and Schlebusch, 1999). However, the situation where parents participate effectively in the education of their children applies to middle-class parents, who are literate or educated – most of these have children in the former Model C schools (Vally, 2005). The majority of the township school parents are from the working (or low) class, are illiterate and are unemployed or earn low salaries (Vally, 2005) – hence their involvement in school matters is minimal or non-existent. It is for this reason that the majority of the respondents (94%) believe that the illiteracy of parents negatively affects the learning of their children.

The lack of parental involvement in school activities led to the following comments by participants:

> It increases my workload, and it also makes it difficult to identify the learners' problems.
> It increases my workload because I have to cover even the parent's role.

Apart from issues related to illiteracy and poverty, negative attitudes among township school parents also contribute to the lack of parental involvement in school matters. Many parents in the township schools hold the view that educators are paid a lot of money to teach their children, and they, as parents, are not expected to do work that is supposed to be done by educators (Steyn and Van Wyk, 1999).

The OBE approach has the potential of ensuring that education is relevant to the needs of the community, because of its emphasis on parental involvement. The involvement of communities in education is vital for the general success of education and schools. Msila (2007) refers to the involvement of communities in education as social capital, and he believes that education and schools may not succeed without adequate support and influence from communities. However, the support for schools by township communities is minimal due to poverty, low educational level and the parents' concern or obsession with basics such as food, shelter and clothing (Mpeta, 2000; Vally, 2005). The lack of parental involvement implies that financial support, contribution of ideas and influence on school culture by parents are minimal or non-existent – in contrast to what the OBE approach recommends. The successful schools have effective School Governing Bodies which are supported by the community (Msila, 2007; Fiske and Ladd, 2004). The support from the communities may be one of the reasons why former Model C schools achieve success in the implementation of OBE, while the lack of community support may be contributing negatively to the implementation of OBE in the township schools.

ASSESSMENT IN OUTCOMES-BASED EDUCATION

Assessment was also found to be the least understood activity among township school educators. This is confirmed by the 62.8% of the respondents who indicated that continuous assessment in the OBE approach meant more written tests. In addition, only 9.3% of the respondents were always able to apply OBE assessment strategies with confidence.

The comments of participants were:

> I do not worry myself about what I do not know, I just do what I know.
> I do not know assessment. I am worried.
> Not certain. I feel bad.

Assessment plays a major role in OBE since it is only through the application of the different assessment strategies that the achievement of outcomes can be determined (Spady, 1994). The implication is that the majority of the township school educators could not apply OBE assessment, and could, therefore, not determine the achievement of set outcomes. The aim of the outcomes is to promote the achievement of certain skills and attitudes among learners, with the hope that a certain type of workers and citizens will ultimately be produced (Spady, 1994). Without proper assessment, it is not known whether the required skills and attitudes are achieved; consequently, it is not known whether the required type of workers and citizens would be produced.

5. CONCLUSION AND RECOMMENDATIONS

The study indicated that the implementation of OBE in the selected Free State township schools was failing due to problems such as poor educator training, lack of equipment and resources, and poor involvement of parents in school matters. It was also indicated that the failure of OBE may have negative consequences for the society, especially for township communities.

The literature consulted indicates that some developed countries also experienced problems in the implementation of OBE. In the case of South Africa, the literature indicates that factors such as the apartheid policy and the lack of planning by the post-apartheid government have contributed to the failure of OBE, especially in the township schools.

In order to ensure the effective implementation of OBE in the township schools, the following issues need to be addressed:

The shortage of basic equipment and materials is the main reason for poor implementation of OBE in the township schools. Therefore, the provision of adequate resources may improve the implementation of OBE in the township schools.

The provision of facilities such as libraries and laboratories could play an important role in the implementation of OBE in the township schools, especially if one considers that many learners come from poor backgrounds with little or no exposure to internet, television and books.

Intensive training or re-training of township school educators is to be undertaken, especially in OBE teaching approaches, assessment strategies and record-keeping. Since OBE is a complex approach, the intensive training is to be accompanied by regular in-service and refresher courses – until educators have fully grasped the OBE approaches and its strategies.

The promotion of parental involvement in the education of their children may contribute positively to the success of OBE in the township schools. Helping their children with projects, making financial contributions to schools and becoming involved with learner discipline are some of the benefits of involving parents in the schooling of their children. This could be done by means of workshops, parents' evenings and cultural activities.

6. Concluding remarks

Spady (2008) indicated that the implementation of OBE in South African schools failed for the following reasons:

- the South African schooling system was not yet ready for a complex system such as OBE;
- the South African officials who introduced OBE misinterpreted some of the OBE principles;
- the language used to express the outcomes was inconsistent and peripheral, and
- the OBE being implemented in South Africa is not the OBE he developed and advocated.

Due to the above-mentioned reasons, Spady (2008) called the South African Department of Education (DoE) to 'drop the OBE label'.

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CHAPTER 12

Psychological assessment and evaluation of learners by child guidance clinics

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Sibusiso Radebe
KwaZulu-Natal Department of Education
sbssradebe@yahoo.co.uk
&
Molebatsi Milton Nkoane
University of the Free State
nkoanemm@ufs.ac.za

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1. INTRODUCTION

This chapter aims to explore psychological assessment and evaluation of learners by child guidance clinics. The eco-systemic approach to psychological assessment and evaluation of learners is interrogated and viewed as a positivist medical approach. Prior to 1994, psychological evaluation methods in South Africa were used to perpetuate apartheid policies.

The theoretical framework used in this study is emancipatory, especially when considering learners who experience barriers to learning and development. This chapter presents and interprets data from three contradictory approaches, which are positivist, critical emancipatory and textual-orientated discourse analysis. Five child guidance clinics were targeted as the research population for this study. Findings show that psychological assessment and evaluation of learners were culturally biased, indicating that child guidance clinics need to revisit the aims of psychological assessment and evaluation of learners.

In the process of providing quality service delivery, the welfare and support of a learner was and will remain the main focus. Some learners had to be psychologically assessed in trying to find out how best they can be supported in order to maximise their potential. Child guidance clinics are tasked with the responsibility of providing psychological intervention to learners who experience barriers to learning and development. Psychological assessment and evaluation of learners is too broad, complex and debatable; attention is focused on psychological testing and techniques for purposes of being systematic. Engelbrecht, Green, Naicker and Engelbrecht (1999: 101) state:

> Assessment can be difficult to understand properly because it is a most complex and constantly changing field that impact on so many areas of our lives and has such far-reaching consequences.

This chapter combines the aims of psychological assessment and evaluation of learners, and the goals of inclusive education in order to explain learner support

in an inclusive education context. This challenges psychology as a profession in as far as transformation of psychological assessment and evaluation is concerned. The aims of psychological assessment and evaluation and the decisions taken out of the assessment and evaluation results are of critical importance.

There is a great deal of debate about what psychological instruments/techniques assess concerning the behaviour of human beings. In education, it became imperative to critically examine the aims of psychological assessment and evaluation of learners and how does this impacts on their learning. In the past, if a learner was not making satisfactory progress at school, s/he would be referred to a psychologist, social worker, speech or occupational therapist and/or a medical practitioner for intervention. Such a learner would then be classified according to the assessment results and sent to special programmes such as remedial or special education. Currently, a learner who is experiencing a learning breakdown is assisted at his/her school using alternative forms of assessment and not necessarily psychological assessment.

This chapter starts by exploring the aims of psychological assessment and evaluation of learners in an inclusive education context. The aims of psychological assessment and evaluation in education need to be re-visited. This means that a need for a paradigm shift in psychological assessment and evaluation practices in education is inevitable. Pahad (1996: 1) mentions that "a dramatic paradigm shift is needed in assessment practice across education and training in South Africa, as a logical and essential part of the transformation envisaged in new policies. The critical characteristic of the required shift is the move away from a judgemental to a developmental role for assessment". The aims of psychological assessment and evaluation should be to enhance good-quality teaching and learning in order to help learners realise their potential.

2. Purpose of the study

The purpose of this study is to investigate the aims of psychological assessment and evaluation of learners by child guidance clinics in order to realise the goals of inclusive education. The aims of psychological assessment and evaluation of learners need to change and be developmental in nature so as to be compatible with the goals of inclusive education. Lastly, the study aims to demonstrate the assumption that the use of psychometric assessment as a sole psychological intervention strategy does not address the needs of learners. This study therefore suggests that multiple approaches to learner assessment and evaluation are relevant to address the needs of learners. The study also lays a foundation for further research that can be used in the formulation of alternative psychological assessment and evaluation strategies for learners.

3. Theoretical framework

The paper suggests the use of the emancipatory eco-systemic approach to psychological assessment and evaluation of learners in an inclusive education system as its theoretical framework. The starting-point of the argument is that the use of a medical child-centred deficit approach to psychological assessment and evaluation of learners does not address their needs. The medical approach views a learner as having a problem. It overlooks other factors that play a vital role in learner performance. Some of the factors that play a role in the psychological assessment of learners are culture, emotional status of a learner during assessment, learner's familiarity with the vocabulary used in the test, standardisation and the theoretical background of a test or a technique. Assessment should be inclusive in the sense that it involves a number of assessment strategies, as it is argued in DoE (SIAS).

An eco-systemic theory considers a number of factors that could determine the mental ability and performance of learners. Mahlomaholo (1998: 17-18) states "African pupils cannot be seen as 'inhabited' by an inferior static cognitive ability. They cannot be understood to be fixed, reflecting inability to perform in mathematics". Nkoane (2006: 10) shares the same sentiments. This is in agreement with the contestation put forward in this paper.

4. Research methodology

The sample

The research design used in this study is a survey research design which is informed by qualitative and quantitative approaches. The main purpose of using both quantitative and qualitative research approaches (triangulation) in this study was to crosscheck the findings made.

The population for the study comprised the following five Free State child guidance clinics: Kroonstad, Welkom, Sasolburg, Bethlehem and Bloemfontein. Schools, parents and other health professionals refer learners for educational and psychological intervention up to 18 years of age to these clinics. Referred learners come from diverse socio-economic and educational backgrounds. These clinics have various specialists such as psychologists, school social workers, speech therapists, special education specialists, and remedial specialists. All members of the five child guidance clinics qualified as participants in the study because of the nature of their work. They had different characteristics which Du Plooy (1995: 50) calls 'population parameters'. In this study there was no need to sample the population *per se* because all members of the child guidance clinics qualified for inclusion in the research population. Another reason was that the entire research population could be well managed.

A total number of 35 child guidance clinic members took part as research participants as follows: Bloemfontein clinic, N=8; Kroonstad clinic, N=6; Welkom clinic, N=5; Sasolburg clinic, N=6, and Bethlehem clinic, N=10. Purposive sampling was used as a sampling strategy in order to answer the research critical questions. The sample was

of best interest to the researcher (Cohen and Manion, 1989; Robson, 2002). Findings were used to generalise and compare the population from which the sample was drawn (Shaughnessy, Zechmeister and Zechmeister, 2000: 148-149).

THE INSTRUMENTS

Questionnaires, interviews and file analysis were used for this study. Questionnaires consisted of closed and open-ended questions. Closed-ended questions required participants to answer "Yes" or "No", "Strongly agree", "Agree", "Uncertain", and "Disagree". The questionnaires administered consisted of two sections. Section A was made up of 5 items regarding participants' biographical details. Section B consisted of 11 items regarding psychological assessment and evaluation of learners, assessment tools and evaluation techniques used, rating of instruments in order of preference, and selection criteria.

Semi-structured interviews were also used as data production tool. Twelve (12) interviews were conducted within two weeks with members of the Free State child guidance clinics. Other informal interviews were conducted with informants who were knowledgeable in the field of psychological assessment and evaluation of learners. An agreement was reached prior to the interviews that being allocated a code 'P' instead of their names would identify participants. This was to ensure anonymity and to make participants feel free to give their views without any fear of being victimised or discriminated against. The researcher at this level of data production was interested in understanding the discourses generated and constructed by the participants. Free Attitude Interview (FAI) technique was used as a non-directive depth interview technique. This is a qualitative interview technique which allows for the construction of knowledge through the participants' lens, making the research design open and flexible.

Each participant was interviewed for approximately 45 minutes. Participants were asked open-ended and where possible closed-ended questions related to psychological assessment and evaluation of learners and inclusive education. All interviews were audio-taped, and notes were taken, transcribed, and analysed to check for similarities and differences. Participants were free to express their understanding of the aims of psychological assessment and evaluation. A pilot study was conducted in order to refine and bring quality to the research instruments.

Lastly, a total number of 50 files of learners who were referred to Bethlehem child guidance clinic for psychological intervention between 1993 and 2004 were audited. These files were randomly selected. The researcher chose the period 1993 and 2004 in order to examine the trend of assessment and evaluation during the apartheid era and after the birth of our democracy. Out of the 50 files, 31 were for black learners, 7 for coloured learners and 12 for white learners.

DATA ANALYSIS PROCEDURE

Both quantitative and qualitative methods of data analysis were used. Quantitative data were analysed descriptively and statistically. Open-ended questions were

analysed thematically using standard inductive techniques. Interviews were textually analysed and themes created. This was a critical qualitative emancipator approach which was more orientated towards the perspective of the researched and how they contextualised psychological assessment and evaluation of learners. A qualitative research approach was used in an open and flexible manner.

5. DISCUSSION AND IMPLICATIONS OF FINDINGS

This study shows that many learners are still being marginalised in the use of psychological assessment instruments. Most therapists, in particular psychologists, use psychological tests to determine the mental ability of a learner and predict future performance. There was a lack of policies that support learners who experience barriers to learning and development until the establishment of Education White paper 6: Special Needs Education Building an Inclusive Education and Training System (2001). There is also a lack of support structures for learners who experience barriers to learning and development. Practices on psychological assessment and evaluation of learners and policies on learner support and development were examined. Views of practitioners (therapists) on the aims of psychological assessment and evaluation of learners were analysed. This study also examined Inclusive Education policy (EWP06) introduced by the Department of Education to give support to learners who experience barriers to learning and development (DoE, 2001). This then suggests that therapists in education should re-think about using the medical approach (psychometric testing) as the sole psychological intervention strategy instead of the eco-systemic approach. It has become clear that psychology as a profession will witness significant changes in its practices.

QUALIFICATIONS AND AGE

Data produced in the use of questionnaires indicated that all Free State Child Guidance Clinics personnel had relevant qualifications to conduct psychological assessment and evaluation of learners. The majority of them had B.A., M.A. Psychology, B.Soc and M.Soc, M.Ed and B.A. Hon. Psychology as illustrated in Figure 5.1. Their qualifications allowed them to assist learners who experience barriers to learning and development. The above figure above shows that when the study was conducted 27% of the participants were in the age group 35-39; while 18% of them were in the age group 30-49. This shows that the majority of the participants are still within the working age group. The age group 35-39 still has many years to practise psychological evaluation before they reach retirement age. It is inferred that this age group was schooled in the medical discourse of psychological intervention. This then has an influence on how they understand a learning breakdown, assess learners and suggest a plan of action.

RACE AND GENDER

Participants were also asked to indicate their race and gender for grouping them into race and gender groups. The study shows that males (27%) and females (14%)

dominated the age group 30-34. There were more blacks (21%) than whites (16%) in this category. In the age group 35-39, males formed 36% against females 23%; blacks dominated this group by 50% over whites who formed 11%. Whites at 26% dominated the age group 40-44 over blacks who formed 7%. In the same age group, females were at 23% while males were at 9%. Females dominated the age group 45-49 by 23% over males who were at 9%. In this age group, blacks were at 21% over whites who formed 16%. In the age group 50-54, whites were at 26% and there were no blacks. Males dominated this group by 18% while females were at 14%. The last group 55-59 consisted of whites and females at equal 5%; there were no males and black participants.

Data produced in section A of the questionnaire seems to show that females dominate their male counterparts. This study indicates that in the Free State Child Guidance Clinics there are more female than male assessors. This might be because females are more passionate than males to work with learners who experience barriers to learning and development. There are more white than black assessors. This means that whites assessed most learners. This ratio imbalance has a great influence on language and culture during the assessment and evaluation process. It can then be concluded that in the Free State Child Guidance Clinics, assessment and white females dominate evaluation of learners.

Language and culture

This study shows that 88% of the participants speak English as their second language and 58% speak Afrikaans as their first language. IsiZulu is spoken by 9% as the first language and 3% as the second language. It is also important to note that 18% speak Southern Sotho as their first language and 9% as their second language. Northern Sotho is spoken by 3% as the first language and IsiXhosa is spoken by 12% as the first language. No one indicated English as his/her first language, Afrikaans as second language, Northern Sotho as second language and IsiXhosa as second language. This shows that Afrikaans-speaking assessors assessed the majority of the learners. Learners who are not Afrikaans speaking were being disadvantaged in the assessment process. This study also shows that assessors and learners have different cultures. Both of them come to the assessment process with their cultural experiences and the way things must be done. In such a scenario, the question of assessment fairness and validity in context becomes an important issue. It can thus be safe said that during the assessment process, there was a great deal of bias in as far as language and culture are concerned. It is important to note these factors as they influence the assessment and evaluation process between the assessor and learners. Language and culture play a vital role in psychological evaluation.

Positions of specialists at the clinics

24% of the participants were remedial specialists and psychologists while 18% were special education specialists, 21% socio-pedagogues and only 12% speech therapists and audiologists. Speech therapists, audiologists and socio-pedagogues were the least in the sample because there are very few of them in all the clinics. The research sample

in this study indicated that there are more psychologists and remedial specialists than other specialists. Psychologists select and use psychological tests for psychological intervention. There are very few or no other specialists in some of the Free State Child Guidance Clinics. It becomes a problem when a learner has to be assessed by a speech therapists. The fact that there is a shortage of specialists in the Free State Child Guidance Clinics compromises the psychological assessment. This problem needs to be attended by the Department of Education as a matter of urgency.

Reasons for working at the clinic

The majority of the participants decided to work at the clinics because they wanted to help educators and parents on how to help learners who experience barriers to learning and development. They indicated that they wanted to apply their skills and their passion to work with young children in need. The reasons provided show that these are the relevant people to work with learners who experience barriers to learning and development. Data produced by means of interviews indicated that they use few psychological tests to assess learners. Language is a barrier as some assessors do not understand the language. Some test norms were compromised as assessors used interpreters. Therapists indicated that they can still work in the inclusive education context. Different assessment methods must be used, not only psychometric testing. Psychological assessment and evaluation should aim to assist learners to realise their potential.

6. File analysis

This data is derived from the files of learners who were referred for psychological intervention at the Bethlehem child guidance clinic from 1993 to 2004.

Table 1: Demographics of learners' referrals

Race	Frequency (n)	Percentage (%)
Blacks	31	62
Whites	12	24
Coloureds	7	14
Total	50	100%

The fact that the file audit showed less white than black learners and more than coloured learners does not suggest that white learners experience fewer barriers to learning than blacks or more barriers to learning than coloureds. Possible reasons could be that white learners had a good academic and social background compared to black learners and as a result were unlikely to be referred for psychological intervention. Another reason could be that the school environment was conducive for white learners to learn and that their problems were adequately attended to at school level. There could have been other reasons which are not highlighted in this study. Data from the files provided valuable information regarding the way learners were

assessed or evaluated. Data showed reasons for referral, race of a learner, age and grade, type of intervention, assessor's position and race, and recommendations.

Reasons for referral in most of the black learners' files were perceptual problems, poor academic performance, inadequate mental ability, emotional and behaviour problems, and placement in special education.

Table 2 shows that the ages of learners referred to the Bethlehem child guidance clinic ranged from 5 to 15 years, i.e. grades R to 9. This is of significance to the study as it shows that most of them were between the ages of 6 and 15 in grades 1-3. The majority of them (36%) were in grade 2.

Table 2: Age and grade of assessed learners

Age	Grade	Frequency (n)	Percentage (%)
5	R	1	4
6-15	1	6	24
6-15	2	9	36
10-11	3	4	16
7-12	4	3	12
13	5	1	4
0	6	0	0
0	7	0	0
0	8	0	0
15	9	1	4
TOTAL		25	100

Many learners were referred for psychological intervention in Grades 1-5. In the last grades (3-5) numbers decreased. No learners were referred in grades 6-8, with only one learner in grade 9 which represents 4% of the sample. This might mean that as they progress with grades, they tend to be academically mature, so there was no need to refer them. There could be another reason(s) which was not evident in the study.

Table 3: Assessment tests used

Assessment tests administered	Frequency (n)	Percentage (%)
SSAIS-R	29	58
JSAIR	01	02
Group Test 5/6	02	04
Group Test 6/8	13	26
ASB	01	02
ASAT	02	04
Frostig	01	02
Bender Gestalt	13	26

Table 3 shows that SSAIS-R was the most used individual intelligence test (58%) to assess learners. Bender Gestalt and Group test 6/8 were at 26% each. Group test 5/6 and ASAT were both at 04%, JSAIR and Frostig were the least used (02%). According to this analysis, assessors used SSAIS-R as an individual intelligence test which gives an IQ score to assess learners. This shows that many assessors still believe in IQ testing which is positivist in nature.

Table 4 shows the assessment techniques used to assess learners. Two assessment techniques used are clinical interview and clinical observation. Clinical interviews were used 6 times and clinical observations were used 3 times.

Table 4: Assessment techniques

Assessment techniques administered	Frequency (n)	Percentage (%)
Clinical Observation	03	06
Clinical interview	06	12

Table 5: File audit of assessed learners

This table shows information retrieved from the 50 files.

File no.	Age in years	Race of learner	Race of assessor	Grade	Intervention	Reason for referral	
1	10	Black	White	3	SSAIS-R	Special education	Special education
2	11	Black	White	4	SSAIS-R	Special education & poor academic performance	Special education
3	15	Black	Black	1	Clinical observation & interview	Special education	Special education
4	10	Black	Black	1	SSAIS-R	Under-achievement	Special education
5	15	White	White	9	Clinical interview	Behaviour	Counselling
6	7	Black	Black	2	Group7/8 & Bender Gestalt	Perceptual problems	Special education
7	5	Black	Black	R	Clinical interviews	Sexual abuse	Psycho-therapy
8	6	Black	Black	1	Interview & clinical observation	School readiness	Special education
9	15	Black	Black	2	SSAIS-R	Under-achievement	Medical intervention
10	7	White	White	4	Bender Gestalt & Group 7/8	Language development & perceptual problems	Remedial education
11	7	White	White	1	Group 7/8 & Bender Gestalt	Perceptual problems	Remedial education

File no.	Age in years	Race of learner	Race of assessor	Grade	Intervention	Reason for referral	
12	8	Black	White	3	Group 7/8 & Bender Gestalt	Perceptual problems	Remedial education & Paediatrician
13	9	White	White	2	Medical doctor, Draw a person & SSAIS-R	Under-achievement	Psycho-therapy
14	13	White	White	5	Interview & Clinical observation	Perceptual problems	Special education & counselling
15	11	Black	White	3	SSAIS-R	Perceptual problems	Remedial education
16	9	Black	Black	2	SSAIS-R	Perceptual problems	Remedial education
17	10	Black	White	3	SSAIS-R	Perceptual problems	Remedial education
18	10	Black	White	2	Bender Gestalt & SSAIS-R	Under-achievement	Remedial education
19	10	Coloured	White	2	SSAIS-R	Perceptual problems	Remedial education
20	7	Black	White	2	Group Test 7/8 & Bender Gestalt	Perceptual problems	Special education
21	8	Black	Black	1	Group Test 7/8 & Bender Gestalt	Perceptual problems	Special education
22	12	Black	White	4	SSAIS-R & Group Test 7/8	Poor academic achievement & perceptual problems	Special education
23	8	Black	Black	2	Group Test 7/8 & Bender Gestalt	Perceptual problems	Special education
24	7	Coloured	White	2	Group Test 7/8 & Bender Gestalt	Perceptual problems & poor academic performance	Special education
25	7	Black	Black	1	Group Test 5/6 & Bender Gestalt	Under-achievement	Special education
26	10	Black	White	3	SSAIS-R	Perceptual problems	Special education
27	7	Black	Black	1	Group Test 7/8	Perceptual problems	Remedial education and occupational therapy
28	8	Black	Black	1	Group Test 7/8	Perceptual problems	Remedial education
29	6	Coloured	Black	1	Group Test 5/6	Perceptual problems	Remedial education
30	10	Black	Black	1	SSAIS-R	Perceptual problems	Remedial education

File no.	Age in years	Race of learner	Race of assessor	Grade	Intervention	Reason for referral	
31	9	Coloured	White	1	SSAIS-R	Perceptual problems	Remedial education
32	11	Coloured	White	1	SSAIS-R	Poor academic performance	Remedial education
33	11	Black	White	1	SSAIS-R	Poor academic performance	Remedial education
34	15	Black	Black	7	SSAIS-R	Poor academic performance	Remedial education
35	6	Black	Black	1	Group Test 5/6	Poor academic performance	Special education
36	10	Black	Black	4	SSAI-R	Poor academic performance	Special education
37	10	White	White	3	SSAIS-R and Clinical observation and clinical interview	Poor academic performance	Medical intervention
38	11	White	White	3	SSAIS-R, Bender and Frostig	Perceptual problems	Medical intervention
39	12	White	White	5	SSAIS-R and ASAT	Perceptual problems	Remedial education
40	14	White	White	7	SSAIS-R ASAT	Perceptual problems	Remedial education
41	8	Coloured	White	3	SSAIS-R and Bender	Perceptual problems	Remedial education
42	9	Black	White	3	SSAIS-R	Perceptual problems	Remedial education
43	14	White	White	8	Bender and SSAIS-R	Perceptual problems	Remedial education
44	9	Black	Black	2	SSAIS	Poor academic performance	Special education
45	5	White	White	R	JSAIS	Speech and Poor language development	Remedial education
46	10	Black	Black	4	SSAIS-R	Perceptual problems	Special education
47	11	White	White	3	SSAIS-R and ASB	Under-achievement	Psycho-therapy
48	10	Black	White	3	SSAIS-R	Special education	Special education
49	8	Coloured	White	2	Group Test 7/8	Perceptual problems	Psycho-therapy
50	8	Black	White	1	Group Test 7/8	Perceptual problems	Special education

According to Table 5, ages of learners ranged from 5 to 15 years old. More Black learners were evaluated than any other group: 62% were Black learners, 24% were Whites and 14% were coloured. This table shows that a Black evaluator evaluated Black learners 19 times and a White evaluator evaluated Black and White learners 31 times. The reasons for referral were special education, perceptual problems, speech

and language development, poor academic performance, school readiness, sexual abuse and underachievement. Perceptual problems were indicated 30 times (60%) as the reason for referral, special education 4 times (8%), speech and language development twice (4%), poor academic performance 10 times (20%), school readiness once (2%), sexual abuse once (2%), underachievement 5 times (10%) and behaviour once (2%). Recommendations were special or remedial education, medical intervention, occupational therapy, psychotherapy and counselling. Out of 50 files, special education was indicated 22 times (44%) as a recommendation, remedial 21 times (42%), medical intervention 4 times (8%), occupational therapy once (2%), psychotherapy 4 times (8%) and counselling twice (4%). According to Table 5, many learners were recommended for special and remedial education programmes.

7. Conclusion

This study challenges the use of psychometric assessment to place learners who experience barriers to learning into special settings such as special education. The move towards an inclusive education system necessitated a change on the use and aims of psychological assessment of learners in schools. This then compelled therapists to change their scope of operation from an individual Eurocentric approach to an eco-systemic approach. Therapists must work as consultants and collaborators in helping teachers and parents to assist learners who experience barriers to learning. The eco-systemic approach to psychological assessment and evaluation is highlighted as the suitable approach to learner support in an inclusive education context. This approach provides alternative methods of assessment and evaluation. It is holistic and humanistic in nature. This study promotes the use of multiple assessment and evaluation methods to learner support and development.

A decision about a learner(s) cannot be taken on the basis of the results of only psychometric assessment. The study also acknowledges that, although numerous people criticise psychometric assessment, psychologists are of the opinion that it can still be used in an inclusive education system. The aim will no longer be to place learners in special settings but to point out their weak and strong points so that a plan of action can be taken. The aim of assessment and evaluation should be to enhance teaching and learning. It is the responsibility of psychology as a profession to develop psychological intervention strategies which will be compatible with the diverse multicultural South African society. Such strategies need to consider the influence of culture, language and the fast developing technology in all spheres. All relevant stakeholders including parents, learners, institutions of higher learning, government departments and teachers must be involved in the development of psychological strategies which aim to unleash learner potential and development (Delpit, 1995: 20). One must consider how the use of psychological intervention negatively or positively influences the education system and how to deal with this in a constructive manner. The majority of the learners must benefit from psychological assessment and evaluation.

This study indicated that white females dominate the assessment and evaluation process. All participants were qualified to psychologically assess learners. Assessors

and learners have different cultures and languages: this poses a problem in assessment. File analysis shows that white assessors assessed many learners and the reasons for referral were mostly perceptual problems. It should be noted, however, that the sample was small and that findings cannot be generalised to other settings.

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Sexuality education: are educators in transition, or just imitating expectations?

Christa Beyers
University of the Free State
BeyersC@ufs.ac.za
&
Dennis Francis
University of the Free State
francisd@ufs.ac.za

1. INTRODUCTION

Many learners in mainstream schools are affected by the HIV pandemic in various ways, and subsequently find it hard to cope at school. Inclusive education aspires for the education system and educators to meet the needs of all learners with barriers to learning, including HIV and Aids, in order to remove the injustices of the past. Educators are thus viewed as social agents who have a sense of their own identity, but even more so a sense of responsibility towards others and society as a whole. The problem is that education systems, including teachers, are more known for their resistance to change, than for innovation. Are they not then regarded as so conservative a force that it maintains a rigid status quo, passed on from the *expert* to the *apprentice?* How then can a teacher change the method of service delivery and then sustain this change?

This chapter explores the demands made on teachers, and as a result challenge and reframe their roles, attitudes and teaching methods with regard to HIV/Aids and sexuality education. The rationale behind this is that teachers still believe that sexuality education is the responsibility of parents, and many feel uncomfortable with the topic. The challenge is to change attitudes, clarify strengths, vulnerabilities and needs of all the role-players affected by HIV/Aids in order to address what is currently wrong with social reality in inclusive schools.

The vast number of HIV/Aids-infected and -affected adolescents in South Africa has become a major challenge for teachers in mainstream schools. According to AVERT (2010), an estimated 5.2 million people have been living with HIV/Aids in South Africa in 2008, and it is believed that over 250 000 people died of Aids in the same year. Young people are at the centre of the HIV pandemic, thus creating the need for teachers to be at the forefront of change to accommodate these learners, ensuring that the future of the country is protected.

The Education White Paper 6 on inclusive education states that all learners, irrespective of the barriers they experience, must be accommodated to ensure that all injustices

of the past are redressed. However, the Department of Education (2000) document *The HIV and Aids Emergency: Guidelines for Educators* places an extra burden on teachers to act as social agents who transmit knowledge and bring about change in behaviour in their profession. The problem arises when the role of teachers is seen in isolation. It should be taken into account that they must deal with their own challenges on a personal level, especially regarding HIV/Aids. According to Theron (in Wood, 2008), the impact of HIV on teachers in general seems to be negative. Not only do they show a decrease in morale, but an increase in absence from school and, therefore, a decline in productive education. This bleak picture emphasises the quest for transformation in which society is reconstructed in such a way that it holds the values of non-discrimination, respect for diversity and redress of past inequalities as recommended by the NCSNET/NCESS report (DoE, 1997).

2. Sexuality education and the need for change

The idea of sexuality education in our schools is a very controversial subject, which many parents and teachers regard as a topic to be addressed at home. Whether sexuality education is necessary in schools or not, is a highly debatable issue. The need for sexuality education by responsible adults becomes clear when considering where most learners derive their information from. The mass media seem to be a powerful influence on attitudes of individuals. The Kaizer Family Foundation (2007) reported that more than 50% of television shows contain inserts with a sexual content, and Brown (2002) found that the word "sex" is the most popular item searched on the internet today. Since we live in a society awash with sexuality, the messages that children gain about themselves and morality are extremely important, but may be hard to impart. Despite public concern, these types of programmes rarely warn viewers about the potential health risks of unprotected sex. Not only learners but also teachers are affected and influenced by these programmes, magazines and the internet. For teachers to effectively address the issue of sexuality, it is crucial that they be highly skilled, well-trained and well-informed individuals, ready to deal with the challenges in the modern, inclusive classroom. Reality is, however, somewhat different. Peltzer and Promtussananon (2003) found that teachers do not always feel comfortable with the idea of talking openly about sex, and they still feel that it is the primary task of parents to educate their children in this domain. In addition, teachers often feel afraid to raise the issue of sex with learners, as they feel that they do not have the skills and knowledge to tackle this task. In order to effectively meet the needs of learners, the attitudes of the teachers concerned with meeting the changing needs of the youth should be addressed. As Kelly (2000: 28) so clearly states: "… the school in an AIDS-infected world cannot be the same as a school in an AIDS-free world". Although teachers are not expected to curb this pandemic single-handedly, it is definitely a start in leading the way.

3. INCLUSIVE EDUCATION: CONTRADICTION BETWEEN POLICY AND PRACTICE?

Inclusive education represents the optimism felt in South Africa after the democratic elections in 1994 when the country moved towards the recognition of human rights, as well as the drive towards education for all (Engelbrecht and Green, 2005). Inclusive education in South Africa is, therefore, based on the provision of education to all learners, whatever their needs. It focuses on building an inclusive society where diversity is accepted, valued and optimally utilised (Landsberg, Kruger and Nel, 2005).

Change in any form is often resisted because of the accompanying natural reactions such as insecurity, fear and lack of confidence in one's own ability to make these changes successfully. Slee (2001) clearly points out that the idea of inclusive education should not be viewed as the romantic simplistic belief that is impressed on all teachers, namely that it only brings about positive reform in the education system. Thus, inclusion can be considered a "token inclusion" or a "coat of paint" (McClaren, 1995). The view of "token inclusion" can be applied in the domain of sexuality education where teachers feel that they have to transmit knowledge although key issues such as cultural differences, socio-economic needs and inequalities are not addressed. In a sense, one can even regard sexuality education as trying to empower learners, but at the same time disempowering teachers who feel uneasy with the curriculum. McClaren (1995) clearly states that South African policies are pressuring teachers into roles that may be difficult, if not impossible, because of the unrealistic expectations advocated by these policies.

One of the most disturbing aspects, nearly 16 years after the advent of democracy, is the apparent slow progress that has been made in curbing the HIV/Aids pandemic, while at the same time improving the quality of education in previously disadvantaged schools. Many factors can be regarded as contributory, of which the following as adapted from Lethoko, Heystek and Maree (2001), DoE (2001) and DoE (2002) must rank the highest:

- An inadequate culture of teaching and learning. A lack of professional work ethics among many teachers. This is supported by the fact that many teachers view any type of change as a threat.
- Ratios of teachers to learners are not conducive to effective learning and probably not to inclusive education.
- The large percentage of teachers teaching sexuality education who are not qualified to do so.
- Teacher morale is at a low. This is attributed to the low status of teaching in South Africa, inadequate salaries and a change overload due to a stream of new policies.
- Haphazard and often uncoordinated implementation of sexuality education.

The Department of Education in its *Guidelines for the Implementation of Inclusive Education* (DoE, 2002) envisaged that support regarding barriers to learning will be provided based on the intensity of support needed. The overwhelming majority of HIV-positive learners in South Africa can be found in ordinary secondary schools

with hopefully a developing inclusive ethos. The education support services provided in these secondary schools are usually of very low intensity, as district-based support teams focus predominantly on primary schools where intervention is most likely to have a positive effect. The bulk of support will, therefore, have to be provided by teachers in front of these inclusive classrooms, facing an average number of 35 learners per class. A crisis awaits the sexuality educator because there is too few education support service staff. One of the most problematic issues in South African education support services is the absence of provision of one support teacher per school who can focus all support efforts. The White Paper 6 (DoE, 2001) envisaged that this would be investigated, but as yet nothing has materialised in this regard.

The role of the teacher in curbing the HIV/Aids pandemic seems critical for the success of school-based programmes, but a teacher should be regarded not only as a teacher, but also as part of a family, a community and society. Therefore, the role that society plays in the attitudes of teachers cannot be discarded. Current policies on inclusive education promise transformation while they are in fact specifying attitudes, knowledge and practices that are foreign to many teachers, resulting in failed outcomes. As Mattson and Harley (2001: 313) so bluntly state: "permitting the subject to mimic alien form of autonomy, but not actually to exercise her own".

4. Challenges faced by sexuality educators

Perceptions and history of teachers

Rural teachers are generally suspicious of the democratic and politically radical values that have accompanied the collapse of apartheid and the start of modernity (Mattson and Harley, 2001). Schools and teachers are often regarded as "caught between two irreconcilable forces which clash and conflict with each other" (Mattson and Harley, 2001: 305). According to these authors, policy assumes that what is anticipated already exists and fails to recognise that the shift and transformation imply disengagement from the past. Therefore, new practices are not always welcomed with open arms. Hay, Smit and Paulsen (2001) found that most teachers share the belief that learners need to fit into the school, rather than the school transforming in order to accommodate them. One can conclude that teachers often feel that they are not the ones to change, but that learners need to change in order to fit in. For those teachers who do not embrace transformative policies and changes, submission to the expectations may be dutiful at best.

Stigmatisation and discrimination

Stigma has been described as an attitude that is deeply discrediting and used to set the targeted person groups apart from the norm (Goffman, 1963). Goffman writes that the stigmatised individual is a person with a "spoilt identity" who is "rendered unworthy" by others (128). The HIV/Aids pandemic is viewed as the ultimate challenge for sexuality education, as it probably represents the utmost form of a feared and perceived infectious killer. Parents, learners and teachers fear being infected, and

this fear is often fuelled by irrational thoughts. Is it not easier then to turn our backs on reality and pretend that it is not a reality in our lives? It is a known fact that HIV-positive individuals are confronted with stigmatisation and discrimination. Many people are of the opinion that these individuals are responsible for their own pain and suffering. Although knowledge regarding the issue of HIV is widely published, most people still choose to avoid infected individuals.

The affected or infected individual's fear to be stigmatised is a reality in today's classroom. This fear is not unfounded. The majority of the 15 educators who were interviewed in the study of Beyers (2005) acknowledged that they find it difficult to fully accept someone with HIV-positive status. As far as possible, teachers would refrain from having physical contact with such a learner as stressed by the following responses:

> … we'll be open, but not welcoming.
> I feel pity for them […] though I secretly fear to come into contact with them.

Since inclusive education builds on the notion of being an open, accepting and welcoming space where learners are not only assimilated, but also included, such stigmatisation represents the biggest challenge for inclusive classrooms. Beyers' (2005) research clearly indicates that classrooms in South Africa may be open, but still not welcoming to and fully inclusive of the HIV-positive adolescent. Teachers have a long way to go to welcome the HIV-positive learner unconditionally – and the same applies to the learner's peers.

Personal values and needs of the sexuality educator

Aggleton, Ball and Mane (Francis, in press) argue that a narrow focus on issues such as sexual health does not meet the needs of learners. These authors support a more inclusive approach to address the emotional, social and mental needs of youth. One can conclude that the needs of all role-players must be taken into account, implying that the teachers also enter the classroom with attitudes, perceptions and needs of their own. The challenges and demands faced by teachers teaching sexuality education in an inclusive setting can perhaps be best described in the following ways:

▪ Although research (HESA, 2008) clearly suggests that every learner is unique, teachers still often approach learners in mainstream schools as having identical educational needs and expectations. Effective teachers need to evaluate learners in such a way that their unique abilities, limitations and barriers to learning are addressed adequately to avoid treating all in the same manner.

▪ In addition, certain values are expected from teachers. They must be able to accommodate and understand and they must have empathy and sympathy. But are these expectations valid? Teachers bring their own lives, values and beliefs into the classroom – and research has shown that many teachers experience a large measure of ambiguity regarding HIV/Aids. It is clear that they realise, on a cognitive level, that they should support and nurture the HIV-positive learner, yet on an emotional level, they stay somewhat aloof. This is probably linked to the fear of contracting HIV/Aids.

- Many teachers are trained to teach life skills, but some still feel that it is not the responsibility of the school to educate learners regarding sexual issues. Issues in World Health (2001) postulates that of 277 school principals interviewed, 60% acknowledged that their learners were at moderate to high risk of contracting HIV/Aids. Despite this fact, only 18% offered a full sexuality education programme.

- HIV/Aids affects teachers directly and, although they are regarded as instruments to convey messages regarding HIV/Aids, they themselves could be staggering under the impact of the disease. As a result, their role in curbing the pandemic may decrease.

- Despite the fact that infected and affected learners experience various attitudinal prejudices from not only peers, but also the school and society in general, teachers are still challenged to create an inclusive classroom. In a survey conducted for the HIV Pilot Module Project initiated by HEAIDS, interviews with teachers revealed that the majority of them do not feel comfortable with the topic. One participant stated that she does not feel comfortable with the teaching of sexuality education as "I am someone who doesn't stand for bad things". Yuker (1988) attempted to typify these social barriers as *guilt by association* where the teachers as well as "normal" learners fear that social association with a learner with a barrier to learning such as HIV/Aids may be conceived by others as a sign of some personal maladjustment, which may lead to social ostracism.

- Teachers very often do not have a wider understanding of the pandemic, and need to understand their own perceptions, values and attitudes before they will be able to support HIV-positive learners. Surveys indicate that many teachers have a positive attitude towards inclusion, recognising that inclusion enhances social skills, learning skills and the autonomy of students with disabilities (Cornoldi, Terreni, Scruggs and Mastropieri, 1998). However, teachers expressed concerns regarding the lack of training to effectively teach students who are experiencing barriers in their classroom. Moreover, a study by Bruneau-Balderrama (1997) found that some teachers were personally supportive of inclusion but the majority of them were of the opinion that it was being forced on them, and expressed concern about a lack of training.

Disclosure

The issue of disclosure can be highly challenging to (and demanding on) teachers. Legislation makes provision for learners not to disclose their HIV status. However, this causes a dilemma, because to gain support and help, one's status needs to be disclosed. If a teacher knows the status of a learner, the question arises whether the teacher should respect confidentiality, or share the information with other teachers in order to create a larger support network. Some learners choose not to disclose their status due to a fear of judgment. If learners do not reveal their HIV status, the teacher will have to be aware of any emotional and behavioural changes in them. This may be confusing and energy-consuming, as behaviour changes may be related to many incidents. This can create enormous stress and may affect communication between people, causing a weakened support network.

Health factors

Learners who are infected suffer from fatigue and fever (Evian, 2000), which certainly leads to loss of concentration and application. These learners show developmental deterioration and ill-health. Due to a vulnerable immune system, they may present with an increased frequency of being infected with other childhood diseases. Teachers are facing the dilemma of how far to push learners who are ill. Learners are expected to do their work and behave, but, at the same time, they cannot be treated as if they are living a normal life. In addition, the content being taught in the sexuality education class must be taught sympathetically, taking into account learners who may be HIV positive or affected by HIV/AIDS. Inclusive education aims mainly to provide quality education for all within a non-discriminatory environment. This is already a tough task with learners experiencing individual barriers (traditional medical special needs) included in the class, but with all the contextual and social needs brought into the classroom by "non-traditional" special needs such as HIV/AIDS, this task becomes even more demanding. There is the danger that the emotional and social consequences of HIV/Aids may usurp more and more time and energy of teachers and learners (Beyers and Hay, 2007: 387-399). Unfortunately, these consequences cannot be ignored in an inclusive classroom situation, as learners (and teachers) are closely involved with peers who are infected.

According to the categories of barriers, as stated by Donald, Lazarus and Lolwana (2007), HIV/Aids could be regarded as a social barrier that involves social and emotional contributing factors. Until fairly recently, the issue of HIV/Aids was considered a health issue, but the statistics of HIV prevalence among adolescents have shifted the focus to sexuality education in schools. However, the primary goal of sexuality education should not be viewed as the eradication of a disease, but as social change. School-based sexuality education is viewed as major strategy for increasing adolescents' HIV-related knowledge and prevention behaviours.

Conflict

Mattson and Harley (2001) are of the opinion that, although policy requirements assume that cultural differences can be worked out with some tolerance and reasoning, teachers in traditional schools would avoid conflict at all costs rather than participate in controversial issues such as sexuality education. Many beginner teachers start off with the idea of changing the lives of learners, only to fall into the trap of experienced teachers who hold the view that one "doesn't fix something that is not broken". In order to "fit in" and be taken seriously, these teachers quickly discard their own ideas in order to be accepted by the rest of the staff. In addition, teachers are often afraid to raise the issue of sex with learners because they experience a lack of skills and knowledge to tackle this task. Chomsky (2003) elaborates by explaining that, when teachers bring about social change, conflict will usually be experienced, as people who want to bring about social change are often marginalised or silenced. This introduces new demands on skills: teachers will be expected to have conflict management skills because confronting sexuality issues could lead to potential explosive situations. In addition, many teachers may feel

uncomfortable discussing certain issues such as safe sex and homosexuality (Peltzer and Promtussananon, 2003).

5. Challenging the teacher's perceptions and behaviour

Hamachek (1995: 199) defines perception as the way in which individuals experience stimuli by the sensory receptors. What is experienced consciously is not always the same as what is experienced auditory, visually or tactically. People's perceptions are affected by the way in which they view the world around them. Therefore, individuals' interpretations of sensory stimuli will be affected by their own views.

Perceptions are mental frames of references that can be based on either founded or unfounded "realities", a real or imagined state of affairs. In the case of HIV/Aids, teachers come to school with their own attitudes, values and beliefs. Therefore, the support provided by teachers and peer group members will not be a simple, straightforward issue.

The question may be asked rightfully whether teachers are ready for the changes that await them. While much research is focused on changing the behaviour of learners, very little is said about the individual responsible for bringing about these changes. Teachers in general are not keen on changing their own perceptions and behaviour.

As mentioned earlier, teachers who are either affected or infected by HIV/Aids can be influenced on a personal and a professional level. At a personal level, teachers tend to report mood disturbances and sadness (Theron, 2005). These mood disturbances could include anxiety, depression and anger, and could fluctuate. These educators often feel isolated, leading to the conclusion that, if they cannot cope on a personal level, they will find it difficult to help and support learners on a professional level. Anger, on the other hand, is often part of the emotional mixture of the HIV-positive adolescent, which makes it difficult for the teacher to accept him/her unconditionally. In addition, teachers may have to spend energy in consistently educating and monitoring peer group behaviour towards the HIV-positive learner(s).

When teachers have negative feelings regarding the teaching of sexuality education, it can influence their functioning on a professional level. Teachers who are affected by the HIV/Aids pandemic reported deteriorating morale and a decrease in motivation (Theron, 2005) which could increase their levels of stress. They are also reported to feel uncomfortable with the newly-found responsibilities and the content they have to teach. Coombe (2003) adds that some teachers feel that they do not have the necessary knowledge, training and support for this task. The parents' point of view could further add to the negative feelings that a teacher may already experience regarding the teaching of sexuality education. Teachers have to endure the criticism from parents who, as soon as they talk about sex, mention that teachers are the source of bad behaviour.

According to a study done by Darling-Hammond, Chung and Frelow (2002), teachers who felt prepared and who had confidence in their ability to teach in changing conditions, were more likely to successfully address issues such as sexuality education

in a classroom. Those who felt under-prepared were significantly more likely to feel uncertain about their teaching methods and approaches. From this it can be deduced that a positive attitude regarding sexuality education is of extreme importance.

Social engineering

According to McNamara (1978) social engineeringrefers to efforts to influence popular attitudes, social behaviours and resource management on a large scale. Thus, the school society can no longer rely on outmoded methods of social management. With regard to sexuality education, especially when considering the high prevalence of HIV infection among adolescents, the onus lies with sexuality educators to have knowledge of the most worthwhile techniques that can be applied successfully in a classroom. Most teachers still rely primarily on traditional teacher-centred instructional methods and, in addition, feel uncomfortable and ineffective when using peer leaders and role plays (Peltzer and Promtussananon, 2003). Teachers as social engineers must have reliable information to choose the best methods of addressing the issue of sexuality education. The implication is that teachers must have the necessary knowledge regarding the culture and needs of the learners in an inclusive classroom situation. They must be aware of what is considered acceptable by the community and society. Collaboration with parents becomes an essential and integral part of sexuality education. At the same time, teachers must acquaint themselves with modern technology and media that can be applied to carry out their duties as sexuality educators in order to change personal values and private relationships.

The question now arises: Are teachers ready for transition in order to establish change in behaviour, and is the transmission of knowledge seen as equal to transition? Have we become so blunt regarding these issues that we go beyond the point of really caring?

Teachers can be experienced as positive individuals who seem ready for change, but the reality is that practice remains largely unchanged. A study by Vayrynen (2003: 6) found that, even though teachers seem eager to participate in a changing environment, the transformation "seemed to stagnate at a certain point: the rigidity of teaching/learning practices".

It is important to bear in mind that many teachers are currently heirs to the inequalities of the past, but they are also shaped and socialised by the culture in which they grew up. Traditionally, sexual practices were discussed with the youth only by older men and women in a community, but the main source of information nowadays comes from the peer group (Wood, 2008). This is voiced by Engelbrecht and Green (2005) who state that it is important to note how attitudes, values, etc., concerning the nature of the world have been shaped by the prevailing social contexts and debates that are part of the social context in which individuals have found themselves and the way in which individuals, in turn, have shaped the social context.

For effective social engineering to take place (Forrest and Kanabus, 2009; AVERT, 2010), it is proposed that sexuality education should include the following elements:

- Focusing on reducing risky behaviours.
- Theoretical knowledge to explain the influences on people's sexual choices and behaviour.
- Clear and continuously reinforced messages about sexual behaviour and risk reduction.
- Providing accurate information about the risks associated with sexual activity, about contraception and birth control, and about methods of avoiding or deferring intercourse.
- Dealing with peer pressure, as well as social pressures on young people, providing opportunities to practise communication, negotiation and assertion skills.
- Using a variety of teaching methods in order to engage and involve learners and to help them to personalise the information.
- Taking into consideration the age, experience and cultural background of learners and using approaches that are appropriate for their needs.
- Providing sexuality education by teachers who believe in what they are saying and have access to support in the form of training or consultation with other sex educators.
- The voices of young people and children are often not heard. Teachers should collaborate and give them freedom to participate on their own terms (UNAIDS, 1998).
- More visual programmes, e.g. videos, photographs and contact with infected people, should be used in the classroom.
- Teachers should try working with small groups as certain skills, values and attitudes will be easier to transfer.
- It is important to provide accurate and scientific information to learners and teachers alike, teach age-appropriate content and develop life skills and basic first-aid principles.
- Sexuality educators should be able to ascertain what learners already know and then add to their existing knowledge, correcting any misinformation they may have. This implies open communication between teachers and learners. Sexuality teachers are expected to address issues which they themselves find personal and private. In addition, the teachers' own sexuality is placed in the spotlight when they have to discuss this sensitive topic. The author is also of the opinion that even more stress is experienced if teachers do not have an inclusive approach to teaching and learning in cases where parents form part of the decision-making process in the school or classroom. Kelly (2000) states that teachers could anticipate negative feedback from parents as they may see the teacher as being the proclaimer of immorality.

6. Conclusion

It is suspected that the demands on teachers standing in front of inclusive classrooms, especially those who are teaching sexuality education in South Africa, will be too

great to address effectively. Apart from cultural differences that often hinder the teaching of sexuality education, some teachers are of the opinion that it is not the task of the school to teach sexual issues to learners. HIV-positive learners will certainly be present in numbers ranging from a few (in primary school classes) to between 16.8% and 25% (in secondary schools) in inclusive classrooms (UNAIDS, 2004), but will in all probability not receive the intensity of support that is essential. This will apply even more to cases where the educator is not equipped to teach sexuality education or is also affected by HIV/Aids.

The successful implementation of sexuality education in South Africa is in jeopardy due to the added demands on educators of the HIV/Aids pandemic. The HIV/Aids policy is fragmented, and curriculum reform can work only if educators have been trained in the new learning area of Life Orientation. Few South African teachers have a formal qualification in the teaching of Life Orientation, but they are often expected to teach skills in this field. Sexuality education educators will never be viewed as agents of social change if drastic measures, including social engineering and competent teachers making a mind shift, are not applied. Kelly (2002), however, offers hope to all teachers on the premise that education is a powerful tool that reaches the majority of learners when they are still at a receptive age in order to transform them to take action and ownership of their sexual relationships.

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Chapter 14

School management, learners at risk and HIV and AIDS in South Africa

Fumane Khanare
University of KwaZulu-Natal
khanare@ukzn.ac.za

1. Introduction

This is an interpretive study to explore how School Management Teams (hereafter SMTs) respond to learners who are orphaned and vulnerable, particularly in the context of HIV and AIDS. It examines how SMTs draw on their available assets such as teachers, learners, and community members to care for and support children who are orphaned and vulnerable. In other words, it explores how SMTs interact with learners and the community to contribute to changing the unfavourable conditions of these learners. By drawing on these resources the SMTs might be able to respond adequately to changing the conditions of orphaned and vulnerable children. Focus group interviews were used to access participants' understanding and experiences of orphaned and vulnerable children in their school contexts. Within the focus group sessions, participatory techniques were used as a means of drawing out insights into the perceptions and attitudes of people in group interactions. It was found that SMTs rely overwhelmingly on external assistance whereas vulnerability and orphanage can be better addressed internally, that is using teachers, learners and community members.

The AIDS epidemic has created over 41 million people living with HIV. Sub-Saharan Africa remains by far the worst affected region with 25.4 million people living with HIV (Smith, 2006). According to Smith (2006), 3.1 million people worldwide died of AIDS-related illnesses in 2004. As the number of people dying from HIV and AIDS increases, so too does the number of children orphaned by the pandemic. It is estimated that every day 1 600 children die of AIDS and 12 million children thus far have been orphaned by HIV and AIDS in sub-Saharan Africa alone (SABCOHA, 2007). UNICEF estimates that in Southern Africa, this number is expected to reach 20 million by 2015 (UNICEF, 2006a). In the context of the HIV and AIDS pandemic, the rising number of orphaned children and child-headed households is becoming a challenge, with far-reaching implications for many countries. In South Africa, the onslaught of HIV continues to hit hard. A report by SABCOHA (2007) indicates that South Africa continues to be severely impacted by the HIV and AIDS pandemic, with a recent estimate of 5.5 million people living with HIV and AIDS (UNAIDS & WHO, 2006). In addition, it is estimated that by 2010 South Africa will have two million orphans, and roughly 15% of all children under the age of 15 years are expected to be orphaned in 2015 (Skinner and Davids, 2005). It is recognised that the responsibility

of caring for orphaned children is a major factor in pushing many extended families beyond their ability to cope.

Orphanhood is part of all communities, as there will always be children who have the misfortune of losing parents (Barnett & Whiteside, 2002). It is noted that children do not only grieve for the loss of their parent(s), but the majority of them also appear to be vulnerable due to poverty and lack of access to shelter and education (Skinner, Tsheko, Mtero-Munyati, Segwabe, Chibatamoto, Chandiwana, Nkomo, Tlou and Chitiyo, 2004). In addition, as the illness of a parent reduces his/her capacity for providing care, children who live in households in which one person or more is ill continue to look after them. Overall, orphanhood and poverty can hinder educational attainment (Operario, Cluver, Rees, MacPhail and Pettifor, 2008).

In many countries different stakeholders (families, relatives, community, institutions) routinely took in children, playing their role in the upbringing of orphaned children. However, due to HIV and AIDS, this supportive network has rapidly been eroded. The breakdown of traditional/informal systems of care and support is evidenced by a growing number of street children in developing countries (Barnett and Whiteside, 2002).

A general policy thrust shared by many countries was that of HIV and AIDS awareness and the medical aspect of preventing the spread of HIV and AIDS. However, the rapid spread of HIV and AIDS in many countries has a lasting effect on young children. For example, learners who are orphaned and vulnerable experience psychological and social challenges which could affect their learning process in schools (Ebersohn and Eloff, 2006a; Giese, Meintjes, Croke and Chamberlain, 2003; Kamper, 2008; Van Vollenhoven, 2003; Van Wyk and Lemmer, 2007). Orphaned and vulnerable learners are affected by the conditions under which they are educated. Bower (2003) indicates that living in deep poverty and with death, social instability and lack of action increase the vulnerability of children to abuse and neglect. Violence, forced prostitution, incest, rape and stigma, resulting in a negative sense of self-worth, puts learners, especially girls, at high risk (Ewing, 2003; Motala and Smith, 2003). The complexity of these issues makes it difficult for schools to effectively provide support to learners.

The International Convention on the Rights of the Child, to which South Africa subscribed in 1995, recognises that every child has the inherent right to life, with Article 3 referring to "the best interests of the child" being a primary consideration in matters concerning children (UN, 2001).

Following the institution of the Bill of Rights, the Southern African Developing Countries (SADC) HIV and AIDS Strategic Framework 2003-2007 (SADC Human Resource Development Sector, 2003) clearly articulated the guiding principles i response to HIV and AIDS-related issues, specifically referring to orphaned and vulnerable children:

- the multi-dimensional and multi-sectoral response to HIV and AIDS;
- care and support of children orphaned and vulnerable, and
- mobilisation and coordination of resources.

This clearly implies that schools should also develop effective and relevant policies and programmes based on active collaboration with partners at national and regional level (SADC Human Resource Development Sector, 2003). This position will enhance the capacities of schools within their social context which, in turn, may support the contribution to sustainable development of the continent (Gardiner, 2007).

In South Africa, education policies have been promulgated to support all learners. The National Policy for Educators and Learners Affected and Infected by HIV and AIDS (DoE, 2001a) clearly advocates schools to be truly safe and conducive for *all* learners to learn. In addition, sections 12 and 14.3 of the same policy suggest the incorporation of all stakeholders in the school to draw on expertise within and among themselves to supplement resources supplied by the state (DoE, 2001a). On the same note, the HIV and AIDS Emergency Guidelines for Educators (DoE, 2000b) require educators to create an enabling environment and re-culture their schools to ensure that orphaned and vulnerable learners are protected.

The Department of Health and the Department of Education are attempting to assist schools in terms of implementing policies. However, Gardiner (2007) contends that these attempts have yielded little social impact on basic intervention at regional and community levels. Educators and school officials share the belief that Life Orientation (hereafter LO) educators play an important role in implementing HIV and AIDS policies (Maharaj, 2006). To make these policies effective, educators attend workshops and develop school HIV and AIDS policies. While the same authors agree on some attempts being made, they emphasise that these policies often do not address the social welfare support for learners who are orphaned and vulnerable. The schools' ability to mobilise resources and to provide care and support to orphaned and vulnerable learners is left to the school management.

This study therefore seeks to explore School Management Teams' (hereafter SMTs) response to learners who are orphaned and vulnerable within the context of HIV and AIDS. It also attempts to gain an understanding of how SMTs draw on teachers, learners and community members to respond to caring and supporting orphaned and vulnerable learners. It will also explore the methods the SMTs employ and the manner in which their work influences the entire school's way of responding to these learners. Lack of involvement of teachers, students and community is often linked to leadership and attitude of SMTs (Botha, 2006; Kamper, 2008). The position of SMTs in the school, in particular that of the principal, can be a link between the school and its context, for example, the community, health services, non-government organisations and civil organisation (Botha, 2006; Kamper, 2008; Van Vollenhoven, 2003). The school is a place where learners spend many years as members of a small society which exerts a tremendous influence on their holistic development. This could be more so for children who are orphaned and vulnerable. Ebersohn and Eloff (2006), Giese *et al*. (2003) and Kamper (2008) refer to a school as a node of care and support for vulnerable children. This view, according to Bredekamp and Copple (1997), regards learners as developing best in the context of a community where they are safe and valued, their physical needs are met, and they feel psychologically secure.

2. Problem statement and aim of the study

The apparent prevalence of orphaned and vulnerable learners has been highlighted at the beginning of this chapter. However well-intended, policy-oriented responses have not yet engendered adequate results (Ferreira, 2006; Gardiner, 2007). The question one may ask is whether or not the schools where learners spend most of their time are indeed supporting and caring for the children, that is, whether policy is being implemented. Another concern is the availability of initiatives by the School Management Team to respond to orphaned and vulnerable learners in their school context.

In this regard, the motivation to explore how the issue of orphaned and vulnerable learners is addressed in the school context stems from the fact that research on care and support often tends to focus on communities being supported by external donors, thereby limiting the capacities of the community to identify their own assets and resources to respond to issues of orphaned and vulnerable learners (Ebersohn and Eloff, 2006a; Ferreira, 2006). Therefore, it was decided to focus on and deepen an understanding of how the SMTs from a rural area in South Africa respond to issues of orphaned and vulnerable learners by drawing on resources available to the school.

It is in view of the above that this study explores SMTs' response to learners who are orphaned and vulnerable in the context of HIV and AIDS, with specific reference to those in rural senior secondary schools.

Research question

The study seeks to answer the following questions: How do the SMTs respond to learners who are orphaned and vulnerable in the context of HIV and AIDS? What available resources do the SMT members draw upon to respond to learners who are orphaned and vulnerable in the context of HIV and AIDS?

3. Research methodology

This study adopts a qualitative and interpretive approach to explore how SMTs respond to challenges facing learners who are orphaned and vulnerable in the context of HIV and AIDS. Maree (2007) postulates that a qualitative mode of inquiry assists in understanding the social and cultural context in different ways. The researcher wishes to understand how SMTs respond to learners who are orphaned and made vulnerable by HIV and AIDS. A phenomenological approach was used to gain in-depth insight into the SMTs' responses. The decision to utilise this particular research design was, among other pertinent considerations, based on the following reasons:

- A qualitative approach allows the researcher to understand a particular social situation or event by means of ongoing interaction. Creswell (1994) suggests that this entails immersion in the everyday life of the setting. The data that emerge from a qualitative study are descriptive, that is, data are reported in words or pictures rather than in numbers. A qualitative researcher gathers detailed information by means of multiple, usually interactive methods (Conrad and Serlin, 2006). The focus is therefore to understand how things occur, that is how

     SMTs respond to issues of learners orphaned and made vulnerable by HIV and AIDS in their school context.

- An interpretive paradigm is primarily directed towards understanding – gaining meaning and understanding of individuals in terms of their own interpretation (Babbie and Mouton, 2001). The emphasis is on interpretive understanding (*Verstehen*) rather than explanation in terms of universally valid laws (Babbie, 2004). In other words, meanings and interpretation are negotiated with human data sources. In this study, the focus is on understanding how SMTs respond to issues of learners orphaned and made vulnerable by HIV and AIDS.

- De Vos, Strydom, Fouche and Delport (2005: 270) describe phenomenology as a "study that attempts to understand people's perception, perspectives and understanding of a particular situation […it] allows the participants to reconstruct the details of their experiences within the context in which it occurs." In other words, a phenomenological approach offers a descriptive, reflective and engagement mode of inquiry from which to derive the essence of experience. Cohen, Manion and Morrison (2000) assert that a phenomenological study requires people to look beyond the details of everyday life phenomena to the essence underlying them.

Leadership and management have been highlighted in the policy and professional development literature. A phenomenological approach allows one to understand leaders outside the confines of the theoretical construct and overarching framework (Ehrich, 2003; Giorgi, 1985). In this study, a phenomenological approach is used to allow the principal and heads of departments' (SMT's) experiences of managing children who are orphaned and made vulnerable by HIV and AIDS, to speak for themselves.

Sample size

Selection of participants was intentionally limited to the SMT members from two senior secondary schools in the rural area of KwaZulu-Natal. Principals and school management teams are faced with a task of providing quality education to increasingly ill and disrupted learners and AIDS orphans. The data of this study are derived from members of the SMTs from two rural schools in KwaZulu-Natal: the principal, the deputy principal and heads of departments, of whom three were also Life Orientation educators. These participants were purposively sampled in order to acquire in-depth responses regarding their leadership role of responding to issues of OVC in their school context.

This sampling strategy is deemed suitable by De Vos *et al*. (2007) and, according to Maree (2007), purposive sampling allows for the desired group as key informants to provide rich and in-depth information.

4. Focus group interviews

The first focus group interviews took place at the individual schools, exploring the SMT's response to OVC. Focus group interviews direct discussion among a group of people, fewer than 12, with the purpose of collecting in-depth qualitative data about a group perception, attitudes and experiences on a defined topic (Maree, 2007). In

addition, as Maree (2007) indicates, the goal was to encourage full participation and interaction among members and to probe for clarity of aspects. A focus group interview guide was utilised for the SMTs at the two schools. The guiding questions were aimed at eliciting information about:

- the prevalence of OVC in their school contexts;
- the realities of OVC and school communities;
- their leadership role in responding to issues of OVC in their school, the dynamics of successful responses to OVC, why and how the SMTs address the issue, and the actual challenges raised by HIV and AIDS-related issues including orphanhood and vulnerability in the school context, and
- knowledge on the part of the SMTs regarding the application of appropriate legislation and policies when dealing with issues relating to OVC in the context of HIV and AIDS.

This logical interview guide served as a framework for the focus group discussion. The first question was to put the participants at ease, followed by the main research focus group interview questions. The ending session in a focus group, as Maree (2007) postulates, is a more general wrap-up where the researcher summarises the prominent points that emerged from the interaction and verifies his/her understanding of these points.

Though the interview guide was specific, the open-ended questions allowed participants to raise issues pertinent to their way of responding to OVC. In addition, the focus group interview provided valuable information on how they talk about a topic and how they respond in a situation where they are exposed to the views and experiences of others (Maree, 2007). As a result, the SMTs could respond to the questions in terms of what they saw as significant. The interviews, lasting 90 minutes, were audio-taped and transcribed.

5. Arts-based focus group interview 'collage'

According to Maree (2007), a focus group interview encourages debate and even conflict, and group dynamics assists in data generation. Participants engage in a discussion with each other rather than directing their comments solely to the researcher. De Vos *et al*. (2007) also noted that, in focus group interviews, participants are able to build on each other's ideas and comments to provide in-depth information not attainable from an individual interview. In this study, to complement the first focus group interview conducted with both SMTs at their respective schools, the second phase of the data collection involved bringing together the SMTs from the two schools in a neutral place. To answer the research question "What available resources do SMTs draw on to respond to OVC in the context of HIV and AIDS?" participants had to make a collage.

Collage is a formal work of art that involves creating a work from pictures; this may also include words and photographs. By cutting pictures and words out of magazines, the SMT members illustrated what available resources could be mobilised in order

to respond to issues of OVC. The nature of the collage activity itself presented a challenge to SMT members. Therefore, before the activity began, the process was explained to them and a ready-made example of a collage was provided.

▪ The process consisted of the following elements:

▪ Getting together and introduction (name tags were given);

▪ Explaining the purpose of the gathering;

▪ Signing consent forms to participate in the study;

▪ Prompting the participants through reading two case studies and showing them some statistics from the research on the issues of OVC by Cluver, Gardner and Operiori (2007); Van Wyk and Lemmer (2007) and UNAIDS (2000); and asking the following questions: "Do you agree with these case studies and the statistics? Is this a reality in your school?" "In trying to address issues of OVC in your schools, what available resources do you draw on? Make a collage to represent your responses";

▪ Cutting, writing and discussing;

▪ Wrapping up by talking about their collage, and

▪ Audio- and videotaping the process.

During the collage and throughout the discussion the participants were asked to be precise and practical as to how they thought they would respond to the issues of OVC in their school context. In other words, the choice of which pictures/words to put into the collage was not just a 'cut and paste' work; what is considered to be helpful resources in trying to respond to challenges facing the schools in relation to OVC had to be relevant.

The original time allocation of three hours for the entire session and one hour to create the collage proved to be inadequate for the SMTs. They did not go straight into making a collage, but were engaged in thinking, sharing ideas, suggesting, questioning and explaining to each other about the choice of pictures and words they wanted to put into the collage. The exercise therefore provided an opportunity for the participants to share directly their reality and capture it visually (Creswell, 1994).

The phenomenon of OVC and its manifestation represented a mutual concern. Bringing the SMTs from the two schools together assisted in creating a companionable experience and enabled SMT members to share information and give advice and a new hope to work collaboratively to respond to learners orphaned and made vulnerable by HIV and AIDS.

In order to capture the data during creation of the collage, the participants were reassured that the audio taped information would be used for research purposes only and that their anonymity and confidentiality would be guaranteed. Audio recordings provide detailed recorded talk and direction when listening and transcribing, which field notes alone cannot provide (Henning *et al.*, 2004).

6. Findings and discussion

The essence of the SMTs' responses is described in specific themes as they emerged from the analysis of the transcribed data. The findings are presented with direct quotations from the participants, and are integrated with literature and contextualised within Southern Africa. An attempt will be made to first discuss the three themes which emerged from the inductive data analysis of the SMTs focus group interviews at their respective schools. Secondly, the asset-map of the assets which emerged when the two SMTs in their shared arts-based focus group responded to the second research question will be discussed.

Underestimating their own individual contribution

Upon examining the responses, it was apparent that the care and support activities that dominate at school level had been socialised into a 'culture' and system of 'ubuntu'. In this regard, several participants were able to provide adequate explanations of the kind of care and support they provided for OVC. Such reality is likely to continue; yet it is important to note that SMT members found it difficult to realise the value and impact of their own efforts. The form of care and support by the SMT members seemed to flow from their culture of 'ubuntu', as was expressed by a participant:

> sometimes when I am eating, maybe I will eat half and then leave for the boy in grade 12, because I've been to his home at one stage and I know the situation …. Some teachers buy them uniform, some of the teachers will even go as far as even paying the school fees.

Therefore the tendency to share what one has appeared to be inextricably linked to a cultural and societal custom entrenched in the southern African context. Ansell and Young (2004) indicate that most southern African orphans are cared for by extended families. However, due to the growing number of OVC as a result of HIV and AIDS, the responsibility of caring for the children pushes many extended families beyond their ability to cope financially. Schools are places where all children should be protected and nurtured. Schools now fulfil the children's basic needs.

The concept "health-promoting school" presents new views about schools and confirms the notion that schools should function as centres of care and support for all learners including learners orphaned and made vulnerable due to HIV and AIDS (DoE, 2001b; Ebersohn and Eloff, 2006a; Sayson and Meya, 2001). Anecdotal records (DoE, 1996 and 2000a; UNESCO, 2006b) of the school as the locus for care and support of OVC emphasise the need for identification and mobilisation of assets in the school in a systematic way, rather than merely as individual responses.

Uncoordinated efforts

School Management Team (SMT) members are aware of the challenges of OVC in their school context as has been indicated by their individual approach in response to the issues of orphaned and vulnerable learners. However, they also identify a lack of collaboration as a school community and as such do not seem to optimally respond to the issues of these learners. This is in contrast to one of the five critical

priorities for the school, whereby the school community is expected to work together and manage a coherent response to ensure quality education for *all* learners (DoE, 1996). The participants expressed a need to have a plan which transcends the school management and structures which they view would increase their responses to OVC. This is highlighted in a participant's response:

> There is no plan of some sort to address the issue of orphaned and vulnerable learners.

The participants in this study clearly noted that in order to effectively deal with OVC in the school, planning must happen at school/SMT level. The SMTs need to have a clear vision (DoE, 1996). Schools which are successful in providing a healthy environment are clear about what they themselves stand for, what their critical issues are and the directions they wish to take. They then can shape appropriate activities to achieve their goal (Rayners, 2007).

The DoE (2003) insists that each school should develop a vision to respond adequately to issues of learners including those orphaned and made vulnerable by HIV and AIDS. According to the World Bank (2002), enhanced leadership capacity is required to respond to OVC. One of the important roles of the SMTs is to create a caring school where educators and learners feel supported and acknowledged. The DoE further states (2003: 103) that "principals and SMTs are expected to provide quality education in their school." Participants' comments about success in responding to issues of OVC provide a 'patchy' picture as they noted a lack of cooperation and coordinated activities:

> … there is no particular program, that we can say we sat down as the staff, that focuses on addressing issue of OVC.

> … as the school, there is no specific policy that we are actually following to address issues of learners orphaned and made vulnerable due to HIV and AIDS.

The schools provide a range of services, but often do so in specific ways, individually and on a relatively small scale. The Centre for AIDS Development Research and Evaluation (CADRE) (2005) argues that if their actions were coordinated and linked, they could provide a comprehensive and multi-sectoral OVC programme with a robust school community. There is a serious need to coordinate the development of initiatives to create services which are integrated.

All the participants in the study agree that a healthy response to OVC requires a unique programme which is socially organised, such that the school can develop the capacity among all its stakeholders to be able to respond to issues of OVC, also defining roles and responsibilities of the SMTs, other educators and learners. Within the school environment, any programme requires a set of clear goals and activities and an appropriate set of performance indicators to monitor the impact of the various initiatives (UNESCO, 2008). The SMTs' roles, responsibilities and school ethos are important to adequately respond to OVC. In addition, policies and legislation (DoE, 2001a and 2003) imply a profound change in culture and practice of schools in relation to OVC. According to the participants in this study, there is a considerable lack of thorough integration of OVC planning into development plans. Since all the

participants in this study indicated the absence of substantive systems or structures at their school, the school provides only partial support for the immense challenges facing OVC in the school context.

ENGAGEMENT WITH DEPARTMENTAL POLICIES

Schools should act in the best interest of the child and ensure that *all* children access quality education to realise their full potential (DoE, 2001b; RSA, 1996). National policy on HIV and AIDS for learners and educators was promulgated in 1999 to mitigate HIV-related issues including the issues of OVC. Anecdotal records of the perceived rate of OVC due to HIV and AIDS, and a strategic framework of action were documented by Bicego, Rutstein and Johnson (2003), Boler and Carroll (2003), Case, Paxon and Ableidinger (2005), and Desmond and Gow (2002).

This study clearly reveals that these two SMTs, in relation to the national and departmental policies on HIV and AIDS, are unclear as to what the National Policy on HIV and AIDS expects them to do or not to do. One participant also declared being unaware of such policies for the school:

> … there is no specific policy that we are actually following to address issues of OVC, I am not aware of any of such policies …

The participants at both schools also stated that the Department of Education requires them to identify and compile a list of learners in need, but were uncertain for what purpose. One participant stated:

> … in the case of our school, it was last year when we were filling some forms from the department, for now it's just a matter of numbers, so nothing is being done about those children. … when I was collecting that information, I think I commented and said, this is just what the department does, they will collect information and then they will do nothing … I was worried myself, what are they going to do with that information.

This SMT member seems to believe that the department is responsible for the care and support of orphaned and vulnerable learners in the school. However, while the school is in no uncertain terms regarded as being responsible for the development and implementation of the National Policy on HIV and AIDS (DoE, 2001a), the SMT members respond in an uncoordinated way by drawing on their 'ubuntu' perspective.

Section 12.1 of the National Policy on HIV and AIDS states that the governing body of a school or the council of an institution may develop and adopt its own implementation plan for HIV and AIDS in order to give operational effect to the national policy. In the HIV Emergency Guidelines for Educators (DoE, 2000b), the Ministry of Education urges schools to become caring communities. In addition, the SMT and, in particular, the principal have the final responsibility to ensure the safety of the learners and the quality of their education (DoE, 2003). In other words, the SMTs need to be clear in their vision to build a supportive and appreciative environment. Evidence from the responses indicate that SMTs are caught up in an adhoc way of addressing HIV- and AIDS-related issues, including issues of OVC in their school context. It has become

clear that there is a need to put a school policy in place. However, little work has been done to develop feasible school policies to support OVC.

The above idea emphasises the significance of interactions between the SMT members in developing school policies, which are fundamental for addressing OVC in their school contexts. Realising the rising tide of orphaned and vulnerable learners due to AIDS, the Ministry of Education emphasised the need for collaboration, "we recognized that no one could respond to HIV and AIDS alone … the Department of Education has put together guidelines to help SGBs and SMTs to work together to respond to HIV and AIDS" (DoE, 2003: 5).

The emphasis on expanding the roles of the schools as centres of care and support for OVC requires SMT to be proactive in initiating shared experiences in the school and the development of relationships with other departments. Collaboration is a fundamental asset that could help overcome isolation and helplessness in trying to respond to issues of learners orphaned and made vulnerable by HIV and AIDS in the school context.

Haressing and mobilising resources

In response to the second research question, "What available resources do the SMT members draw upon to respond to learners who are orphaned and vulnerable in the context of HIV and AIDS", an asset-map was drawn up to show on which assets they drew to address the issues of OVC in their schools. Participants compiled a collage to illustrate the nature and extent of the challenges, resources and potential resources in the community. The participants made use of both pictures and text to express their views in the collage. This collage served to make the research process more interesting for the SMTs (Norris, Mbokazi, Rorke, Goba and Mitchell, 2007), but also elicited reflection and rich discussion. Each SMT member was encouraged to engage with and identify the resources available to the school for the care and support of OVC. Mapping activities were supported by discussing the SMTs' way of utilising assets and resources in order to respond to issues of OVC in the context of HIV and AIDS. Moreover, the focus group data allowed the participants an opportunity to hear and reflect on the views of others and "elaborate[d] on earlier comments, adding new information, giving the new experience and sometimes different interpretation" (Maree, 2007: 108).

The discussion focused mainly on the school assets, indicating the participants' understanding thereof. The SMTs' map shows various existing assets and potential assets in and around the school, upon which they might rely in responding to the challenges faced by OVC in the school context. However, they also indicated drawing on the assets of the local community and local institutions in future. One of the assets to draw on is the involvement of other learners. This shows that the SMTs identify learners as partners in support of other learners orphaned and made vulnerable due to HIV and AIDS. This will perhaps provide a glimpse into the world in which children are growing up in this specific context.

One participant wrote:

> … let learners tell their stories […] encourage learners to talk about HIV and AIDS-related issues […] my point is that we might end up with some of the learners coming out to talk about their own experiences, be helped to address problems they are facing in their families.

The SMTs agreed that learners might be valuable assets in addressing their own vulnerability. They do not mention the policy of dealing with minors or their own vulnerability. One can question what actions they would take after the learners told their stories, who exactly should the learners tell their stories to and what support will the SMTs provide to such learners. It is interesting to note that no one indicated what the National Policy on HIV and AIDS for Educators and Learners prescribes in terms of confidentiality which is in line with Section 6.4 of the National Policy on HIV and AIDS(DoE, 2001):

> … any person to whom information about the medical conditions a learner, student, educator has been divulged, must keep this information confidential.

The rights and care and support of the children are at issue in this instance. This is in line with section 3.4.3 of the Policy framework for orphans and other children made vulnerable by HIV and AIDS in South Africa which states that the school should:

> … develop and ensure that referral systems to other relevant service providers e.g. social workers, nurses, are in place.

This indicated that, although SMTs see the potential in learners for caring and supporting other learners in the school context, they could be confronted with a practical situation close to them where the rights of learners could be violated or their lives endangered. They seemed unaware of the legal issues in balancing the rights of learners.

In their collage the participants also positioned educators as the best resources available to respond to issues of OVC. In fact, educators are central pillars in any education (Buthelezi, 2004), expanding the roles of the schools to care for and support all learners. This implies sensitising educators to their roles as stated in the Norms and Standards for Educators, i.e. their pastoral role:

> … the educator will demonstrate an ability to develop a supportive and empowering environment for the learners and respond to the educational and other needs of the learners and fellow educators (DoE, 2000: 14).

Data from this study have revealed that educators have acted with compassion in trying to respond to OVC issues in the school. Bhana *et al*. (2006) concur and argue that educators in fact provide basic care for OVC but indicate that the educators often lack adequate skills to provide adequate support. In this respect, the SMTs explained that teachers need training and have peer educators:

> … we are not qualified enough, we are not competent enough to address such issues […] maybe one thing we need is to do the refresher course.

Identifying assets does not qualify as effective asset mapping, which should include empowering people and motivating people to offer their talents (Landsberg, Kruger

and Nel, 2005). The SMTs all agreed that schools need restructuring in order to provide care and support for learners, including those made vulnerable due to HIV and AIDS.

> … schools needs restructuring, refresher courses, teacher counselling, peer educators, peer learners, psychological testing to see if teachers can cope with difficult situations.

One question that was raised was "Who should organise the refresher course?" The SMTs indicated that the management must organise this.

While there is little knowledge on strategies to harness and map resources available to the school in relation to OVC, the SMTs revealed other resources in their collage upon which they can draw. In order to strengthen their capacity to deal with learners' issues, the SMTs suggested collaborating with other community organisations and government sectors. Though few pictures were used in the collage - which may indicate less exposure to a "mass media collage aesthetic" (Norris *et al*., 2007: 486), this illustration of resources was evident during their group discussion, as indicated below:

> … organize social worker to the school and help with birth certificates.
> … what we are actually saying here is that, the school should work with other government departments.

Realising that the school alone cannot be responsible for caring and supporting OVC (DoE, 2003), one large component of mapping resources is to identify sources of social support available to vulnerable children. For example, the Circles of Care project (Cook and Du Toit, 2005) emphasised the importance of connectedness, participation and strategic partnership as an effective strategy for overcoming youth challenges. It is clear that the predicament of OVC influenced the SMTs' recognition of the interplay and potential synergy that can be created across sectors as important to learners. All members agreed that schools need to be positioned at the centre of the community:

> … we need to structure our schools to be centre of community development, we need to train or help community to help themselves.

There is a widespread uncertainty about how to mobilise the resources, except in one incident where the SMT members indicated that the principal is respected and his/her position has enormous responsibility with regard to the lives of OVC. One participant said:

> … as teachers we started a drop-in-centre and asked the principal's assistance in identifying people whom we can approach.

Similarly, Rayners (2007) pointed to the leadership role of the principal in managing HIV and AIDS at school. Most participants indicated that the principals are leading educators who indeed exert a major influence on learners. Despite this view, the principals did not participate in this study, hence their voices were not heard. On the other hand, in a study conducted in Botswana (DoE, 2007) on leadership skills to manage HIV and AIDS in secondary schools, the participants were of the opinion

that both the principals and the deputy principals did not provide adequate support to HIV and AIDS-related issues due to the major challenges they already have.

These responses by the participants underscore the importance of the role of the principal in providing leadership in respect of HIV and AIDS care and support of OVC. The principal shares the power to manage the school with members of the SMT, s/he is the chair of the SMT, s/he is also an *ex officio* member of the SGB (Buthelezi, 2004), and the dual responsibility of the principal is of vital importance in mobilising and mapping resources.

However, in general, it is safe to say that all children have basic needs, and SMT members weave the strand of support together in a different pattern, and these include: stable relationships, proper nutrition, good health, positive role models and a socially constructed pathway that children need to survive and thrive in the school context.

7. Conclusions and recommendations

This study indicated that, despite the expression of commitment and despite individual SMT members' responses to addressing the needs of children orphaned and made vulnerable in the age of AIDS, the actual response has been limited, fragmented and short of what is required by the national policies to address issues of OVC. If one acknowledges that HIV and AIDS affect people and, in particular, children in different ways, schools' daily contact with children means that schools have the necessary skills and human resources to make various strategies work (Ebersohn and Eloff, 2006a; Rayners, 2007). In the long run, the position and capacities of school management play a significant role in addressing issues of OVC in the context of HIV and AIDS.

The four themes obtained from an analysis of the participants' responses involving underestimated and uncoordinated efforts, engagement with the departmental policies on HIV and AIDS-related issues and mobilisation of resources, represent prominent subsystems within an ecosystemic evaluation and description of responses to OVC within these secondary schools in South Africa. Typically, stronger links between different stakeholders would result in a pool of resources that would enable the SMTs to respond to challenges facing OVC in their schools.

The position and capacity of the SMTs has led members to re-conceptualise issues of OVC as a broader development focus. The asset-map depicts the participants' responses, based on creating networks to use available capacity more effectively. Realising the fact that the school alone cannot be responsible for care and support of OVC (DoE, 2003), the individual members of the SMTs identified available resources in the school, communities and partner sectors. A major constraint on this research was a lack of a defined expectation of what could be done and the role of the school in drawing on those resources to be utilised to respond to issues of orphaned and vulnerable learners. Moreover, it is interesting to note that very little mention was made of the Life Orientation educator as an asset. If one closely examines the Curriculum 2005, as a Revised National Curriculum, Life Orientation contributes towards the holistic development of all children (Prinsloo, 2007). Therefore, Life

Orientation educators could be important assets, through whom issues of OVC could be addressed. This again relates to the SMTs' lack of a clear vision and policy-oriented programmes with respect to these learners. Any systematic response to the issues of OVC should be manifested in policy strategies, as it will be possible to identify gaps, and mainstream responses within the entire school programme.

Just as HIV and AIDS erode the capacities of families and communities, it also leaves a considerable number of orphaned and other vulnerable children whom the school should be taking into consideration. The educational response to HIV and AIDS becomes the focal point to address the social and health issues through schools (Goldsmith, 2004). The school as an organisation needs to find innovative ways of rebuilding the circles of care for OVC (Kinghorn *et al*., 2002). Of importance in this instance is the need for the school management team to bridge the gap between policy and practice related to issues of OVC at the level of the school communities, bringing together educators and learners with other resource people to identify and address the needs of *all* learners in a coordinated and effective manner.

The relevance of the asset-based approach has been described as a "capacity focused alternative" (Ebersohn and Eloff, 2006a: 150). Each school and community has a unique combination of assets and capacities and "there is a basic truth that every individual has something to contribute, even though it may not been mobilised yet" (Ebersohn and Eloff, 2006a: 151). In this respect, issues of OVC will not be viewed as a burden for the school only, but as having the potential to create synergy in addressing issues of OVC. SMTs, therefore, play a role in realising and mobilising these resources. Their ability to forecast and plan can also inform policies and processes to respond to the learners in their schools.

McDonald (1997) highlights the creation of school communities that value all its members as problem-solvers and whose development comes from within. There are several key lines of action in response to the challenge of ensuring quality education for OVC. These should be a holistic attempt to address all aspects of the child as a learner and to realise what is best for the child in the learning situation and environment. Key actions for the development of healthy schools include the following:

- HIV and AIDS educational policies are formulated with a view to generating responses to the issues of OVC. SMTs must contextualise HIV and AIDS legislations and policies that provide them with guiding principles for their leadership in the cultural/local setting.
- Advocate for support and development of a supportive environment. In order to improve the effectiveness of an action to respond to the issues of OVC, a school environment should be supportive of all activities and programmes relating to OVC. This includes identifying a comprehensive range of services in the schools. SMTs should be viewed as part of a team with other educators and learners, so as to avoid overburdening other educators and administrators and thereby weakening the school system. SMTs can make an important contribution by holding educators accountable for fulfilling their roles and responsibilities as explained in the Norms and Standards of Educators (DoE, 2000a).

- It is essential for the SMTs to perceive their role in considering the role of their schools as the organisation that brings together the various agencies that have an impact upon the health of OVC. Some school members may resist action until they can see good reason to be committed to it.Therefore, school HIV policy must be clear with regard to the processes and systems sensitive to issues of OVC. For example, identifying OVC can follow a system or process known to every educator. In other words, the role of SMTs is creating foundations for action (Buthelezi, 2008).

- Mobilise existing national resources. SMTs must develop partnerships for care and support for orphaned and vulnerable learners in the school. This involves sectors such as clinics, other schools, child welfare and social security. This would involve collaboration and coordination with other sectors for delivery of services such as school feeding, water and sanitation, guidance and counselling to mention but a few. The key aspect in this instance is to draw up a school asset map (SAM), as explained by Ebersohn and Eloff (2006a: 27):

  > This is the process of making a graphical representation of identified assets in the system in which the teaching and helping profession is working. This process of making assets 'visual' is intended to initiate or 'kick-start' the process of asset mobilisation.

The process of developing an asset-map has led to the careful consideration of the implication of choosing an asset-based approach to school intervention for OVC. The participants were not knowledgeable about this approach and therefore constantly reflected on the validity of their actions, getting feedback from one another and identifying gaps. The impulse was to fall back on what is known and what is familiar, and how relevant it is, in responding to the issues of OVC in their school contexts. It is therefore critical that the SMTs, with the principal, create the opportunity to draw on all the assets available in the school and the community. Specific action is needed to establish a whole school campaign to build and extend the asset-map, in this instance with regard to responding to OVC.

The above responds to the themes of the educators perceiving their own initiatives as insignificant, and as uncoordinated, unguided by policy and failing to draw on available assets. It is also important to engender the notions underpinning the asset-based approach in the educators, encouraging them to see themselves as having agency in their responses to the orphaned and vulnerable learners at school.

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Reducing the gap between being *eligible* and being *ready* for higher education: a learner engagement perspective

Merridy G. Wilson-Strydom
University of the Free State
&
Driekie H.R. Hay
University of the Free State

1. INTRODUCTION

The challenge of student under-preparedness for higher education has gained increasing attention over the past decade. Much focus in this area has been on how universities can support first-year students through Bridging Programmes, extended degrees, foundational provision and other forms of student support. This chapter argues that, in addition to interventions targeting incoming students, it has become critical for universities in South Africa to begin to work with their feeder schools to reduce the gap between being eligible for university, in terms of admission requirements, and being ready for successful university level study (Conley, 2008). A theory of learner engagement (Kuh, 2007; Kuh *et al.*, 2007; Kuh *et al.*, 2005) is proposed as a useful conceptual framework to underpin university-school partnerships focused on improving effective educational practices and learner engagement at the school level. Initial findings from a pilot study, using the newly adapted South African High School Survey of Learner Engagement, are presented. The chapter highlights the value of a focus on learner engagement as a basis for understanding and enhancing effective educational practices at the school level, and so improving learner readiness for higher education.

The current education crisis in South African education, in particular schooling, has been well documented. For example, a recent Ministerial Committee stated that, "[t]he Committee heard the strongest expressions of concern, often in very passionate terms, that there was an indisputable crisis in education, and that it needed to be resolved as a matter of urgency" (DoE, 2009: 40). From a higher education perspective, the challenges in the schooling system have had, and continue to have, a marked impact on the competencies and resultant success of students entering universities.

Although schools in South Africa face a specific set of challenges, in many instances a legacy of the apartheid past and the complex transformation processes since 1994, the increasing extent of underpreparedness of students for higher education is a global issue. For example, McCarthy and Kuh (2006: 664) reflect on a "troubling mismatch between the academic habits of many high school students and what will be expected of them in college". Conley (2008: 3-12) calls for rethinking of what college readiness

means, noting that there is a difference between being eligible for university and being ready to successfully meet the cognitive, emotional and content-related demands of university study. Research has pointed to a range of reasons for this gap, including the extent to which students have developed important cognitive strategies for effective learning, have sufficient content knowledge, have acquired academic behaviours necessary for success, and have the contextual skills and knowledge to understand how higher education works (Conley, 2008). Psychosocial theories focus on student identity development and interpersonal experiences as predictors of student preparation and success (Pascarella and Terenzini, 2005). Several authors have highlighted the impact that demographics such as race, socio-economic background, gender and the family's level of education have on readiness for higher education (Kuh *et al.*, 2007; Kuh *et al.*, 2005; Mushi, 2003; Tinto and Pusser, 2006).

Universities in South Africa have embarked on a range of actions to manage the crisis of increasing student underpreparedness. This has included the development of the National Benchmark Tests that seek to measure competencies needed for successful university study (Griesel, 2006; Yeld, 2009), reviews of admissions requirements, placement of students into extended degree programmes and the provision of foundation programmes where students do not qualify for university entry. While such measures play a critically important role in our current context, this chapter argues that universities in South Africa need to focus greater attention on working in partnership with their feeder schools to better prepare school leavers for higher education whilst at school, and to contribute to the overall improvement of the school system, particularly given our current "context of systemic collapse of schooling, at least for the bottom half of the education system" (DoE, 2009: 40). The importance of school-university partnerships can be highlighted by borrowing the words of Ernest Boyer:

> I'm convinced colleges and universities also must become more actively engaged with the nation's schools. We hear a lot of talk these days about how the schools have failed, and surely education must improve, but the longer the debate continues, the more I become convinced that it's not the schools that have failed, *it's the partnership that's failed* […] I've concluded that it's simply impossible to have an island of excellence in a sea of community indifference (Boyer 2000: 147, emphasis added).

The theory and practice of student engagement is argued to be a helpful framework to underpin school-university collaboration (Kuh 2007; Kuh *et al.*, 2005). Although the outcomes of such collaboration would be of benefit to universities themselves as students become better prepared and universities develop a deeper understanding of the schooling context from which their students come; such partnerships should be seen within the context of the mandate for universities to contribute to the public good, and to fulfil their "... urgent obligation to become more vigorously engaged in the issues of our day" (Boyer 2000: 147). The quality of schooling and the importance of educational opportunity for breaking the cycle of poverty are certainly major 'issues of our day' in contemporary South Africa.

2. STUDENT (LEARNER) ENGAGEMENT AS A BASIS FOR ACTION

When considering the gap between being eligible versus ready for university we need to ask to what extent school learners are involved in the types of educational activities that will help them to develop the habits of mind and skills needed for higher education (McCarthy and Kuh, 2006: 665). School performance/results, which are currently the main criterion used for making admission decisions, do not provide information on learner behaviours and learning activities that form the foundation for academic success in higher education. The concept of student engagement (or learner engagement when used in the South African schooling context) builds on the work of Chickering and Gamson who outlined seven principles for effective undergraduate education (Kuh *et al.*, 2005: 8). The seven principles are: (1) encourage student-faculty contact; (2) encourage cooperation among students; (3) encourage active learning; (4) give prompt feedback; (5) emphasise time on task; (6) communicate high expectations, and (7) respect for diverse talents and ways of learning (Chickering and Gamson 1991: 76). Although focused on undergraduate level education, research on effective teaching in schools has also shown the value of these principles when applied in a schooling context. In their original work, these authors noted that these seven principles and the educational practices they imply, draw on six powerful forces in effective education, namely activity, diversity, interaction, cooperation, expectations, and responsibility (Chickering and Gamson, 1987: 3).

In brief, student engagement can be defined as "the time and energy that students devote to educationally purposeful activities" (Kuh *et al.*, 2005: 8). Both the roles of the student and the educational institution in facilitating educationally purposeful activities are important. In particular, the concept of student engagement focuses attention on the level of academic challenge, active and collaborative learning, student/learner-staff interaction, the availability of enriching educational experiences, and a supportive campus/school environment (Student Development and Success, 2008: 6; Kuh *et al.*, 2005: 11-13). Applying the concept of student engagement at the high-school level specifically, Yazzie-Mintz (2006: 1) notes that "(S)tudent engagement can be described as the student's relationship with the school community: the people (adults and peers), the structures (rules, facilities, schedules), the curriculum and content, the pedagogy, and the opportunities (curricular, co-curricular, and extra-curricular)". A key assumption of the student engagement approach is that it is necessary to 'listen' to students/learners themselves in order to understand how they experience their learning environment and also to understand how this environment can be enhanced (Harper and Quaye, 2009: 8). Similarly, the Building Engagement and Attainment for Minority Students (BEAMS) project, whose work was based on the concept of student engagement, emphasised the value of collecting and analysing accessible data that educational institutions can use to improve student learning and success (Del Rios and Leegwater, 2008: 11). Although the BEAMS project was focused on post-schooling colleges, a similar argument can be made for schools (see, for example, Willms, 2000).

Building on this theoretical basis, several research instruments have been developed for measuring student engagement. First administered in 2000, the National Survey

of Student Engagement (NSSE), developed for university students, has been completed by over a million students at more than 1300 colleges and universities in the United States of America (USA). Building on the success of the NSSE research, the High School Survey of Student Engagement (HSSSE) was completed by almost 200,000 high-school students between 2004 and 2006 (McCarthy and Kuh, 2006: 665). Administration of the 2008-2009 HSSSE is currently under way in the USA. The results of these surveys, in the USA context, have demonstrated the value the concept of student engagement has, particularly in the context of improving teaching and learning behaviours, thus contributing to student/learner success and school improvement (Yazzie-Mintz, 2006: 11; Del Rios and Leegwater, 2008: 2-55; Willms, 2000).

In 2006 an adapted version of the survey targeting university students, the South African Survey of Student Engagement (SASSE) was administered for the first time in South Africa at the University of the Free State. This research, now being extended to cover seven South African universities, has demonstrated both the theoretical and practical value of student engagement as a conceptual basis for enhancing student/learner success and supporting systemic improvements in South African higher education (Strydom, Mentz, and Kuh, forthcoming: 11; Student Development and Success, 2008: 21).

3. Methodology

This study draws on the strong base of previous testing of the instrument, and the theory of learner engagement in both a university and high-school setting. The High School Survey of Student Engagement was adapted for the South African schooling context, with the permission of the authors. The adapted questionnaire, called the South African High School Survey of Learner Engagement (SAHSSLE) is available in English and Afrikaans, depending on the school's language of instruction. At present, neither the HSSSE nor the SAHSSLE are standardised measures, but rather, instruments that provide a range of descriptive information on teaching and learning practices in schools. The aim of gathering this information is to inform school improvement, so that schools can identify specific areas in which they could enhance their teaching and learning.

This chapter presents the findings of a pilot study conducted at two schools in the Free State province using the SAHSSLE. The full project, due to be completed at the end of 2009, will cover a sample of 20 schools and approximately 3000 learners in Grades 10, 11 and 12. The two pilot schools were selected to represent different socio-economic contexts, locations, language of instruction, and gender of the learners.

Optical scanning forms were used to eliminate the time constraints and potential recording error of manual data capturing. Each participating learner was provided with a questionnaire, an HB pencil and a ruler. The researcher guided the learners through the procedure for recording answers on the optical scanning form and the learners together completed the demographic information to ensure that all learners felt confident to correctly mark their responses on the form. Participation was voluntary and anonymous.

4. Pilot study results: Exploring learner engagement at two schools

Selected initial results drawn from the pilot study are presented in this section in order to support the argument being made for the value of student/learner engagement as an underlying theoretical and methodological approach for university and school collaboration. Being a pilot study consisting of two schools, nuanced analyses, such as taking into account learner demographics, have not been conducted. Rather, the focus for this paper is on using the pilot data to present a picture of what the student engagement approach can tell us about school life, and then using this understanding to consider possibilities for increasing collaboration between our university and feeder schools in order to better prepare school leavers for university study, and to support school improvement.

Sample description

The English version of the SAHSSLE was completed by a total of 151 learners at School One and the Afrikaans version was completed by 143 learners at School Two, giving a total pilot sample of 294 learners.

School One is a coeducational, English medium of instruction, township high school with 1093 learners in Grades 8 to 12. The school currently has 44 educators and three administrative staff. The untarred access road is in poor condition and school buildings and classrooms are in relatively poor condition, with several broken windows, and many broken chairs and desks. The school has a small library, three biology/science laboratories and a computer room. There are no sports facilities. Of the 151 learners who completed the SAHSSLE, 32% were in Grade 9, 36% in Grade 10 and 32% in Grade 11. A range of ages were represented with the majority of the sample falling in the 16 to 18 year age groups. A relatively large proportion (26%) reported that they were 19 years or older. The sample was roughly evenly split by gender, with 55% of learners being male and 45% female. The majority of the sample (92%) reported their population group as Black African and 6% as Coloured. Although the medium of instruction at School One is English, none of the learners reported that English was their home language. Learners reported a range of home languages; the most commonly spoken home language being Setswana (69%). Thus, all the learners in the sample from School One are learning in a language that is not their mother tongue. The majority of the learners come from families in which parents or guardians do not have tertiary education. Only 15% of the sample reported that their parents had some form of post-schooling education, 27% reported that their parents had completed Grade 12/Matric, while the remaining 58% of the learners indicated that their parents had only completed a limited number of years' schooling or reported that they did not know what level of education their parents had achieved. As such, the majority of these learners would be classed as 'first generation students', a group of students that research has shown find tertiary education particularly challenging (Pascarella and Terenzini, 2005; Kuh *et al.*, 2005; Student Development and Success, 2008).

School Two is an Afrikaans all girls' High School located in a relatively high socio-economic status suburb. The school has a total of 646 learners in Grades 8 to 12. There are currently 24 educators and four administrative staff. The school is in excellent condition and provides a range of learning facilities, including ten biology/science laboratories and additional specialist rooms such as home economics laboratories. There are four computer rooms and two media centres. The school provides a range of sporting facilities including athletics fields, netball and tennis courts, hockey fields and a swimming pool for water sports. A total of 143 learners completed the SAHSSLE at School Two, 59% were in Grade 10 and 41% in Grade 11. Nearly all the learners fell into the age range of 15 to 17 years (99%), with only 1% (2 learners) reporting that they were 18 years of age. The majority of the sample (85%) classified their population group as White, followed by Coloured (9%) and Black African (5%). With 93% of the sample reporting that Afrikaans was their home language, at School Two the majority of learners are learning in their mother tongue. A relatively high percentage of learners (37%) reported that they did not know what their parents' highest level of education was. Nonetheless, the educational background of parents of learners at School Two differs substantially when compared to learners at School One. At School Two, only 0.7% (1 learner) reported that her parents did not complete high school. In contrast to the 15% of learners at School One who come from homes where parents have post-schooling qualifications, at School Two 53% of learners reported that their parents had continued with their studies after school and 22% at the Masters or Doctoral levels.

Perceptions of the school environment

In general, the learners participating in the pilot study reported positive perceptions about their school. Considering the entire sample (n=295), 86% noted that they cared about their school and 84% reported that "overall, I feel good about being in this school". However, more specific questions about the school environment provided more nuanced responses, and differences in responses of learners at School One and Two were also found. For example, at School One, 52% of the learners reported that they would not chose to attend the same school again, compared to only 26% at School Two. Safety at school was also an important issue, with 49% of learners at School One reporting that they do not feel safe at school compared to only 4% who did not feel safe at School Two.

The quality of teachers and teaching in South African schools has commonly been noted as one of the major reasons for the current poor quality of schooling. Interestingly, 81.7% of the learners in the pilot sample reported that they receive quality teaching at their school. Fewer learners at School One reported receiving quality teaching (69.3%). 68% of the entire sample were of the opinion that they were supported by teachers at their school. However, 33.7% of the learners noted that only some teachers wanted them to do the best they can, and 42.9% that only some teachers believed that they could do excellent work. The majority of learners (72.0%) found just one or two, or some, of their classes academically challenging, 21.3% found most of their classes academically challenging and only 6.7% reported that all of their classes are academically challenging.

Time spent on various activities (educational and otherwise)

In their initial formulation of the seven principles of effective undergraduate education, Chickering and Gamson (1987: 2) state that: "[T]ime plus energy equals learning. There is no substitute for time on task. Learning to use one's time well is critical for students and professionals alike [...]Allocating realistic amounts of time means effective learning for students and effective teaching for faculty".

Learners were asked to indicate the number of hours they spend on average per week (Monday to Sunday) on various activities. Table One provides an overview of responses for learners at School One and School Two, and highlights the relatively little time learners spend on reading and writing tasks compared to what would be required once they enter university, and the relatively large amount of time spent watching television, surfing the internet or talking on the phone. Few learners in the sample spend more than approximately five hours per seven-day week doing written homework and reading or preparing for classes. At School One, 43.8% of the learners spend one or fewer hours doing written homework. Even so, the majority of the learners (86.6%) reported that they have worked harder than they expected at high school. Research suggests that at university level students are required to study for 20 to 25 hours per week to be successful in undergraduate work (Student Development and Success, 2008: 3). The gap in readiness for higher education study is thus evident. In addition, a total of 51% of the pilot sample reported that they very seldom or never wrote reports or essays of longer than five pages, 33.2% sometimes write papers longer than five pages and 15.8% report doing this often. These trends are not unlike those found in the American high-school context (see, for example, McCarthy and Kuh, 2006).

Table 1: Time spent on various activities

Activity	School	Number of hours				
		None (%)	1 or fewer (%)	2-5 (%)	6-9 (%)	10 or more (%)
Doing written homework	School One	2.8	41.0	34.7	13.2	8.3
	School Two	0.7	11.4	50.7	27.9	9.3
Reading and studying for class	School One	6.4	30.5	36.9	14.2	12.1
	School Two	1.5	24.4	55.6	15.6	3.0
Reading for yourself	School One	5.2	43.3	20.1	15.7	15.7
	School Two	2.2	36.6	43.3	13.4	4.5
Participating in school-sponsored activities (clubs, sport, learner governance, etc)	School One	35.3	20.6	22.8	11.0	10.3
	School Two	12.3	18.8	43.5	18.1	7.2
Practising a sport and/or musical instrument	School One	31.4	24.8	20.4	13.1	10.2
	School Two	14.0	17.6	27.9	28.7	11.8
Working for pay	School One	53.7	16.9	19.1	4.4	5.9
	School Two	80.3	6.8	6.8	3.0	3.0

Activity	School	Number of hours				
		None (%)	1 or fewer (%)	2-5 (%)	6-9 (%)	10 or more (%)
Doing volunteer work (not for pay)	School One	50.7	27.6	4.5	11.2	6.0
	School Two	47.7	31.5	16.9	3.1	0.8
Exercising	School One	10.8	28.8	27.3	12.2	20.9
	School Two	4.5	20.5	39.4	26.5	9.1
Watching television and/ or playing video games	School One	4.7	24.0	21.7	25.6	24.0
	School Two	3.1	33.3	44.2	15.5	3.9
'Surfing' the internet or chatting online	School One	38.4	18.1	15.2	11.6	16.7
	School Two	10.6	43.9	28.0	7.6	9.8
Talking on the phone (including cell phones)	School One	25.2	41.0	16.5	2.9	14.4
	School Two	5.3	43.9	31.1	11.4	8.3
Hanging out/socialising with friends outside of school	School One	27.0	21.9	30.7	8.0	14.4
	School Two	2.2	8.2	49.3	22.4	17.9
Travelling to and from school by taxi	School One	79.3	14.8	1.5	3.0	1.
	School Two	89.3	5.3	3.1	1.5	0.8
Travelling to and from school by bus	School One	81.1	9.8	3.8	3.8	1.5
	School Two	95.5	2.3	0.8	1.5	0
Walking to and from school	School One	6.7	37.0	13.3	5.9	37.0
	School Two	65.9	25.8	3.0	0.8	4.5
Taking care of family members (ill parents, younger siblings, grandparents, etc)	School One	26.7	13.3	15.6	16.3	28.1
	School Two	74.3	16.2	6.6	1.5	1.5
Doing chores at home (preparing food, cleaning, washing clothes, etc)	School One	5.7	19.3	27.1	17.9	30.0
	School Two	27.5	42.0	22.5	5.1	2.9

The impact of socio-economic context on the types of activities learners engage in is evident in the fact that at School One, 37% of the learners spend more than ten hours per week walking to and from school, compared to 4.5% at School Two. Yet, 31% of the learners at School One report that they do not eat breakfast before attending school in the morning, compared to only 14% at School Two. Thus, at School One, many learners spend a relatively large amount of time walking to and from school, but without having eaten. The potential impact on learning is self-evident. In addition, the data in Table One also highlights the extent of time that learners from low socio-economic context schools spend caring for family members and doing chores at home. It is important for universities to understand these contexts, and the constraints faced by an increasing number of students in order to conceptualise a teaching and learning approach, and relevant support structures that will accommodate, and assist students from disadvantaged social and educational backgrounds to become engaged at the university level and so increase their chances of success.

ACTIVE AND COLLABORATIVE LEARNING

Active and collaborative learning refers to the extent to which learners are involved in their learning, are active in class, required to reflect on their learning, and engage in discussions in and outside of class. "And when students collaborate with others in solving problems or mastering difficult material, they acquire valuable skills that prepare them to deal with the messy, unscripted problems they will encounter daily during and after college" (Kuh *et al.*, 2005: 11). Table Two summarises learner responses for survey items focusing on active and collaborative learning for School One and School Two.

Table 2: Active and collaborative learning

How often have you:	School	Never (%)	Very Seldom (%)	Sometimes (%)	Often (%)
Asked or answered questions in class	School One	2.9	7.9	54.0	35.3
	School Two	2.5	14.2	61.7	21.7
Talked to a teacher about class work	School One	13.5	16.3	46.1	24.1
	School Two	6.0	29.9	48.7	15.4
Made a class presentation	School One	9.0	16.6	46.2	28.3
	School Two	7.4	24.8	52.1	15.7
Received helpful feedback from teachers on your work	School One	15.3	18.3	45.0	21.4
	School Two	5.2	19.8	50.9	24.1
Worked on a project needing information not in a textbook	School One	8.9	19.	48.9	23.0
	School Two	5.2	7.8	39.7	47.4
Worked on a project that required interaction with people outside school	School One	9.4	21.6	48.9	20.1
	School Two	5.1	12.7	43.2	39.0
Worked on a project with a group of learners	School One	2.8	6.3	47.6	43.4
	School Two	2.5	6.7	50.8	40.0
Discussed questions in class with no one clear answer	School One	5.8	16.1	51.1	27.0
	School Two	3.5	19.3	52.6	24.6
Used work from one class to enrich work in another class	School One	8.7	15.9	47.8	27.5
	School Two	6.7	12.5	52.5	28.3
Discussed marks with teachers	School One	15.2	18.1	43.5	23.2
	School Two	12.7	28.0	40.7	18.6
Discussed classes, reading, homework with teachers outside of class time	School One	29.6	23.7	38.5	8.1
	School Two	22.4	40.5	26.7	10.3
Discussed ideas from class, reading, homework with people outside of your class	School One	14.5	14.5	48.1	22.9
	School Two	1.7	15.4	48.7	34.2

In general, at both of the pilot schools, it appears that active and collaborative learning does receive emphasis. This is to be expected since this approach is an important

element of the current schooling curriculum. The area in which both schools tended to fare less well was that of interaction between learners and teachers. For example, at School Two 40.7% of the learners reported that they 'never' or 'seldom' discussed their marks with teachers; 33.3% of the learners at School One reported the same. Several learners also noted that they seldom or never received helpful feedback from their teachers.

While the majority of the learners in the sample reported asking or answering questions in class and discussing questions that did not have one clear answer, of the total sample, 22.4% reported that they did not like discussions in which there is no clear answer. This percentage was higher at School Two, with one third (33.3%) of the learners not liking discussions that do not have one clear answer. Similarly, 31.3% of the total pilot sample reported that they did not like working on problems that are difficult and require a great deal of thinking. These findings are a cause for concern as it has implications for the extent to which learners are developing the skills in debate and critical reflection that will be needed when they enter university. Another cause for concern was the fact that 27.7% of the sample disagreed or strongly disagreed that the work they do at school makes them curious to learn new things, and 32.4% disagreed or strongly disagreed that they are excited about what they learn at school. This implies that more can be done in these schools to foster a love of learning and an interest in exploring new ideas.

When asked if they had ever been bored in class at this school, 24.5% of the pilot sample reported that they had never been board, 28.8% have been bored 'once or twice', 35.0% 'once in a while', and 11.7% 'every day'. Figure 1 summarises the reasons given for finding classes boring. The main reasons included a lack of relevance of the materials being learnt, work being too simple or too difficult, and no interaction with the teacher and/or with other learners.

Experiences with diversity

Many young people are confronted with diversity issues when entering higher education, and universities in South Africa have a poor track record in dealing with diversity and transformation (DoE, 2008). In addition to contributing to our overall humanity, diversity is a powerful force in effective education (Chickering and Gamson, 1987: 2). Based on the responses of learners in the pilot study, it appears that learners are provided with some opportunities to engage with diversity in the school context, yet it is questionable whether this would be sufficient to prepare learners for a diverse university environment. While at both pilot schools the majority of the learners reported 'sometimes' or 'often' working with learners different from themselves, a relatively large proportion did not. For example, at School One, 28.3% of the learners reported that they 'never' or 'very seldom' talked to or worked with a learner of a different race or culture, and 34.0% that they 'never' or 'very seldom' talked to or worked with a learner who was different from them in terms of religion, political opinion, family income or personal values. These figures were slightly lower for learners at School Two: 12.5% and 21.0%, respectively. More encouraging was the fact that 62.2% of the sample reported participating in community service or

volunteer work, and 61.4% had participated in work experience programmes. These experiences are likely to have contributed, to some extent, to the learners' awareness of diversity.

Aspirations and support for post-schooling study

The majority of the learners in this sample (93.3%), from both schools, reported that they are motivated to do their schoolwork because they want to go to university. Similarly, 96.3% of the learners in the sample indicated that they attend school because they want to go to university. At School One, 69% of the learners reported that their school encouraged them to continue studying after school, compared to 95% of the learners at School Two. Despite learner reports that they were encouraged to continue studying after school, 45.5% of the learners at School Two reported that they 'very seldom' or 'never' talked to a teacher about career goals, and 72.7% that they 'very seldom' or 'never' talked to a teacher about how to apply for university. More learners at School One (63.8%) reported discussing career goals with a teacher, but the majority (81.8%) 'very seldom' or 'never' talked to a teacher about how to apply to university.

5. Discussion and conclusion

At the outset of this chapter it was argued that partnership between schools and universities is critical for improving the schooling system, ensuring that learners complete school better prepared for university, and assisting universities to understand the context from which their students come, and hence how best to target undergraduate programmes and additional student support initiatives. Selected results from a pilot study, making use of the South African High School Survey of Learner Engagement, were presented in this chapter to support the argument for a focus on student/learner engagement as a mechanism whereby universities and schools might collaborate. The data presented pointed to many areas in which the participating schools might focus school improvement efforts. The details of this will not be elaborated on in this chapter. In this instance, the important question is: How might the information provided from this survey support collaboration?

One of the strengths of the student engagement framework is that it is a theoretically driven, research-based approach that can be used to explore the student/learner voice in the context of educational effectiveness. The BEAMS project highlighted the importance of gathering appropriate, targeted, relevant and accessible data as the basis for improving learning. An initial starting-point for building collaboration and partnership between universities and schools is for these educational institutions to collaborate on research of this nature, research that will inform both school improvement and university understanding of the schooling context. Given the current limited capacity in the South African schooling sector, universities might assist schools in providing research support.

Considering the specific findings presented above, possibilities for collaboration emerge in at least the following areas: ensuring that learners embrace and understand

diversity; providing information to learners and schools regarding career options, implications for study choices, university study, application processes, and what is expected of students and university. Perhaps the area in which greatest effort should be directed is that of learners' reading and writing skills. Universities and schools are thus challenged to make use of the information generated by the student engagement research to conceptualise innovative ways in which to improve both quality and quantity of learner reading and writing while at school.

Following a statistical analysis that examined the relationships between student engagement and selected measures of success in postsecondary education, the authors stated that:

> [T]here are limits to what colleges and universities can realistically do to help students overcome years of educational disadvantages ... While student engagement is not a silver bullet, finding ways to get students to take part in the right kinds of activities helps to level the playing field, especially for those from low-income family backgrounds and others who have been historically underserved, increasing the odds that they will complete their program of study (Kuh *et al.*, 2007: 3).

The same argument holds for increasing learner success at school level, thus improving preparation for university level study (Willms, 2000; Yazzie-Mintz, 2006).

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CHAPTER 16

Interpreting: the argument for multicultural learning environments at the University of the Free State

Xany du Toit
University of the Free State
Dutoitx@ufs.ac.za

1. INTRODUCTION

The University of the Free State (UFS) implemented interpreting within a classroom setting in 2007. In addition to this being a relatively new phenomenon at South African universities, the multilingual challenges of the tertiary education environment have been compounded by racial tension and linguistic sensitivities at the UFS in recent years. The UFS language policy is based on parallel-medium instruction; the unfortunate consequence is that, due to the demographics of the Free State, this often leads to unintentional racial segregation in the classroom. Thus, students are inadvertently exposed to a majority mono-cultural learning environment. This chapter aims to foreground the benefits of the creation of a multicultural learning environment at the UFS as additional to the functional benefits usually touted in favour of classroom interpreting. The establishment of linguistically integrated classroom settings facilitates the foundation of a realistic simulation of the South African classroom atmosphere.

This chapter aims to advocate for interpreting as an invaluable aid to the creation of multicultural learning environments at tertiary institutions in South Africa. Specific emphasis will be placed on the function of interpreting in a classroom setting and its responsibility in generating a multicultural learning environment. Hence, this study focuses not on interpreting as vehicle for the provision of mother-tongue education, but rather on interpreting as bridge between two or more cultures within the classroom setting. More specifically, it focuses on interpreting as the critical link in creating multicultural classroom settings at the University of the Free State (UFS).

Interpreting within a classroom setting (referred to hereafter as classroom interpreting) has been implemented in phases and only to a degree at the UFS since 2007. This has evoked several strong optimistic and pessimistic reactions from both students and faculty. Considering the litigiousness of classroom interpreting with regard to the strong opinions voiced during its preliminary stage, empirical research was initiated in conjunction with its implementation regarding students' as well as the faculty's opinions on interpreting. This study is therefore partly devoted to the students' reception and opinions concerning interpreting within a classroom setting, and partly to interpreting as a solution to multilingual problems in the UFS classroom. Some anticipatory background on multiculturalism and education is essential.

2. Multiculturalism and education

Elderling (1996: 315) defines multiculturalism as "the coexistence of different ethnic or cultural groups in one country". Expanding on this, Kincheloe and Steinberg (1997: 1) establish that, while the term multiculturalism *does* relate more to race, "it is commonly extended to other categories of diversity" as well. Language, thus, may easily be regarded as one such aspect categorised under diversity. This viewpoint may be further extended by stating that language could be viewed as the most prominent and prevalent representative of any culture due to the fact that it is utilised by all members of a specific culture. In acting as an emissary for all cultures language may thus be considered the most obvious and prominent feature of cultural diversity (Kalantzis *et al.*, 1989: 10).

Greater adherence to categorisation takes place in South Africa. People are classified *within* various racial categories and not all people speak the same language as their racial counterparts. Note should therefore be taken that the idea of language, race and culture is more complicated than a simple division between Afrikaans and English, even though the focus of this study is on the choice of language of *instruction* (either Afrikaans or English) at the University of the Free State. Within the closely demarcated context of the UFS, students would consider their choice of language of instruction (either Afrikaans or English) as representative of their collective identity as students; in this case the students identify themselves as either English students or Afrikaans students.

It should also be noted that one of the motivations behind the creation of multicultural classroom settings at the UFS is that the unintentional outcome of separate classes for English and Afrikaans students results in the undesirable lack of exposure of students to a multicultural teaching and learning environment. Should students, however, be situated in the same class, it is argued, and hence receive the same information at the same time, contribute to and share in the creation of knowledge with their peers, then a collective identity of a UFS student is created, and not a linguistically segregated "Afrikaans class" or "English class".

According to Shaull (in Freire 1993: 16) education either functions as an instrument to facilitate the integration of the younger generation into the logic of the present system, or it becomes the practice of freedom, the means whereby men and women participate in the transformation of their world. Currently, these two options are still open choices at the UFS. The present segregated classroom setting needs to be moved towards the practice of men and women who "participate in the transformation of their world". Currently, the multicultural environment is that which most students *move into* after leaving university but, it is argued, it should be the one students move *within* during their years of tertiary education.

Classroom interpreting enables this to happen, as students are required to interact with one another on various topics within a classroom setting. This sharing of ideas over the cultural threshold facilitates learning based on the basic idea of students from diverse backgrounds allowed the opportunity to exchange information. The

sharing of knowledge between cultures through the facilitation of interpreting allows for the enrichment of the student collective irrespective of language or culture.

In a study on race conducted in 2000 at the University of Cape Town (UCT), an English university, students from all sides of the racial spectrum indicated that they had a "stronger belief in racial integration since their attendance at UCT" (Mabokela, 2000: 69). Hence, the university had contributed to the students' acceptance of multiculturalism and racial integration. The students were placed in a racially integrated setting without an option of segregated classes, which is currently the case at the UFS (in terms of Afrikaans and English classes).

3. Challenges to the traditional UFS classroom setting

As the UFS is a historically monolingual, Afrikaans University, some identity conflict is to be expected from Afrikaans students hesitant about the changing landscape regarding the language of instruction. The defensive instinct to cling to a protectionist view of their culture and language and the suspicious othering of cultures now incorporated into the formerly monolingual environment, had to be anticipated. Inevitably, this leaves students from other cultures to feel marginalised, as their cultures and values are considered underrepresented compared to the established Afrikaans learning environment, and may also be observed in various cultural traditions and activities on campus traditionally associated with the historically ingrained Afrikaans culture. Inevitably the tussle between the established culture (associated with the Afrikaans language) and the newly introduced cultures (associated with English) has lead to covert as well as overt friction. One reasonably widespread example of the remaining predominance of the historically white, Afrikaans culture on campus is the traditional residence "anthems". In the majority of residences this song associated with their collective identity is singularly Afrikaans. In addition, one finds that the unique customs among the students (in the residences, in particular) are predominantly termed in Afrikaans. Terms such as 'Sêr' (Serenading), Teekan (a tea/coffee drinking tradition) and HK (Residence Committee) have been adopted by both Afrikaans and English students.

This monolinguistic and monocultural learning environment has long been a source of concern for its inability to expose students to the realities of the South African multicultural workplace. At universities such as the UFS, the dominant culture associated traditionally with the Afrikaans language of instruction must become accommodating to other linguistic identities. It is argued that the more extensive the representation of all cultures on campus, the more diverse the manifestation of an all-inclusive university culture. This, in turn, will lead to a comprehensive learning environment and a more inclusive campus and student collective, while the continued lack of diversity will only lead to problems in allowing for innovative thinking (Eloff, 2009: 3).

4. The current status quo in the UFS classroom

The majority of the classes on the University of the Free State campus are taught parallel medium. This implies the repetition of the same class in Afrikaans and English, taught separately. In addition, due to the parallel-medium language policy of the UFS (Language Policy of the University of the Free State, 2003), creating classroom situations that accommodate both English and Afrikaans students simultaneously cannot be possible unless both languages are used concurrently. This implies that the lecturer will have to repeat everything in both Afrikaans and English, resulting in information redundancy.

The situation in the classroom, therefore, is one of continuous intercultural non-communication. White students (predominantly Afrikaans-speaking students) in a show of overt protectionism feel that any attempt at cultural (linguistic) integration will infringe upon their language rights (*Volksblad*, 2007). They therefore tend to insist on their exclusive rights to be taught in their own language.

In order to bridge this instinctive divide to allow for English- and Afrikaans-speaking students to be accommodated in one class and hence facilitating greater integration, the university is left with one of two possibilities. First, the class could be presented in both English and Afrikaans. This will accommodate all students, but, as indicated above, will prove extremely time-consuming, as everything will have to be repeated in both languages. The alternative is, of course, the implementation of simultaneous interpreting in the classroom, a step that has been successfully implemented but only to a small extent in various classes at the UFS. The limited range of implementation is not the key issue to be discussed in this instance. The invaluable necessity of institutional will and collective responsibility in the move towards a change in cultural and linguistic attitudes should be discussed.

Educational institutions have a responsibility to prepare students to become part of a greater, multicultural South African society (*Volksblad*, 2007):

> if a student can learn to appreciate the value in this rich diversity at university, he or she will also be able to appreciate the value of this diversity in the workplace and broader society (http://www.uovs.ac.za/news/newsarticle. php?NewsID=715).

In this context Millar (1997: 88) states that

> students acting as a community of learners are able to bounce ideas off one another, exchange different points of view and reflect on important issues.

Students are thus motivated to re-consider their own perspectives and beliefs and take other students into consideration. The role of educational institutions, is to promote this multicultural community of learners and the main reason for this is to enable people to learn from one another in terms of experience inside and outside the classroom. What learners bring to class – "their communities' cultural models, or understandings of 'social realities', and the educational strategies that they, their families and communities use or do not use" (Ogbu, 1992: 5) – is just as important as that which they take from the classroom. The students, thus, get a wider education to

the extent that they do not merely learn from the lecturer, but also from the students with whom they share a class. By contrast, the inevitable limitations of the narrow scope of a monocultural learning environment is self-evident.

5. RESEARCH ON INTERPRETING IN UFS CLASSROOMS

As interpreting as a means of encouraging intercultural communication has been proven (see above), it is plausible to assume that interpreting may also prove successful as an aid to communication in the multicultural learning environment. Yet, despite the straightforward nature of this deduction, what proved challenging at the UFS were the ingrained attitudes of students who had until now received linguistically segregated teaching in separate classes. Interpreting therefore proved a possible target of resistance to integrated classrooms. In order to study such attitudes, students were given a questionnaire to complete after approximately a term's exposure to interpreting services in October 2007 (see Appendix).

6. RESPONDENTS

The faculty was made aware of the availability of interpreting services for classes at the start of 2007. Those interested could request interpreting services in their classroom. Hence the wide range of interdisciplinary modules in this study.

Table 1 indicates the number of students (respondents) in each class.

Table 1: Number of respondents per module

Name of module	Number of respondents
EKN324	39
OTM122	15
ORG624	8
BNA622	8
LIN222	1
GDD122	15
DKN715	2
OET724&602	5
FPL122	12

The quantitative responses were tabled according to each class and will be discussed first. The qualitative responses (reasons for each answer) overlapped to a great extent, and for this reason the most prominent reasons will be mentioned in the analysis of results, and more general reasons will be discussed later.

7. Classes

Economics: EKN324

All students were asked to complete the questionnaire. The Afrikaans-speaking students were offered the opportunity to make use of interpreting services during the first lecture, following which they decided against the service. Their reason was that they had a right to attend lectures presented in Afrikaans by the lecturer and not an interpreter. Out of principle, therefore, they preferred to attend the lecture offered in English. Afterwards, and throughout the course of the semester, the lecturer continued to lecture in both Afrikaans and English. As a result of the Afrikaans students' decision, only the Afrikaans was interpreted into English by classroom interpreters.
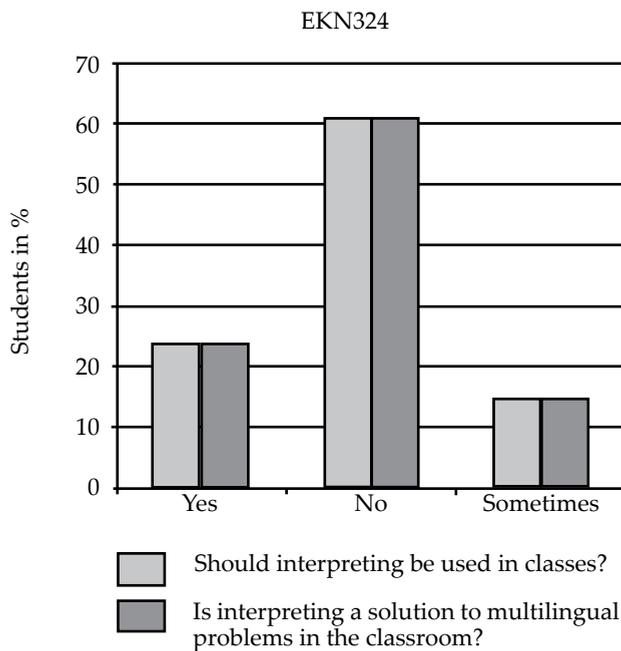
Figure 1: Respondents in the Economics class

The questionnaire was distributed during the last lecture of the semester. Very few students attended this class and consequently only 39 students completed the questionnaire.

The Economics students had an initial negative disposition regarding interpreting and this did not change during the course of the semester. The results are therefore negative and, even though the interpreters prepared before each class and offered a professional service, the students still were of the opinion that the interpreters did not interpret effectively. One reason for this, the students stated, was that due to the noise within the classroom, the interpreter was not always able to hear questions

or comments from students; consequently missing information. Therefore, it was argued, accurate interpreting could not always take place.

61% of these students were of the opinion that interpreting should not be used in classrooms. The reason stated in the majority of questionnaires was that the students believed that the interpreter did not have the relevant background knowledge of the subject matter. This was considered surprising, as the interpreters prepared for each class from the same reading material as that provided to the students. 24% were of the opinion that interpreting should be used in classes since, according to the students, it merges people from diverse backgrounds. 15% were of the opinion that interpreting should only sometimes be used in classrooms. Many of the students were of the opinion that the class was too big for interpreting to be effective.

Parallel to the above, 61% of the students were of the opinion that interpreting was not a solution to language problems in the classroom. 24% were of the opinion that interpreting is a solution to language problems in the classroom. 15% were of the opinion that it could only sometimes be a solution to language problems in the classroom.

Optometry: OTM122

Fifteen students made use of interpreting services in this class. The lecturers all used English as language of instruction. The target language, therefore, was Afrikaans.
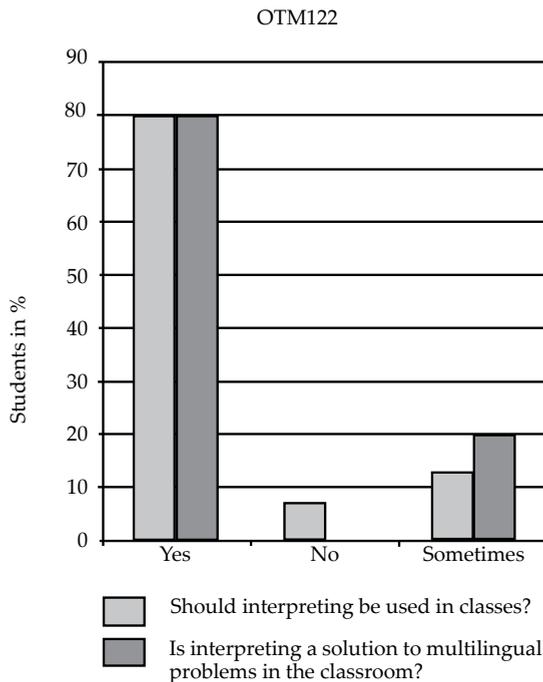
Figure 2: Respondents in the Optometry Class

Figure 2 indicates that the feedback from the Optometry students was fairly positive. 80% of the students believed that interpreting should be used in classrooms, whereas 7% were of the opinion that it should not feature in the classroom, and 13% were of the opinion that interpreting services should only sometimes be used.

80% of the students believed that interpreting could be a solution to language problems in the classroom. The 20% of students who answered *sometimes* were of the opinion that there should be separate Afrikaans and English classes. They also stated their discomfort at looking at the lecturer while listening to the interpreter.

ORGANISATIONAL PSYCHOLOGY: ORG624

Eight students made use of interpreting services in this class. The lecture was presented in both English and Afrikaans, although no Afrikaans-speaking students made use of the interpreting services.
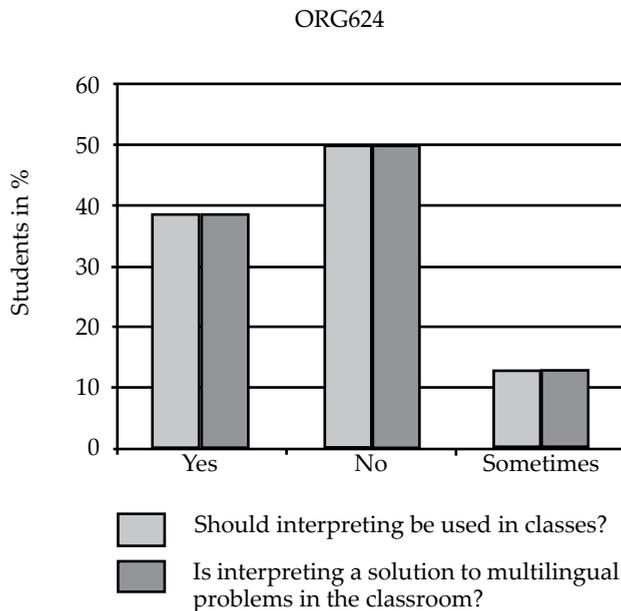
Figure 3: Respondents in the Organisational Psychology class

Figure 3 shows that 50% of the students were of the opinion that interpreting should not be used in classrooms, and that interpreting is not an effective solution to language problems in the classroom.

38% of the students were of the opinion that interpreting should be used in the classroom and that interpreting is a positive solution to language problems in the classroom.

12% were of the opinion that interpreting should only sometimes be used in the classroom and that interpreting is only sometimes a positive solution to language problems in the classroom.

Research Methodology: BNA622

Eight students completed this questionnaire. The class was presented in Afrikaans, therefore the interpreters interpreted into English.
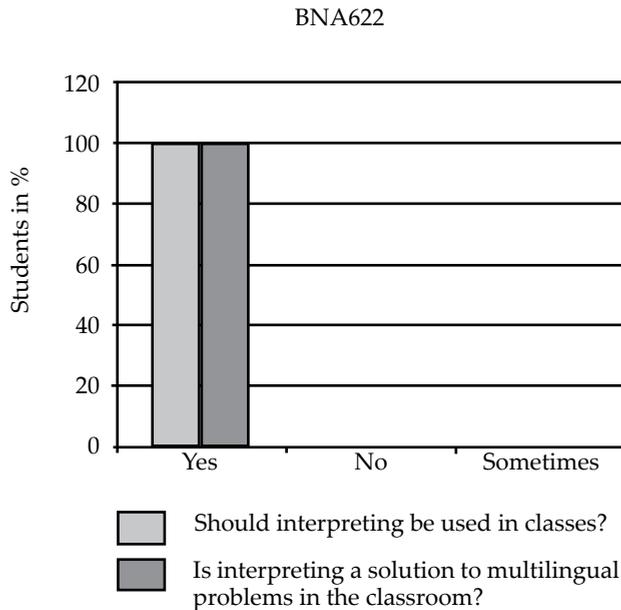
Figure 4: Respondents in the Research Methodology Class

Figure 4 indicates that all the students were of the opinion that interpreting was a positive solution to language problems in the classroom and that interpreting should be used in classes, and could be a solution to language problems in the classroom.

Linguistics: LIN222

A single student completed the questionnaire as the only student in this class who made use of interpreting services.

The student was of the opinion that interpreting should not be used in the classroom and that it would only sometimes pose a solution to multilingual problems in the classroom. His reason for this was merely that it depended on the size of the class.

LIN222
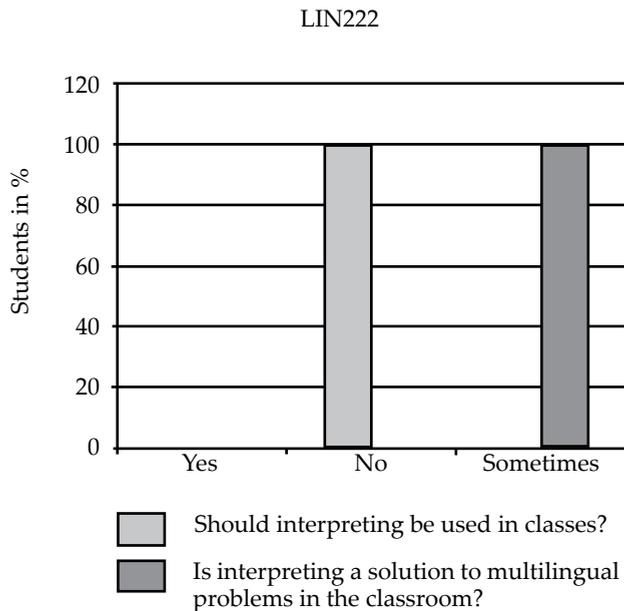
Figure 5: Respondents in the Linguistics class

RELIGION, SOCIETY AND SOCIAL CHANGE: GDD122

15 students completed this questionnaire. The class was presented in Afrikaans, therefore all 15 respondents were English.

66% of the students were of the opinion that interpreting should be used in the classroom, 7% that it should not be used at all, and 27% that it should sometimes be used. 60% of the students believed that interpreting is a positive solution to language issues in the classroom. A pervasive reason for this was that students of various cultures could thus be accommodated in one classroom. 40% were of the opinion that it would sometimes be a positive solution to linguistic challenges in the classroom.

None of the students were of the opinion that interpreting would *not* be a positive solution to language problems in the classroom.

GDD122
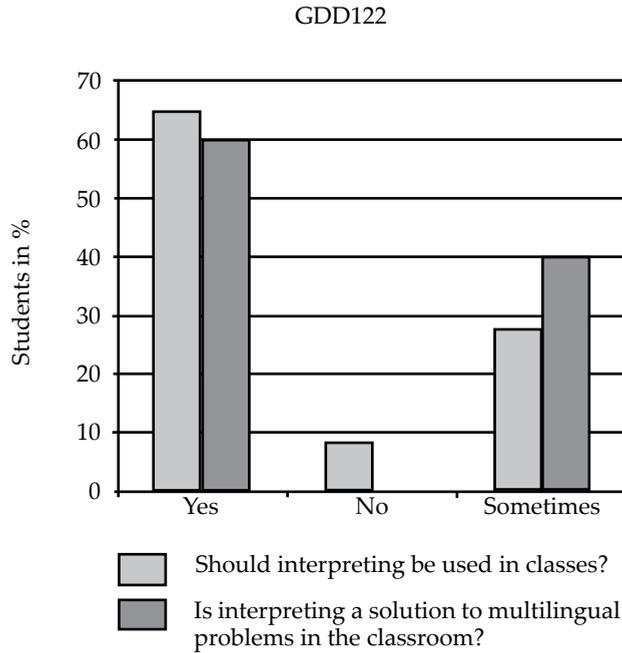
Figure 6: Respondents in the Religion, Society and Social Change class

Pastoral Therapy: DKN 715

The class was presented in Afrikaans and two students made use of interpreting services.

Both students were of the opinion that interpreting should be used in classes and that interpreting is a solution to language problems in the classroom.

DKN715
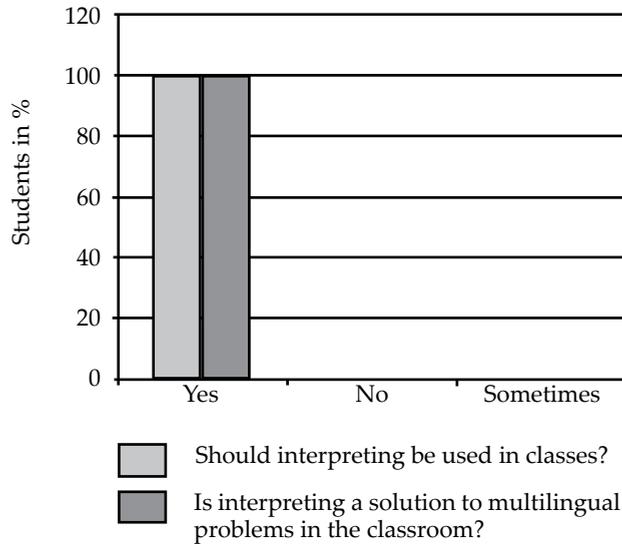
Figure 7: Respondents in the Pastoral Therapy class

OLD TESTAMENT STUDIES: OET724 & 602

The class was presented in Afrikaans, therefore the interpreting was into English.

80% of the students were of the opinion that interpreting services should be used in the classroom, while 10% were of the opinion that it should not, and 10% were of the opinion that it should only sometimes be used in the classroom.

80% were of the opinion that interpreting is a positive solution to language problems in the classroom. 10% were of the opinion that it was not a solution to language problems, and the other 10% were of the opinion that it could only sometimes be a solution.
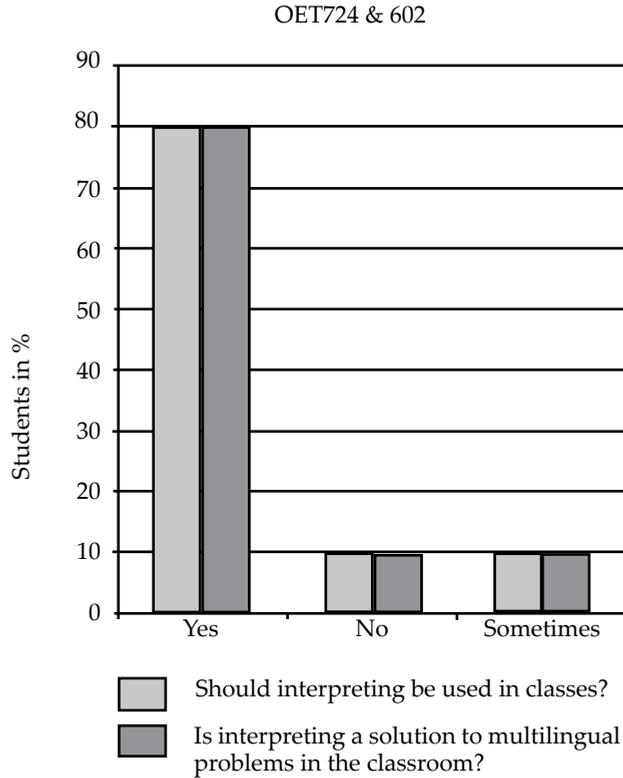
Figure 8: Respondents in the Old Testament Studies class

Education: FPL122

The responses from this class were particularly negative. This is reasonably surprising as it could be expected that education students would prove more receptive to the idea of multicultural learning environments and innovative teaching aids such as interpreting, used to achieve this.

FPL122
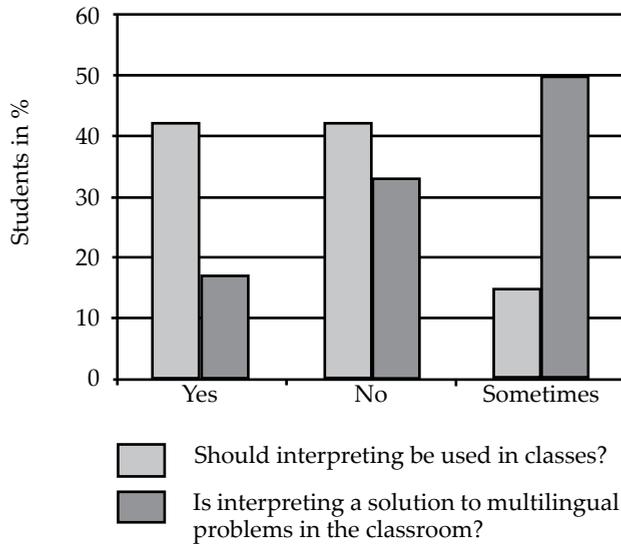
Figure 9: Respondents in the Foundation Phase Education class

16% of the students were of the opinion that interpreting should only sometimes be used in the classroom, while 42% were of the opinion that it should and should not be used, respectively.

Only 17% of the students were of the opinion that interpreting could be a positive solution to language issues in the classroom. 33% were of the opinion that it should not be used in the classroom. 50% were of the opinion that it should only be used in some instances.

8. FINDINGS

The responses to the questionnaires varied significantly depending on the discipline and the nature of the courses taught. From the responses it appears that the students influenced one another concerning their thoughts on interpreting, as students in each class tended to respond in similar fashion.

With the exception of the first-year education students, the most cynical results were derived from students who studied towards a degree in Commerce (Organisational Psychology and Economics).

Some of these responses include:

> A multicultural setup will lead to conflict.
> Ek betaal my eie studiefooie, asook 'n gedeelte van die ander studente wat hier studeer. Ek het die reg om klas te hê in my eie taal. (I pay my own

tuition fees, as well as a part of the other students' who study here. I have the right to have class in my own language).

We like being in separate classes, do not put us together.

The interpreter speaks in a monotone voice.

The interpreter does not have a background knowledge of the subject.

The more buoyant results were derived from students who studied towards a degree with the emphasis on improving one's physical and emotional well-being. These modules include Theology and Optometry.

Some of the responses include:

Students should be in the same classroom.

Die tolke weet wat hulle doen (The interpreters know what they are doing).

Die tolke het 'n goeie kennis van die vak (The interpreters have good knowledge on the subject).

We can learn from each other.

Nou verstaan ek wat aangaan in die klas (Now I understand what is going on in class).

It was also established that many responses were politically laden, which hindered the findings to some extent, as students' preconceived notions of multilingualism and multiculturalism were set against the background of cultural segregation and fuelled by the inimical integration process of the residences on campus. This evidently influenced the responses of some students. This political undercurrent was especially prevalent among the Afrikaans-speaking Economics students. Once again, the undertone seemed lacking among the Theology and Optometry students, who indicated that they were grateful for the provision of interpreting services in integrated classrooms. What was notable was that the Afrikaans students who had no choice but to listen to an English lecturer were more open to interpreting than Afrikaans and English students in the 'integrated' classrooms.

9. Conclusion

The responses from students with regard to classroom interpreting at the UFS varied considerably and cannot conclusively act as decisive data for implementing or not implementing classroom interpreting. This was not the initial aim of the questionnaires, which was to merely determine the students' opinions on classroom interpreting. It was found that there was a strong political undertone from all sides. This supported the opinions *for* and *against* classroom interpreting. This political undertone often also governed the reason why various students chose to not utilise interpreting services. This could also be the reason for the students' bias against the quality of the interpreting despite the outcome of independent quality assessment (recordings) to the contrary.

Classroom interpreting can be a successful aid in the creation of integrated classroom settings at the UFS. The students' opinions regarding integrated classroom settings and the use of interpreting in creating such classrooms could prove to be minor

obstacles, since the importance of creating multicultural (and subsequently more enriching) learning environments should far override the desire of a small minority of students who erroneously are of the opinion that their culture is being threatened. The students' sense of being threatened can be approached and dealt with by means of various contingency plans. Despite the initial negative feedback, the value of multicultural education, however, should not be disregarded, as multicultural education is a well-acknowledged asset to tertiary educational settings. Consequently, it could be argued that, instead of shying away from classroom interpreting, students should rather be exposed to even more integrated classroom settings which will induce a more sanguine stance towards the use of interpreting in classrooms.

This will enforce the profit of multicultural classes with regard to creating constructive, interactive learning environments. Interpreting supports these environments by allowing the students to communicate in the language of their choice (English or Afrikaans). Therefore, by placing students in a racially integrated classroom setting, students are required to interrelate and hence learn from and teach one another.

Interpreting is an educational tool that can be utilised in classroom settings to overcome the continuous cultural non-communication currently taking place in classes at the University of the Free State. This does not only contribute to effective learning in the classroom by adding a cultural aspect to the learning process, but also gives weight to the facilitating role of tertiary institutions in a multicultural environment. Therefore, interpreting is a solution to language challenges in the classroom, as well as a successful aid in implementing integrated classes, but the students' attitudes will ultimately determine to what extent interpreting will prove a successful practical solution at the UFS. Far greater emphasis on the preparation of students in certain fields of study for the benefits of interpreting should therefore be considered to counter the negative political undertones that seem to currently counter the achievements of classroom interpreting.

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CSL as a scholarship of engagement: findings and recommendations

Arno van Niekerk
University of the Free State
niekerka.ekw@ufs.ac.za

1. INTRODUCTION

Community Service Learning (CSL) is playing a progressively more prominent role in student development, yet while still young in its evolution, ambiguity exists about the actual value it adds to students' tertiary learning experience. Hence the question: Should it gain complete recognition in higher education as a credible and effective method of learning and scholarly engagement? In attempting to answer this question, the paper's objective is to consider the theoretical roots of CSL and to analyse three CSL projects at the University of the Free State for greater clarity concerning the actual value which CSL can add to both students and community participants. The chapter is a literature study and includes analysis of primary data. A main finding is that CSL plays a significant role in facilitating holistic student development by effectively attaining a majority of the generic/critical learning outcomes proposed by the Departments of Basic Education and Higher Education and Training. Another key finding is that the community benefits from these projects.

In view of South Africa's (RSA) socio-economic needs, in particular, the increasing emphasis in higher education on engaging with the community has not only become particularly relevant to the country's progression, but also essential in advancing the interconnectivity of the (tertiary) spheres of teaching and research. In fact, service learning (SL) is increasingly recognised among institutions of higher learning worldwide as vital to enhancing the creativity of teaching and learning and opening up new opportunities for research (McCarthy and Tucker, 2002: 631). O'Brien (2005: 65) emphasises that international demands in higher education underscore the need for the recognition of different sources of knowledge and diverse styles of learning, as well as integrated, outcomes-based assessment – all of which are areas where SL can make a significant contribution. In having to legitimise themselves in view of increased demands for social engagement, accountability, relevant knowledge and challenges posed by South Africa's young democracy, higher education institutions are increasingly being asked to respond to the effects of globalisation and to realign their relationships with their communities. In its latest higher education policy the Department of Education (1997: 1) requires higher education institutions to promote "social responsibility and awareness amongst students of the role of higher education in social and economic development through community service programmes". Hence, pressure is exerted on institutions of higher learning to revisit their mission

statements and strategies in order to integrate their teaching and research priorities with the ideals of SL.

It should also be pointed out that service learning has been and continues to be the subject of much debate and deliberation. Although SL does not appear to require any rationale or justification – particularly due to it, assumingly, *only doing good* – it needs a great deal of explanation as critics have drawn attention to some valid concerns. They argue that SL is devoid of academic rigor; has a *thin* theoretical foundation and is riddled with ambiguity; is time-consuming (especially in light of the research and publication-demands on academic staff and the unjustifiable demands on students – not to mention the implications for student safety – and what is sacrificed in terms of academic work), thus putting academic staff in a difficult position as they cannot force students to cooperate (Kolenko *et al.*, 1996: 134; Roschelle *et al.*, 2000: 839). On the other hand, proponents of SL are convinced that the advantages completely outweigh the disadvantages. They argue that SL represents a *paradigm shift* in higher education because it enhances the role that students and communities can assume as constructors of knowledge; it provides students with the opportunity to acquire vital new knowledge, skills, and social competencies while providing services to distressed urban and rural communities; it combines community work with classroom instruction (emphasising reflection as well as action), and it is a pedagogy that fosters the development of skills and knowledge needed for participation in public life and the workplace (Bringle and Hatcher, 2007: 82; Barr and Tagg, 1995: 21; Clayton and Ash, 2004: 66; Reardon, 1998: 57; Speck, 2001: 4). The aim of this paper is to determine whether community service learning (CSL) can be considered a credible instrument of learning for students at higher education institutions by investigating the theoretical dimensions of CSL, and, at the hand of three projects that form part of courses presented at the University of the Free State (UFS), further examine this credibility issue. Key findings and recommendations are also advanced to help ground CSL as a mode of tertiary education to be fully recognised and integrated with teaching and research.

2. Theoretical framework of CSL: Conceptualisation and pedagogical delineation

According to Le Grange (2007: 11) "service learning is a philosophy, it is a form of inquiry, it is a pedagogy, and more". The term *service learning* was coined in 1967 and developed from the work of Robert Sigmon and Ramsey in the USA. In South Africa, as pointed out by Giles and Eyler (1994: 78), it is also recognised as *community service learning* and is viewed as a relatively new education phenomenon. The official definition of community service learning employed by the University of the Free State (2006: 10) is:

> it is an education approach involving curriculum-based, credit-bearing learning experiences in which students (a) participate in contextualised, well-structured and organised service activities aimed at addressing identified service needs in a community, and (b) reflect on the service experiences in order to gain a deeper understanding of the linkage between curriculum

content and community dynamics as well as achieve personal growth and a sense of social responsibility.

Accordingly, it requires a collaborative partnership context that enhances mutual, reciprocal teaching and learning among all members of the partnership (lecturers and students, members of the communities and representatives of the service sector). Erasmus (2005: 5) emphasises that CSL is linked to students' academic experience through related course materials and reflective activities. The primary focus is on integrating student learning and community development as it is believed that communities provide opportunities and experiences that enhance learning. Although used interchangeably (CSL and SL), CSL specifically represents the pedagogical approach whereby SL is integrated into students' learning programmes.

According to Kolenko *et al*. (1996: 135), service learning (and therefore CSL) is an inductive approach to education in direct contrast to the more traditional *information-assimilation model*. Learning by doing – as in the case of CSL – must be performed in combination with critical reflection on experience. The pedagogy underlying SL is firmly *based* on that of experiential learning as advanced in Kolb's (1984) model, which represents one of the most widely accepted approaches to understanding action-based individual learning. In Kolb's view, experiential learning is the process that links education, work and personal development. The power of CSL emerges as it expands the repertoire of *concrete* experiences necessary for the learner to develop as a manager. Contacts with the community at large form the basis of many new explanations, justifications and behavioural concepts (resulting from the world newly experienced) in the participating students and faculty. In fact, the learner is called upon to construct new concepts of reality and make adjustments to ineffective personal concepts and models of the past. As such CSL contributes significantly to holistic student development by not only creating *change agents* (the students), but also causing change in the agents themselves. However, in being more than mere experiential education, Kendall (1990: 89) emphasises that SL can be distinguished from experiential education in the following respects:

- it engages people in responsible and challenging actions for the common good;
- it is committed to programme participation by and with diverse populations;
- it articulates clear service and learning goals;
- it includes training, supervision, monitoring, support, recognition and evaluation to meet service and learning goals, and
- it provides structured opportunities for people to reflect critically on their service experience.

In essence, SL (and CSL) programmes differ from other approaches to experiential education by their intention to equally benefit the recipient and the provider of service as well as to ensure equal focus on both the service being provided (through teaching) and the learning that is occurring (Furco 1996: 51). Notably, as the venue increasingly shifts from institutional to community-based settings, the teaching methodology of SL provides a critical focus on intentional and systemic changes needed for the successful adjustment of courses/programmes. In addition, in terms

of experiential learning, a major new social science paradigm and methodology for social change has emerged, namely participatory action research (PAR), which is proving to be particularly complementary towards CSL. PAR is used to integrate the professional practices of the students with the everyday knowledge of the community members. Working in groups with community participants requires diverse means of communicating and accounts for *multiple realities* (Burnard, 1991: 25). PAR provides an essential research method for emphasising the different ways of knowing among student planners and community members. As Roakes and Norris-Tirrell (2000: 106) argue, it is a particularly useful strategy for SL because of the shared emphasis on affecting a social issue, problem, or need by the use of social science tools and methods. Hence, the interface between SL and PAR provides the opportunity to integrate the *local* knowledge of those most affected by a social issue with the *expert* knowledge of university (-trained) students to create innovative solutions to society's most intractable social problems. To this end it is clear that CSL has significant potential in contributing to community, not only from a teaching perspective, but also from a research perspective, and, importantly, *vice versa*.

As O'Brien (2005: 67) argues, CSL does not lack any theoretical foundation because as an approach to education, it is coherent with, if not the direct focus of, Dewey's philosophy of education for democracy and Boyer's *scholarship of engagement*, and as a pedagogy, it rests on theories of experiential learning (Kolb, 1984). However, although such philosophies and theoretical frameworks offer meaningful ideological and pedagogical justification for CSL, there remains the need to deepen the epistemological grounding of CSL to further develop a common understanding of what constitutes knowledge and how it is acquired as far as CSL is concerned. As Richman (1996: 5) states:

> the best defence of a pedagogy is also a defence of the account of knowledge and learning on which it is based. Only when such defence is available will a pedagogy be able to sustain legitimacy in the academy.

LEARNING ENVIRONMENT

Programme characteristics   Characteristics of the setting

Active learning   Resources
Authenticity   Behaviours
Connection to future   Values
Drawing on experience

Agency   Belonging
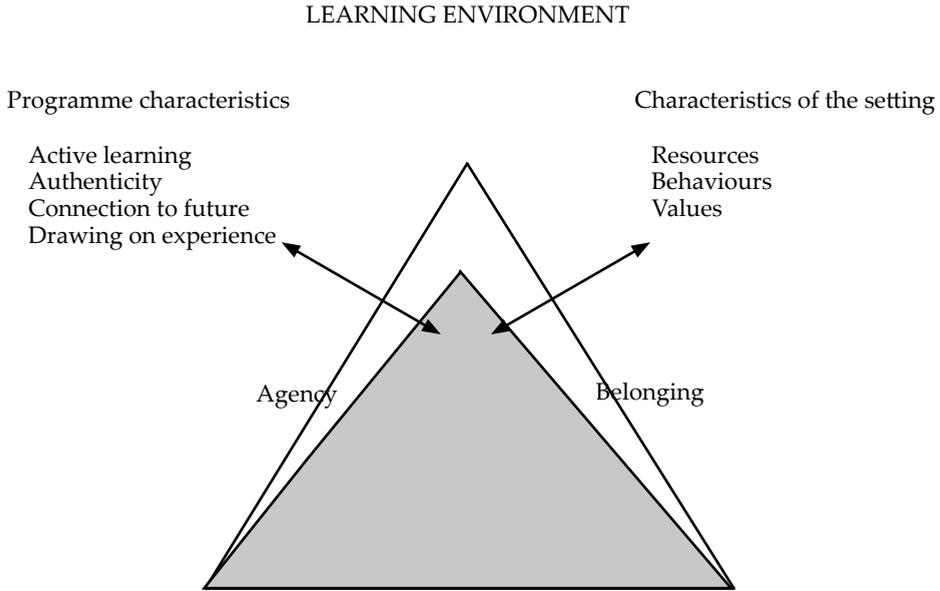
Figure 1: A conceptual framework for experiential education (Source: Carver, 2001: 147)

On the question of where exactly CSL fits into the paradigm of experiential education (e.g., their *roots*), there is no specific answer as it has multiple *sites* where its role(s) can be recognised – depending on the particular goals and outcomes of the CSL programme. As a framework for experiential education, Figure 1 illustrates the learning environment in which CSL can enhance student experience through *agency* (e.g. empowering them as change agents in the community and in their own lives, i.e. letting them recognise and appreciate their internal locus of control), *belonging* (e.g. by sharing mutual interests with the community (and their own group) such as human rights and responsibilities), and/or *competence* (e.g. cognitive, physical, musical and social (skills) competence development experienced by students). This ABC (Carver, 2001: 146) is then promoted by *programme characteristics* including active learning, authenticity (activities and consequences are understood by participants as relevant to their lives), connection to future (e.g. habits, memories, skills and knowledge being developed through their community experience that is useful to students in the future), and drawing on experience (e.g. students learn from what happened to them, their opinion, how they reacted, what resulted and what they observed). These are areas where CSL can make a significant contribution to the *characteristics of the setting*. In the latter's case, resources (e.g. trust, empathy, language, tradition and knowledge as well as money and physical resources), behaviours (e.g. identification, selection, distribution and use of resources) and values (as shared by participants that become guiding principles for behaviours mentioned above) are all areas that

are given opportunity in a CSL intervention to be shaped and formulated as a basis from which learning can take place.
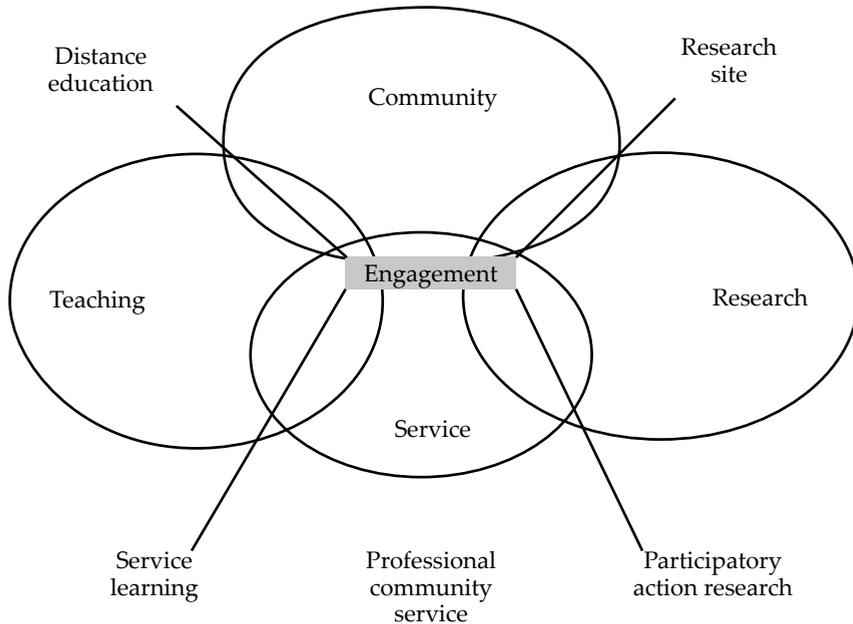
Figure 2: Social engagement of academic staff work in and with the community (Source: Bringle, 2005:183)

Finally, to emphasise CSL's role in the *linking* of experiential education and the community, Figure 2 illustrates the social engagement of faculty work in and with the community. Note that the emphasis in this instance is on doing CSL *with* the community – as partners – as opposed to doing it *for* the community. This is a very significant shift in emphasis on the part of CSL. In fact, it has become a basic requirement without which no mutually beneficial relationship can be established and synergies created. The values of reciprocity, democratic processes and community voice are fundamental aspects of social engagement (Bringle, 2005: 182). Figure 2 also illustrates the importance of, and opportunities for integrating the spheres of teaching, research and service by means of the central foci of engagement in and with the community. As Giles and Eyler (1994: 79) propose, in trying to discover the theoretical roots of SL one can follow the *tree logic*, that is, the logic of tracing and reproduction, which means that SL can be viewed as a map that is open and connectable in all of its dimensions; it is detachable, reversible and susceptible to constant modification and alternative possibilities.

3. EVALUATION OF THREE CSL PROJECTS PRESENTED AT THE UFS

As outlined in the subsections below, three CSL projects form part of courses presented in the Department of Economics, i.e. EKN314, GEB224 and ECO623. Figure 3 indicates the main focus areas of SL of each of the three CSL projects (there is also significant *cross-focus*). Each project will now be evaluated in terms of being recognised as a credible instrument of learning as well as its impact on community (engagement).
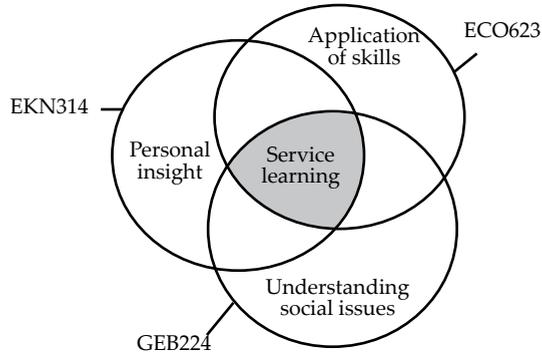
Figure 3: Service learning components and each project's main emphasis (Source: Adopted from Kolenko et al., 1996: 135)

PROJECT 1: EKN314 – INTERNATIONAL ECONOMICS (UNDERGRADUATE)

As part of the International Economics course for third-year students in the Faculty of Economic and Management Sciences (UFS), this project has been in operation from 2006 to 2008; it starts afresh each year in the first semester. For the purposes of evaluation, only 2008 will be investigated (as is the case with the other two projects) because it is the first year in which pre- and post-tests were used to make comparative assessments. For 2008 there were 123 student participants, with the modal age being 20, of whom more than half were male (55%). In terms of racial distribution 68% were African, 26% White, 5% Coloured and 1% Asian. Approximately 12% of the students worked full- or part-time. As shown in Appendix A, the CSL project counted a weight of 15% of the students' semester mark (the remainder is made up of another (non-CSL) assignment and two semester tests). Briefly, the students were expected to design a questionnaire based on key concepts relevant to International Economics, to serve as a pre- and post-test in determining community participants' knowledge about the subject. The pre-test was given to them before any concepts were explained, while the post-test was given after the students explained the concepts to them. Appendix A clarifies the detailed step-by-step process which the students had to follow – in group format. Regarding the contribution made by the students to the community's understanding of the subject of International Economics, Figure 4 illustrates that their post-tests were significantly better than their pre-tests – an overall improvement of approximately 60% (see also Table 1).
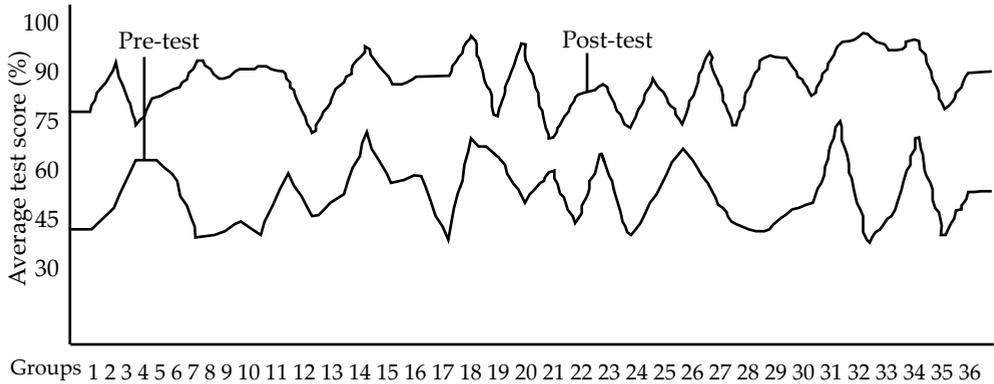
Figure 4: Pre- and post-test results for EKN314 (2008) (Source: Own contribution)

This CSL project was particularly successful in helping students – as they explained to those interviewed – to, simultaneously, develop a deeper understanding of relatively complicated concepts and interrelationships in the field of International Economics. As can be derived from Appendix A and as became evident in the Reflection (assessment) afterwards, the project also achieved a number of generic outcomes such as developing communication, problem-solving, as well as organisational and cooperative skills. Besides enhancing self-knowledge, it also helped students understand that the world is a set of related systems – something that is part and parcel of understanding the subject of International Economics. Hence, it appears that this project was successful in terms of both student development and making a meaningful contribution in the community.

Project 2: GEB224 – Money and Banking (undergraduate)

This project became part of the GEB224 Money and Banking course in 2007. The course focuses on financial instruments, institutions and markets, and presented an opportunity to focus – in terms of CSL – on potential low-income clients of the micro-finance industry (MFI). As outlined in Appendix B, this project had two main components. The students had to design a questionnaire comprising questions that tested low-income community members' knowledge about the MFI. Pre- and post-tests were used to compare different *target groups* (e.g. petrol tenants and vegetable sellers on sidewalks) that each student group had to identify. In addition, they had to do a short literature study on the MFI, and combine the two components. The 2008 project involved 117 student participants. The modal age was 19 and the majority (57%) were male. The racial composition was 53% African, 40% White, 4% Coloured and 3% Asian, of which six out of the 29 groups (or 21%) were racially mixed. Although still low, this figure was higher than that for EKN314's project, which was only 14%. Figure 5 indicates that the students made a considerable contribution to informing community members about the MFI, as their pre-test scores improved with, on average, 88% (see Table 1). In Figure 5's pie-charts, the average pre-test score

(for both *target groups* that each student group had to interview) was 40%, while the post-test score was 75%. The Reflection afterwards showed that this project helped students to engage with low-income individuals on a personal basis and gave them a better understanding of the challenges of poverty conditions. In terms of generic outcomes, it developed research, problem-solving, communication and groupwork skills, in particular. They also started to understand that problem-solving contexts do not exist in isolation and that they need to be *self-responsible*, i.e. to organise and manage themselves and their activities responsibly, effectively and according to high moral and ethical standards.
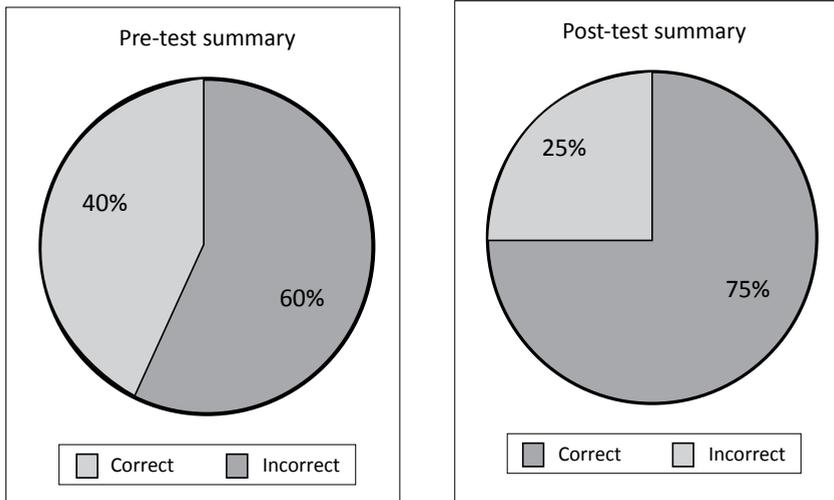
Figure 5: Pre- and post-test results for GEB224 (Source: Own contribution)

Project 3: ECO623 – International economics (postgraduate)

This second semester honours project was different from the previous two in that the students visited CommTech School in Rocklands (in Mangaung). The group of only 11 postgraduate students (in 2008) made a collective visit easier. Divided into three (racially mixed) groups, they worked with three large groups of grade eleven students who have Economics as a subject at the school. As Appendix C indicates, the university students were tasked to disseminate subject-specific knowledge in a creative way to stimulate the school learners' interest and knowledge about the field as well as the broader understanding of economics. The aim was to develop *economic literacy*. However, before working with the school learners, pre-tests covering specific topics in International Economics were written. Besides presenting and drawing graphs, the school learners were then invited to play *uniquely designed games* that illustrated to them, for instance, how transactions involving international trade, exchange rates and global investment work. A post-test was then completed. Figure 6 shows that a substantial contribution was made to school learners' understanding of International Economics as the average percentage improvement was 97% (see Table 1).
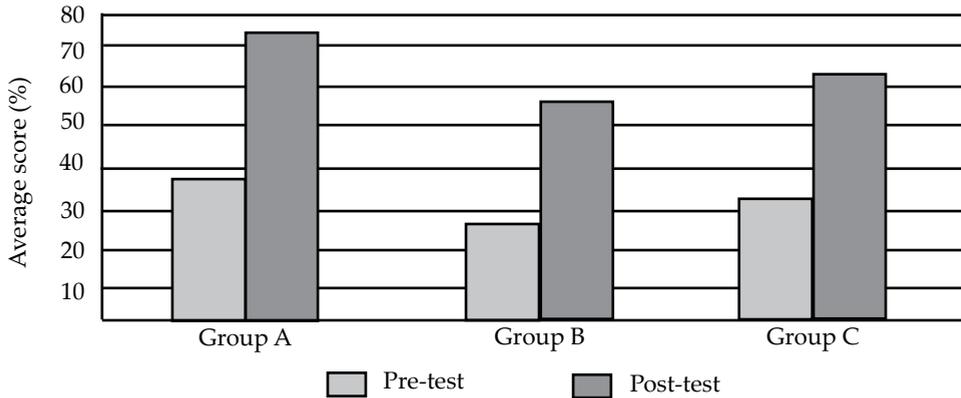
Figure 6: Pre- and post-test results for ECO623 (2008) (Source: Own contribution)

In helping them to apply some of their knowledge, the project empowered students with a sense of confidence about what they know about the field. As the Reflection has shown, value was further added by means of developing cooperative, communication, problem-solving, teaching, organisational and technology skills. A particular challenge they had to overcome was to continuously stimulate the school students' interest in economics. This they did with flying colours.

Table 1: Projects summary – overall averages (Source: Own contribution)

	Overall average scores (2008)			
Project	Pre-test results	Post-test results	% improvement	Total no. of students
EKN314	52%	83%	60%	123
GEB224	40%	75%	88%	117
ECO623	33%	65%	97%	11

4. FINDINGS AND RECOMMENDATIONS

A number of findings can be advanced concerning the projects and recognising CSL as a credible instrument of learning in higher education (McCarthy and Tucker, 2002: 633):

- CSL-projects provide a powerful option for academics/educators who are trying to imbue students with greater social responsibility (while student development takes place) for their own or their employer's (in the case of part-time students) actions.

- Combining lecture-guidance (re the CSL-projects), the projects themselves and reflective thinking afterwards have been very effective in shaping *change agents*.

- The students' perception about CSL became more positive as they realised that they are capable of helping others in need (cognitive response, activation phase)

and developed a responsibility for (affective response, activation phase) and have an empathetic experience with those they help (affective response, obligation phase). Noticing the new skills they were acquiring also motivated them.

▪ The three CSL-projects could be considered successful in that in all the cases at least ten out of the twelve generic/critical and developmental (including self-efficacy, writing, leadership and interpersonal skills) outcomes proposed by the Department of Education were achieved. In addition, the projects attained three key prerequisites – as proposed by Jacoby (1996: 21) – for a SL-project: (a) it should not merely be an add-on community project but a learning experience tied to the concepts of the course; (b) the service should be performed in a non-profit capacity that truly serves the community, and (c) structured time ought to be put aside for student reflection and linking the service experience to learning.

▪ From written information gathered from community participants by the students, as a response to the question "What did you learn today?", most participants could list at least four things that they learned from participating in a project. This contributed significantly to the success of each project.

▪ The emergence of SL and CSL has heightened attention to the nuances of the civic domain and social responsibility as a set of intentional educational objectives to be addressed seriously in higher education. Without suggesting that citizenship be reduced to service, SL needs to be better understood as a means for teaching towards civic learning objectives. In the South African context, in particular, civic outcomes have become inextricably tied to service learning pedagogy.

▪ The value of doing CSL projects in South Africa, in particular, is that it helps students not only to learn about problems such as lack of housing and sanitation, unemployment, shortage of water resources and diseases such as HIV/AIDS and tuberculosis, but also to educate them on how to help address such problems.

In addition, based on the theoretical investigation as well as the evaluation of the CSL projects, the study can, with the aim of enhancing the success of SL and CSL programmes, make the following key recommendations (Roschelle et al., 2000: 843; Astin *et al.*, 2000: 88; Bringle *et al.*, 2004: 211). With the CSL projects care must be taken to ensure that an *unequal partnership* with the community – i.e. the students being the helpers and the community participants being those helped – is not created (nor even a perception related to this).

▪ For PAR to be successful, reciprocal learning must take place in which local community knowledge is linked to university knowledge in order to arrive at innovative solutions to community problems and ensure that student development takes place.

▪ In the design of CSL interventions, community goals and priorities must also be considered to make the CSL projects not only more effective, but also more sensitive to specific cultural dynamics that are important to community participants.

▪ CSL projects should be specifically designed to assist students in making connections between the service experience and the academic material.

▪ Participation in and reflection about the CSL project should positively affect students' perception to enable them to help others in need and to learn valuable

lessons from cultures often different to their own. In addition, as part of the learning process, students should be given the opportunity to voice their opinions and be allowed to question the practices of staff and critically evaluate their own experiences. This will help them take ownership of their work.

▪ An important barrier to SL and CSL is academia, for instance having to balance publishing and teaching responsibilities, with the added pressure of CSL expectations at a time when such expectations are not clarified (or explicitly linked to promotion opportunities) and the SL pedagogy is riddled with ambiguity. Not only need academics be capacitated (as persons *and* professionals, Erasmus (2007: 112)) as regards venturing CSL projects; they also need to be compensated in terms of promotion credits to clarify expectations. It is important that the issue of ambiguity of SL be eradicated via more qualitative and quantitative research in the field.

5. Conclusion

The central finding of this paper is that CSL (as part of SL) ought to be fully recognised as a credible instrument of learning in higher education, based on three main reasons: (1) it facilitates holistic student development by attaining a majority of the generic/ critical outcomes; (2) it can make a quantifiable contribution to the community, and (3) it can, as a credible method of scholarly engagement, play a significant role in integrating research, teaching and service. As far as the latter is concerned, for too long the academy has been charged with not sufficiently *linking* the world of education with the real world; now SL presents the opportunity to combine classroom instruction with community engagement, and prepare students to participate in public life, thus integrating theory and practice to meet challenging social problems. As Ira Harkavey in Boyer (1994: 48) noted, "universities cannot afford to remain shores of affluence, self-importance and horticultural beauty at the edge of island seas of squalor, violence and despair". The CSL projects in this study have shown that the SL pedagogy can significantly increase students' cognitive understanding and awareness of community needs. Involving the participation of diverse role-players, CSL can indeed play a vital role in building knowledge cultures. For example, it also enhances the problem-solving capacities of community participants. As evidenced in the definition, the central intention of CSL is to ensure that academic study is integrated with the public life at large, generally conceived as life outside the classroom. Notably, the definition further represents a negative critique of traditional education as ineffective in fostering the skills and attitudes necessary for students to become active in solving social problems. If CSL is truly a way to involve higher education in real-world problem-solving, then the community must be an integral and active partner in these efforts.

Lastly, becoming a *SL champion* – that is, committed SL leadership with a desire to make a scholarly difference in the classroom – is fundamental to making a SL/CSL project a genuine success. To eventually inspire (and empower) change agents, academics wanting to become involved in SL must first become catalysts for change themselves. Ultimately the aim must be to build lifelong commitments to community service, with the fundamental value of reciprocal giving and receiving as the bottom line.

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Appendix A: Example of framework used for EKN314 CSL project

Project: Community Service Learning (CSL) & Groupwork

(Due date: Friday 21 March 2008   EKN314   [Weight: 15% of semester mark]

What?	You need to design a Test where you will try to determine how knowledgeable people (from your info) are about the field of International Economics. By selecting any 8 (or more if you want) terms from the list on your right, you will be able to ask questions to persons you have selected in a pre- and post-test. Their answers with regards to how familiar and educated they are about the concepts you have selected will serve as an indication of how well-informed and knowledgeable they are about International Economics. You decide what questions to ask. The amount of questions can range between 10 (min.) & 15 (max.). Then compare results.	<u>List of words related to International Economics</u> Globalisation Economic integration Economic cooperation Exchange rate International trade Foreign direct investment (FDI) Regionalisation TRIAD Developing countries Developed countries NEPAD Global village African marginalisation Opportunity costs Open economy Terms of trade Balance of payments Tariffs & quotas Export subsidy Economic union IMF & WTO

How?	**Step 1:** Select 4 or less fellow students	**Step 2:** Compile your Test by deciding what questions to include.

Why?	- To obtain marks - To make a difference in people's lives - To learn from other's experiences **NB**: - To develop skills you're going to use in the **workplace**: *- communication* *- problem-solving* *- to summarise info* *- being creative* *- design/formulate* *- talk to unknown people (like clients)* *- basic research skills*	**Step 3:** Select 10 or more interviewees and approach them. Have an interview with them by first asking them your questions (the pre-test, as per step 2). **Then** explain those terms to them which they don't yet understand and let them write a post-test (same as pre-).	**Step 4:** Ask the interviewee to then write a summary of what he/she has learned from the interview. If he/she has questions about international econ., try and answer them to the best of your ability. Make sure that the summary is not longer than half a page!

Criteria:	- Your group must not be bigger than 5 people. - Group/you must have <u>at least</u> 10 interviewees. - Draw up a <u>profile</u> of the interviewees, regarding - Age or age group - Male or female & name (anonymity allowed) - Education/qualification(s) - Occupation - Contact details (telephone no. & email) - Verdict: is he/she knowledgeable about International Economics, or not? Reasons? [Profile = 1/2 page per person typed]	**Step 5:** Compile the final document that you are going to hand in for marks. Be sure to include the <u>following</u>: * an example of test * pre- and post-test results * interviewees' profile * summaries written by those you interviewed.

Source: Own contribution

Appendix B: Example of framework used for GEB224 CSL project

C - S - L
~GEB 224~
Banking the unbanked

Form a group of 4 members

Divide up in half and decide on the distribution of the workload

½ of group

½ of group

Preparations: Study and visit various sources (books, articles, banks, post-office etc.) to find information about Mzansi-accounts, Ithala, FINCA, etc.

Preparations: Study and visit various sources (books, articles, banks, post-office etc.) to find information about Mzansi-accounts, Ithala, FINCA, etc.

REMEMBER: Constant communication between the two sub-groups is necessary.

The idea here is that this ½ of the group will do fieldwork and the combination-part.

REMEMBER: Constant communication between the two sub-groups is necessary.

The idea here is that this ½ of the group deals with the literature and also the fieldwork.

COMPENDIUM
1) Critical analysis and findings
2) Finalise document
3) Reflection

STEP 1:
Plan and do the fieldwork by going out to various microfinance institutions that are dealing with these kinds of accounts and low-income clients. Ask questions, get info.

STEP 1:
Read and study various books, articles and any other descriptive information on this topic. Do a short essay (literature study) of between 2 and 3 pages long.

STEP 2:
Decode the low-income target group that you are going to focus on (e.g. car-watchers). Ensure that you will find enough participants in this group (no less than 10).

STEP 2:
Decide on another low-income target group on which you two are going to focus on (e.g. vegetable sellers on street (about 10)) - to, later, compare the 2 target groups.

STEP 3:
Design a short questionnaire (5+ questions) with which to test the interviewee's knowledge of these accounts. Do a pre-test and a post-test and a %-improvement calculation.

STEP 3:
Use the same questionnaire that the other 2 group members have designed to test the interviewees' knowledge and also to explain the possible benefits of these accounts.

COMPILATION
Put all the feedback from the interviewees together and also make sure that you've got the following info from them (where possible): name and contact details; their income category; their experience.

½ of group

COMBINATION
One sub-group (left) compares the target groups; and all put together

AWARDING MARKS
60% for the fieldwork
40% for the essay

COMPILATION
Put the essay together neatly. Marks for this part (40%) of the assignment will be allocated as follows:
~ 70% for content
~ 20% for referencing and structure
~ 10% for visual layout and style

½ of group

Source: Own contribution

Appendix C: Example of framework used for ECO623 CSL project

International economics
ECO623

CSL

1.
Indentify focus area

Issues in International economies which you are a group feel you would like to teach the pupils about.

2.
Prepare presentation

Each group start preparing for their presentations at the school (start collecting ideas).

3.
Mini-presentations in class
Each group gets the opportunity to discuss the nature of its eventual presentation (i.e. their approach, content, type of acts) with others.

4.
Actual presentation and group act
Each (ECO623) group joins up with groups of pupils from the school. The group members start disseminating what International economy is, how it works and what it involves, e.g. intl trade, investment, globalisation.
Remember: pre- & post-tests

5.
Assessment
While each group is busy with the pupils, the lecturer will move between groups and observe what they do with the students. **NB**: participation by all members, creativity and efficiency. This will count 80% of the mark.

REFLECTION

6.
Feedback
Each pupil must ask the pupils in their group to provide written response on their whole learning experience. This will count 20% of your marks at the end.

Source: Own contribution

The UFS community service intervention on grade 12 science, mathematics and accounting: scholarship for teaching and learning

G. Alexander
University of the Free State
alexanderg@ufs.ac.za
M.M. van Wyk
University of the Free State
vanwykmm@ufs.ac.za
&
Molebatsi Milton Nkoane
University of the Free State
nkoanemm@ufs.ac.za

1. INTRODUCTION

The Chief Directorate Community Service at the University of the Free State (UFS) facilitates the development, integration and sustainability of teaching, learning and research within the context of community service learning. Through identified and co-funded key service delivery sites, such as the Manguang University Community Partnership Programme (MUCPP) and the Free State Rural Development Partnership Programme (FSRDPP) in the Free State and other provinces, the UFS and its partners oversee the implementation of various academic and community-driven developmental and capacity-building initiatives. These programme initiatives are activated through different levels and segments of community engagement (www.uovs.ac.za).

As a microcosm of the wider community it represents, the UFS is not isolated from the unprecedented process of transformation in South Africa. The UFS Policy on Community Service endorses three critical aspects of this transformation process as an institution of higher learning, namely increasing democratic participation; greater emphasis on development, and an increase in co-operative partnerships.

Within the wider socio-economic and political sphere, the UFS had to direct its community-orientated initiatives to the development goals (the enhancement of economic development and job creation; the provision and facilitation of sustainable infrastructural development; investment in human resource development; the promotion of a safe and secure environment; good/co-operative governance with sustainable use of resources and the environment) of the Free State province. In essence, initiatives embarked upon by the UFS need to be aligned to South Africa's broader skills and economic development, employment-generating and poverty reduction

priorities which are pre-empted by policies, such as the National Skills Development Strategy (NSDS) and Accelerated and Shared Growth Initiative (ASGISA).

The latter developments have forced the UFS to re-examine its stance and commitment to community engagement and development, especially as they relate to its immediate sites of delivery (MUCPP and FSRDPP).

In 2007, in response to its renewed agenda, the Chief Directorate Community Service rolled out its School Support Programme (SSP) with a special focus on whole school development and learner support. Under the auspices of the SSP, in 2008 the UFS Community Service Directorate forged a partnership with a local newspaper, the *Volksblad* – whence the formation of a joint initiative called the *UFS-Volksblad School Project*.

2. From community engagement to scholarship of engagement

The promulgation of the White Paper on Higher Education (1997) urged Higher Education Institutions (HEIs) to avail their expertise and infrastructure for community engagement programmes in the interests of demonstrating social responsibility and a commitment to the development of South African communities (CHE, 2006: 11). Waghid (2002) remarks on the increasing pressure on institutions of higher learning globally, including those in South Africa, to bridge the gap between higher education and society. According to Waghid, this could lead to active community partnerships which, in turn, might lead to "engaged institutions" that ought to support poverty-reduction initiatives.

In addition, HEIs have vigorously interrogated the notion of community engagement and made it one of the three silos, along with their other core functions of teaching and research. Community engagement ought to be inextricably linked to teaching and research, while becoming integrated into curricula activities. Accordingly, the terminology used for community engagement has shifted to *scholarship of engagement* (CHE, 2006: 11).

Fourie (2006: 13) is of the opinion that the term *community engagement* could refer to collaborations and partnerships between higher institutions of learning and appropriately constituted communities that it serves, aimed at building and exchanging in a two-way engagement whereby knowledge, skills, expertise and resources required to develop and sustain a developing society are made available.

According to Hudson, Craig and Hudson (2007), partnership development facilitates relationships between key stakeholders with the phases and dynamics of these relationships as focal points. Collaboration between institutions of higher learning and communities can generate new knowledge, especially when this interaction is focused on addressing issues in a collaborative participative manner – thus the argument would be that university engagement should be reinforced in a growing body of scholarly research endeavour that demonstrates its effective impact on

teaching, learning and community-based problem-solving (Brukardt, Holland, Percy and Zimper, 2004: 16; Willis, 2006: 2).

The establishment of "flagships" or key delivery sites for community engagement refers to establishing empowering "collaborative spaces" where staff, students and external participants can meet to engage in productive, multidisciplinary and multisectoral interaction, within an environment where at least some of the terms of engagement have already been negotiated and a high level of mutual trust been achieved (Fourie, 2006: 17). Quinlan, Corker and Roche (2008: 17) concur with the latter view and are of the opinion that multidisciplinary community engagement is best placed to initiate and facilitate interdisciplinary and transdisciplinary learning within established teaching and research collaborations. This process activates a scholarship of integration, making connections across disciplines, placing the specialisations within a larger context, illuminating data in a revealing way and often educating non-specialists. This, in turn, can allow students to respond to the increasingly complex issues facing contemporary society.

According to CHE (2006: 11), community engagement fulfils an essential function as it shapes and involves students and future citizenry in constructing knowledge that is most relevant and useful in the South African context. Community engagement is the combination and integration of teaching and learning (e.g. service learning), professional community service by academic staff and participatory action research endeavours specifically focused and directed to community development's needs and priorities.

Emanating from the above is the fact that community engagement is much more than community participation, community consultation, community service and community development. Scholars who define their work within a scholarship of engagement need to contextualise the work under the auspices of a service-learning pedagogy, community-based participatory research and public scholarship. This aspect could set powerful strategies in motion, thereby in a collaborative manner generating knowledge and practices to alleviate social problems affecting communities, especially those located in Africa (O' Brien, 2009: 29). Fourie (2006: 13) aptly demonstrates this point as follows:

> … community is shaped by the historical context of society, by the development and social context of South Africa and Africa. The development needs and challenges of the impoverished and marginalized people should play a crucial role in the engagement between universities and communities.

The promotion of this aspect could be enhanced by the concept of "scholarship of engagement" as unpacked by Boyer (1996: 11):

> … the academy must become a more vigorous partner in the search for answers to our most pressing social, civic, economic, and moral problems, and must reaffirm its historical commitment to what I call the scholarship of engagement.

Boyer argues that a new model of scholarship is needed. The scholarship of engagement is only possible if institutions of higher learning are to revitalise their proper mission as institutions of civic leadership and social engagement. This

model requires critical transformation within universities as they grapple with the ideological and functional complexities of society – that is, finding collaborative ways to address the social, civil, economic and moral dilemmas facing society (Quinlin, Corkery and Roche, 2008: 17).

Scholarship of engagement is a term that captures scholarship in the areas of teaching, research, and/or learning. Engagement as a scholarly agenda thus integrates communities' issues and challenges across teaching, research and service. Within the context of the UFS community service initiative (the UFS-*Volksblad* School Project), spearheaded by the Chief Directorate Community Service, community engagement is viewed as a scholarly activity in which a university's teaching and learning are integrated with research activities that involve the community as genuine partners.

3. Enhancing scholarship of teaching and learning (SoTL)

Kreber (2002: 18) remarks that SoLT is characterised by a relationship between research and teaching, the integration of existing knowledge by applying and exploring the best strategies for teaching it. In addition, scholars of teaching engage in focused reflection and/or self-regulated learning about teaching. Scholars of teaching not only teach well and demonstrate or share effective practices with colleagues but also know more about teaching. They effectively combine their knowledge of their discipline to construct pedagogical content and continuously further this knowledge through self-regulated learning processes. The validation of their knowledge through a peer-review process is critical to them. Concerning the latter sentiment, Kreber and Cranton (2000: 492) are of the opinion that the scholarship of teaching is about learning and the demonstration of that knowledge, while Glassick (2000: 879) and Barker (2004: 123) suggest that the SoLT becomes functional only if the work of scholars is made public, is available for peer review and produces knowledge for other scholars.

SoLT involves the systematic study of teaching and/or learning and the public sharing and review of such work by means of presentations or publications at local, regional, national and international levels. Within the domain of SoLT, there is a need for interdisciplinary collaboration. SoLT shares the established criteria in general, such as that the knowledge should be made public, be reviewed critically by peers and members of the appropriate community and be developed by others in the field (Shulman, 2000: 50; Kreber, 2002: 5).

Kreber and Cranton (2000: 476) and Barker (2004: 124) are of the opinion that the development of Scholarship in Teaching and Learning is a process comprising reflection on experience-based knowledge and research-based knowledge on teaching.

They outline four perspectives on SoTL, namely:

- Research on teaching and learning is viewed as one important aspect: knowledge on effective strategies to present subjects.

- Excellence in teaching: excellent teachers are identified by student ratings or peer reviews or by the recognition of teaching awards or outstanding evaluations of teaching.
- The application of educational theory and research to practice: practice is developed by a combination of reflection on theory and research and experience-based knowledge of teaching.
- The community engagement research initiative prevailed in a learner-centred environment. Grade 12 learners were constantly exposed to interactive, participatory learning experiences. Learners were afforded opportunities for peer and group work during teaching and learning sessions.

4. THEORETICAL FRAMEWORK

The dramatic changes in the South African education system and the subsequent challenges need to be addressed within the social context where they occur. The values, understanding and everyday operations of individuals (teachers, learners, parents, community, professionals, etc.) are difficult to grasp if they are isolated from their social milieu (Engelbrecht, Green, Naicker and Engelbrecht, 1999: 3-4). Landsberg (2005: 214) states that the different levels of the social system within the entire social context influence each other in a continuous process of dynamic balance, tension and interplay. The focus of the eco-systemic perspective, which evolved from a blend of ecological and systems theories, is to show how individuals and groups at different levels of the social context are linked in a dynamic, interdependent way with interacting relationships. These systems result in change, growth, development on physical, biological, psychological, social and cultural levels (Donald, Lazarus and Lolwana, 1997: 34). Shaffer (2002: 59) concurs with the view of the latter researchers and argues that the micro-systems within the eco-systemic perspective, present a system of activities, roles, and interpersonal relations experienced between individuals and the systems in which they actively participate, such as the family, school, peer groups and community-based organisations.

The role of institutions of higher learning with regard to community engagement, especially as they relate to schools and the education system, might be best realised if interactions and interrelated relationships between people, structures and different systems or levels are acknowledged as a point of departure. As unpacked by Fourie (2006: 13), development is central to interacting relationships as outlined by Bronfenbrenner's eco-systemic theory. A developmental-orientated higher institution requires a dynamic, interactive, reciprocal learning process among partners, communities, service sectors, staff and students. The enablement of such a partnership is based on improved constructive human development engagement within respective communities in order to better the quality of life of those concerned. This can only occur in an enabling, sustainable environment of mutuality and reciprocity, ensuring collective growth and development of all partners – thereby ensuring that the contribution by concerned communities is valued and acknowledged accordingly.

Challenges such as poverty, poor socio-economic conditions, the lack of resources, inadequate infrastructure and teacher training, inadequate literacy, numeracy and life skills among grade 12 learners impede the quality of prospective students wanting to enrol at the University of the Free State. We contend that the form of community engagement (UFS community service intervention on Grade 12 science, mathematics and accounting) we embarked upon by means of a scholarship for teaching and learning can be better understood within a holistic framework such as the eco-systemic approach.

5. Rationale for the project

The focus of the 2008 UFS community service intervention (UFS-*Volksblad* School Project) was informed by and is committed to the priorities (economic development, skills shortage, numeracy and financial literacy, etc.) of the Free State province as well as to the national mandate as they relate to scarce skills and skills development propagated by the National Skills Development Strategy (NSDS). In terms of scarce skills and skills development, the South African education system is facing a huge challenge because few grade 12 learners pass with excellent mathematics, physical science and accounting examination results (First National Bank Online, 2009: 3).

In addition, South Africa's first Outcomes-based National Curriculum Statement (NCS) grade 12 examinations in these subjects, introduced in November 2008, further exacerbated the need for a specially focused intervention. However, due to the legacy of apartheid and resource constraints, many public schools are severely challenged to meet the envisaged expectations set out in the Outcomes-based Education (OBE) curriculum (James, Naidoo and Benson, 2008: 1). In concurrence with the latter sentiment, Naicker (1999: 35) postulates that the advent of the first democratic elections in 1994 in South Africa saw wide-scale change and transformation throughout the country. The unification of 17 education departments into a single ministry of education was paramount in this change process. The most influential factor that caused the educational change was the introduction of Outcomes-based Education (OBE) in South Africa. The consequence of vast inequalities and marginalisation of blacks in the apartheid system to a great extent still impedes the provision of quality education to historically black schools. A study conducted in the North-West province of South Africa revealed that factors such as inadequate resources, the lack of learner discipline, poor educator morale, limited parental involvement and challenges relating to the interpretation and implementation of education policies are some of the causes of poor learner performance at grade 12 level (Van der Westhuizen, Mentz, Mosoge, Niewoudt, Steyn, Legotlo, Maaga and Sbego, 2002: 114). In relation to those mentioned, challenges such as poverty eradication, social transformation and economic empowerment also impede the delivery of quality public education (Carelse, 2008: 1).

The limited conceptual and content knowledge of teachers and their lack of skills in applying a range of pedagogical techniques contribute to low levels of learner achievement especially in the teaching of mathematics, physical science and

accounting (DoE, 2007: 5). Shrand, Jacobson and Christensen (1999: 3) echo the DoE's stance and are of the opinion that the poor grade 12 final examination results in South Africa indicate the crucial need for interventions to support these learners and their respective educators in improving the quality of their performance in these subjects. Nonyongo and Ngengebule (1998: 6) describe learner intervention as a coordinated attempt to support learners via the use of strategies to reduce the isolation of learners, facilitating effective learning, reducing attrition rates, increasing the success rates and generally improving the quality of education. Tunisia tops the competitiveness index in Africa according to the 2009 World Economic Forum report published in Cape Town, South Africa, by the African Development Bank (AfDB), the World Bank and the Global Economic Forum on competitiveness of the continent. The 2009 World Economic Forum ranked South Africa 34[th] out of 82 countries which participated in mathematics and physical science (afrol News, 2009).

Besides the unique UFS-*Volksblad* partnership intervention, other South African institutions of higher learning are also actively involved in mathematics and physical science community engagement initiatives. The University of Kwazulu-Natal's CASME (Centre for the Advancement of Science and Mathematics Education) programme focuses on in-service training, school-based support and the provision of resources to disadvantaged schools (James, Naidoo and Benson, 2008: 1). In addition, the University of Pretoria's Department of Mathematics and Applied Mathematics are involved in community-directed projects via short courses, competitions, olympiads, camps and the 'Up with Science' and 'Take a child to work' initiatives (www.web.up.ac.za).

Another dimension of the UFS community service intervention (UFS-*Volksblad* School Project) is the additional initiative for mathematics, physical science and accounting. In addition, the Community Service Directorate deemed it necessary and appropriate to provide 130 financially disadvantaged, yet academically capable, learners from selected schools in the Xariep (FSRDPP) and Motheo (MUCPP) education districts of the Free State province, an opportunity to participate in the UFS-*Volksblad* Spring School. These 130 learners' registration fees, travelling costs, meals and accommodation costs were sponsored by the Chief Directorate: Community Service. The 130 learners form part of the 244 learners who attended the UFS community service intervention (UFS-*Volksblad* School Project).

The research question

what was the impact of the UFS community service intervention (UFS-*Volksblad* School Project) on the quality of teaching and learning in mathematics, physical science and accounting?

Purpose of the study

this study investigates the impact of the UFS community service intervention (UFS-*Volksblad* School Project) on the quality of teaching and learning in accounting, mathematics and physical science.

6. Research design

A quantitative research design was used to determine learners' perceptions regarding the quality of teaching and learning at the UFS community service intervention (UFS-*Volksblad* School Project). Quantitative research is a positivist approach that uses theory as the starting-point of an investigation and focuses on positive facts and phenomena (Creswell, 2003: 2).

Sampling

Two hundred and forty-four grade 12 learners, registered for the Outcomes- based NCS certificate in specific gateway subjects (mathematics, physical science and accounting), enrolled for the UFS community service intervention (UFS-*Volksblad* School Project).

Research instruments

For the purpose of this research study, three questionnaires (mathematics, physical science and accounting) measuring learner perceptions regarding the quality of teaching and learning at the UFS community service intervention (UFS-*Volksblad* School Project) were employed. Each of the questionnaires for the respective subjects asked closed-ended questions pitched on a Likert scale with a continuum of 1 to 4 (1-Not at all covered/Strongly disagree; 2-Partially covered/Disagree; 3-Moderately covered/Agree; 4-Fully covered/Strongly agree). Question 1 measured the extent to which the specific contents areas for each subject (mathematics, physical science and accounting) had been covered. Questions 2 to 5 were generic in nature and measured learner perceptions of the quality of teaching and learning for each subject, respectively. Data was statistically analysed by applying the Statistical Package for Social Sciences (SPSS) software for data storage, and for the calculation of frequencies and percentages, as explained by Leedy and Ormrod (2001: 221-234). To test the reliability of the research results, Cronbach's alpha coefficient (α) was calculated for items in the three subject questionnaires. A calculated test for reliability showed that questions 2, 3 and 5 for mathematics teaching (α = 0.8071; 0.833 & 0.902), questions 2, 4 and 5 for physical science teaching (α = 0.8631; 0.911 & 0.892), and questions 3 and 4 for accounting teaching (α = 0.9901 & 0.895) were reliable items in the three subject questionnaires.

The setting and procedure for presentation of subjects

This scholarly research-based study was conducted in the Chief Directorate Community Service at the University of the Free State. The three subjects were presented in relatively large lecture rooms. Subjects were presented in parallel sessions of Afrikaans and English of two hours per session. The three subjects were allocated in the timetable over the five days. Experienced and highly performing subject educators were appointed to present lessons during the parallel sessions. Eight educators were also identified and appointed as supervisors for afternoon study sessions for learners at the hostels.

Data analysis procedure

The data analysis procedure included two main phases: the descriptive statistical data analysis and the qualitative data analysis. Regarding the descriptive data, SPSS software was used for data storage, and for the calculation of frequencies and percentages. In order to compare the 2008 June and November examination results, the following levels, prescribed by the DoE to distinguish between different levels of achievement, were used:

- Level 1 (0-29%) – not achieved;
- Level 2 (30-39%) – elementary achievement;
- Level 3 (40-49%) – moderate achievement;
- Level 4 (50-59%) – adequate achievement;
- Level 5 (60-69%) – substantial achievement;
- Level 6 (70-79%) – meritorious achievement, and
- Level 7 (80-100%) – outstanding achievement.

For the purpose of this research study, a comparison and analysis were made of the 244 learners' June and November examination results. This was conducted in the Chief Directorate, Community Service Learning, University of the Free State.

7. Results and discussion

Biographical data

The learners who attended the school resided in the five educational districts of the Free State province, namely the Motheo (N=110), Xhariep (N=60), Fezile Dabi (N=21), Lejweleputswa (N=38) and Thabo Mofutsanyane (N=15) education districts of FSDoE. The majority of the learners (45.2%) attending the UFS community service intervention (UFS-*Volksblad* School Project) reside in the Motheo education district, with only 6.1% of the learners from the Thabo Mofutsanyane education district. One hundred and seventy learners (69.6%) represented jointly the Motheo and Xhariep districts of the Free State province of South Africa. Regarding the attendance of learners from neighbouring provinces, the Northern Cape province was the best represented (18.4%), compared to the North-West (1.6%) and the Eastern Cape provinces (1.2%). In the absence of a university in the Northern Cape province, grade 12 learners from this province find the UFS accessible and financially affordable to attend from Bloemfontein.

8. Scholarly teaching and learning in three subjects

This section of the paper reports and discusses the results of the impact of the quality of scholarly teaching and learning in mathematics, physical science and accounting as a scholarship of engagement.

9. QUALITY OF TEACHING AND LEARNING

Question 1 required the learners to indicate how much different aspects improved the quality of teaching and learning in the three subjects. Table 1 indicates the results of respondents' views on the quality of teaching and learning in the three subjects.

Table 1: Enhancement of teaching and learning (N=244)

Question 1: To what extent did the aspects mentioned below enhance the quality of teaching and learning?		% = SD	% =D	% = A	% = SA
1.1	Subject activities helped me to achieve learning outcomes	-	5.0	56.6	38.2
1.2	Effective use of teaching media by teachers	8.0	12.7	38.2	41.1
1.3	Opportunities for application of theory	1.0	6.9	48.3	43.8
1.4	Encouragement of active learner participation	1.5	4.8	28.4	65.3
1.5	Adequate time to teach subject content	1.5	4.8	28.4	65.2
1.6	Subject guides were valuable learning aids	1.0	5.6	43.9	49.3
1.7	Subject guides were structured in a logical and systematic manner	1.8	8.1	41.9	48.1
1.8	Activities for subjects were clearly formulated	0.8	6.1	56.3	36.8
1.9	Assessment activities linked to subject content	0.3	4.2	47.7	47.9
1.10	Feedback by teachers helped me to improve on shortcomings in subject content	0.5	3.6	38.4	57.5
1.11	Teachers acquainted with learner guide content	0.3	2.3	32.5	64.9
1.12	Content areas clearly explained by teachers	2.3	4.4	35.1	60.3
1.13	Teachers used creative teaching methods	1.0	5.6	38.7	54.6
1.14	Teachers were enthusiastic and displayed willingness to teach	1.5	2.3	26.2	69.9

Based on the data gathered from Table 1, the majority of the learners believe that they experienced the overall enhancement of teaching and learning, as they relate to the 14 aspects covered, in a very positive manner. According to the respondents, the percentage that agree/strongly agree within each of the fourteen aspects indicates their inclination to the quality of lessons presented at the UFS community intervention school, viz:

▪ 1.1 Subject activities helped me to achieve learning outcomes (94.8 %);

- ▪ 1.2 Effective use of teaching media by teachers (79.3%);
- ▪ 1.3 Opportunities for application of theory (92.1%);
- ▪ 1.4 Encouragement of active learner participation (93.7%);
- ▪ 1.5 Adequate time to teach subject content (93.6%);
- ▪ 1.6 Subject guides were valuable learning aids (93.2%);
- ▪ 1.7 Subject guides were structured in a logical and systematic manner (90.0%);
- ▪ 1.8 Activities for subjects were clearly formulated (93.0%);
- ▪ 1.9 Assessment activities linked to subject content (95.5%);
- ▪ 1.10 Feedback by teachers helped me to improve on shortcomings with subject content (95.7%);
- ▪ 1.11 Teachers acquainted with learner guide content (97.3%);
- ▪ 1.12 Content areas clearly explained by teachers (95.3%);
- ▪ 1.13 Teachers used creative teaching methods (93.4%), and
- ▪ 1.14 Teachers were enthusiastic and displayed willingness to teach (95.4%).

Few respondents (20.7%) indicated that teachers did not use teaching media effectively in the classes.

10. Mathematics subject content covered

The purpose of Question 2 was to ascertain the extent to which the different content aspects were covered in the teaching of mathematics. Table 2 indicates the results of respondents' views on the different content aspects that were covered on the quality of teaching and learning in mathematics.

Table 2: Extent of content areas covered for mathematics (N=244)

Question 2: Indicate to what extent the following content aspects were covered in mathematics	Not covered (%)	Partially covered (%)	Moderately covered (%)	Fully covered (%)
1.1 Patterns and sequences		4.1	36.5	58.1
1.2 Annuities and finances	26.4	12.8	32.4	22.3
1.3 Functions and graphs	1.4	1.6	35.8	54.7
1.4 Algebra	1.4	8.8	20.3	37.8
1.5 Reminder and factor theorem	18.9	18.2	30.4	28.4
1.6 Calculus	4.1	7.4	32.4	54.1
1.7 Linear programming	35.1	19.6	20.9	19.6
1.8 Mensuration, volume and area	20.3	21.6	31.8	23.6
1.9 Analytical geometry	3.4	8.8	39.9	47.3
1.10 Transformations	14.9	6.8	33.1	44.6
1.11 Trigonometry	1.4	10.1	23.6	64.2
1.12 Data	43.9	12.8	20.9	12.8
1.13 Recursive sequences	28.4	14.9	20.3	11.5

1.14 Geometry	20.3	14.2	26.4	15.5
1.15 Descriptive statistics	38.5	14.2	16.2	4.7
1.16 Probability	42.6	12.2	13.5	4.1
1.17 Bivariate data	44.6	8.8	15.5	3.4
1.18 Regression lines	43.9	8.1	14.2	4.1
1.19 Correlation coefficient	41.2	6.8	17.6	6.1

According to Table 3, the majority of the learners indicated that the content areas of annuities and finances (32.4%), functions and graphs (35.8%), mensuration, volume and area (31.8%), analytical geometry (39.9%) and transformations (33.1%) were moderately covered. The following mathematics content areas were not covered by teachers: annuities and finances (26.4%); linear programming (35.1%); data (43.9%); recursive sequences (28.4%); patterns and sequences (58.1%), functions and graphs (54.7%), calculus (54.1%) and trigonometry, were fully covered. Descriptive statistics (38.5%); probability (42.6%); bivariate data (44.6%); regression lines (43.9%) and correlation coefficient (41.2 %) were not covered at all during the contact sessions.

The above-mentioned content areas which were not well or at all covered raised some concerns of some of the preparedness of appointed subject teachers (presenters) on the quality of the teaching and learning in the subject. Overloading the subject content areas to cover (19 items in all) over a two-day period compromised the quality of teaching. It is crucial that fewer content areas be considered by mathematics teachers. It should also be noted that the focus of UFS community intervention school was on revising specific content areas of mathematics. Decisions about what should be taught and learned are important in achieving lesson outcomes (Ntshoe, 1991: 221; Van Wyk, 2007).

11. Physical science subject content covered

The purpose of Question 2 was to ascertain how much of the contents were covered in the teaching of physical science. Table 3 indicates the results of respondents' views on the different aspects of the quality of teaching and learning of the contents of physical science that were covered.

Table 3: Extent of content areas covered for physical science (N=244)

Question 2: Indicate to what extent the following content aspects were covered in physical science	Not covered (%)	Partially covered (%)	Moderately covered (%)	Fully covered (%)
1.1 Mechanics	-	6.3	37.1	54.9
1.2 Questions on mechanics	0.6	10.3	44.6	42.3
1.3 Friction	4.0	13.7	38.3	40.6
1.4 Work, energy and power	0.6	9.7	37.1	51.4
1.4 The Doppler effect	32.0	5.7	18.9	42.3
1.5 Colour	35.0	12.0	21.7	29.7

1.6 Interference and diffraction	33.7	16.0	22.9	25.7
1.7 Electromagnetic radiation	28.0	18.9	33.7	17.1
1.8 Electrostatics	4.0	15.4	44.0	34.3
1.9 Capacitance	16.0	13.7	32.6	36.6
1.10 Chemistry	2.3	12.6	34.3	49.7
1.11 Equilibrium	2.9	9.7	36.0	51.4
1.13 Electrochemistry	4.6	14.9	38.9	37.1
1.14 Organic chemistry	17.7	2.3	17.7	60.0

According to Table 3, the majority of the learners indicated that the content areas for mechanics (54.9%); work, energy and power (51.4%) and equilibrium (51.4%) were fully covered. Content areas for mechanics (32.4%); questions on mechanics (44.6%); friction (38.3%); work, energy and power (37.1%); electromagnetic radiation (33.7%); electrostatics (44.0%); capacitance (32.6%); chemistry (34.3%); equilibrium (36.0%) and electrochemistry (38.9%) were moderately covered, according to the learners. The following content areas for physical science were not covered by teachers: the Doppler effect (32.0%); colour (35.0%); interference and diffraction (33.7%) and electromagnetic radiation (28.0%).

The above-mentioned content areas which were not covered are cause for concern. Overloaded subject content areas to cover (14 items in all) over a two-day period might have compromised the quality of teaching in physical science. It is crucial that fewer content areas be considered by physical science teachers when planning. According to Ntshoe (1991: 221) and Van Wyk (2007: 147) decisions about what should be taught and learned for a specific subject are important in achieving the lesson outcomes for that particular subject. It must also be noted that the UFS community service intervention (UFS-*Volksblad* School Project) focused on revising specific content areas of physical science.

12. ACCOUNTING SUBJECT CONTENT COVERED

The purpose of Question 2 was to ascertain how much of the different content aspects were covered in the teaching of accounting. Table 4 indicates the results of respondents' views on the different content aspects that were covered in accounting on the quality of teaching and learning.

Table 4: Extent of content areas covered for accounting (N=244)

Question 2: Indicate to what extent the following content aspects were covered in accounting	Not covered (%)	Partially covered (%)	Moderately covered (%)	Fully covered (%)
1.1 Guidelines for November examination	5.8	5.8	30.2	55.8
1.2 Companies	-	5.8	24.4	69.8
1.3 Analysis of financial statements	-	7.0	39.5	53.5
1.4 Resources allocation	9.3	7.0	44.2	32.6

| 1.5 VAT | 10.5 | 11.6 | 20.9 | 54.7 |
| 1.6 Exercise | - | 2.3 | 33.7 | 61.6 |

Based on the data in Table 4, the majority of the learners indicated that the content areas for companies (69.8%); the analysis of financial statements (53.5%); VAT (54.7%); guidelines for the November examination (55.8%) and exercises (61.6%) were fully covered. Content areas relating to analysis of financial statements (39.5%); resources allocation (44.2%); guidelines for November examination (30.2%) and exercises (33.7%) were moderately covered according to learners. The following accounting content areas were not covered by teachers: guidelines for November examination (5.85%); resources allocation (9.3%) and VAT (11.6%).

The above indicates that most content areas for accounting were adequately covered. Alexander (2004: 154) and Van Wyk (2007: 178) are of the opinion that decisions about what should be taught and learned for a specific subject are important in achieving the lesson outcomes for that particular subject.

The results in this section are promising in that they show that most of the learners found that the UFS community service intervention (UFS-*Volksblad* School Project) was effective and that the quality of learning and teaching was beneficial. There are still a few concerns regarding the content covered during the spring school. This should be addressed in order to improve the UFS community service intervention (UFS-*Volksblad* School Project) in the future.

13. Comparison of the results of the June and November 2008 Grade 12 NCS examination results

This section of the chapter outlines a comparison of the June and November 2008 examination results and reflects on learner performance on different levels of achievement in the three subjects. These results represent learners' performances (N=244) in mathematics, physical science and accounting.
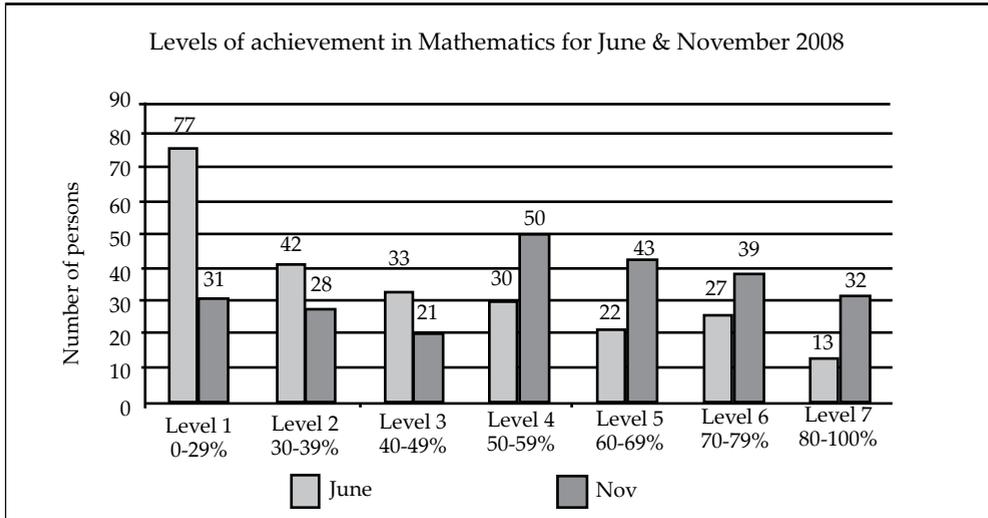
Figure 1: Levels of achievement in Mathematics (N=244)

In terms of the June examinations for mathematics in Figure 1, 77 learners achieved at level 1 (0-29). Forty-two (N=42) learners achieved at level 2 (30-39%) – elementary achievement. Thirty-three (N=33) learners showed moderate achievement at level 3 (40-49%). In terms of adequate achievement (50-59%), thirty (30) learners excelled at this level. The substantial achievement level (60-69%) represented 22 learners. Twenty- seven (N=27) learners showed meritorious achievement at level 6 (70-79%). Level 7 (80-100%) – outstanding achievement was represented by 13 learners. In terms of the November examinations for mathematics, 31 learners achieved at level 1 (0-29). Twenty-eight (N=28) learners achieved at level 2 (30-39%) – elementary achievement. Twenty-one (21) learners showed moderate achievement at level 3 (40-49%). In terms of adequate achievement at level 4 (50-59%), 50 learners excelled at this level. The substantial achievement level (60-69%) represented 43 learners. Thirty-nine (39) learners showed meritorious achievement at level 6 (70-79%). Level 7 (80-100%) – outstanding achievement, was represented by 32 learners.

As indicated, the *comparative gain score* for mathematics is 23%. For the June examination, a total of 77 learners (31.5%) showed achievement pitched at level 1 (not achieved). It can also be inferred from Figure 1 that 30 learners, representing 12.2% of the cumulative mathematics total, achieved below level 4 (50-59%). Achievement levels 5 to 7 represented only 62 (25.4%) learners. There was a significant decrease in the quality of achievement during the June examinations for mathematics.

The November examination indicated an increase in overall learner achievement. In relation to the June examination, 31 learners pitched at level 1 (not achieved) - this should be of great concern to the respective schools. Ninety-nine (99) learners achieved between levels 2-4. On an upward trend, levels 5-7 showed an increase in learner achievement. In comparison with the June examination for levels 5-7, a total of 114 learners (a 41% increase), progressed to these levels. A positive trend

was the significant increase in the number of learners at level 7 (80-100%) – nineteen learners more than the June examination's total of 13 learners. Overall, the November examination showed an improvement in the quality of mathematics results.

Levels of achievement in Physical Science for June & November 2008
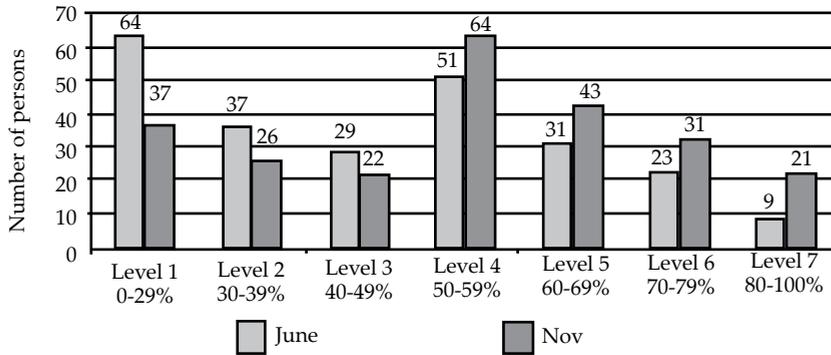
Figure 2: Levels of achievement in Physical Science (N=244)

In terms of the June examinations for physical science in Figure 2, 64 learners achieved at level 1 (0-29%). Thirty-seven learners achieved at level 2 (30-39%) – elementary achievement. Twenty-nine learners showed moderate achievement at level 3 (40-49%). In terms of the adequate achievement level (50-59%), 51 learners excelled at this level. The substantial achievement level (60-69%) represented 31 learners. Twenty-three learners showed meritorious achievement at level 6 (70-79%). Level 7 (80-100%) – outstanding achievement was represented by 9 learners.

In terms of the November examinations for physical science, 37 learners achieved at level 1 (0-29%). Twenty-six learners achieved at level 2 (30-39%) – elementary achievement. Twenty-two learners showed moderate achievement at level 3 (40-49%). In terms of adequate achievement at level 4 (50-59%), 64 learners excelled at this level. The substantial achievement level (60-69%) represented 43 learners. Thirty-one learners showed meritorious achievement at level 6 (70-79%). Level 7 (80-100%) – outstanding achievement was represented by 21 learners.

As indicated, the *comparative gain score for physical science is 18%*. For the June examination, a total of 64 learners (26.2%) showed achievement pitched at level 1 (not achieved). It can also be inferred from Figure 2 that 66 learners, representing 27% of the cumulative physical science total, had achieved between levels 2 (30-39%) – elementary achievement and level 3 (40-49%) – moderate achievement. Achievement levels 4 to 6 represented only 105 learners (43%). Of great concern, was that only 9 learners achieved at level 7.

The November examination indicated an increase in overall learner achievement. In relation to the June examination, 37 learners pitched at level 1 (not achieved) – this should be of great concern to the respective schools. Forty-eight learners (19.6%) achieved between levels 2-3. On an upward trend, levels 4-7 represented an increase

in learner achievement. In comparison to the June examination for levels 4-7, a total of 138 learners increased their achievement to these levels. A positive trend was the progression of 21 learners to level 7 (80-100%) in comparison with the June examination's total of 9. The November examination showed an improvement in the quality of physical science results.
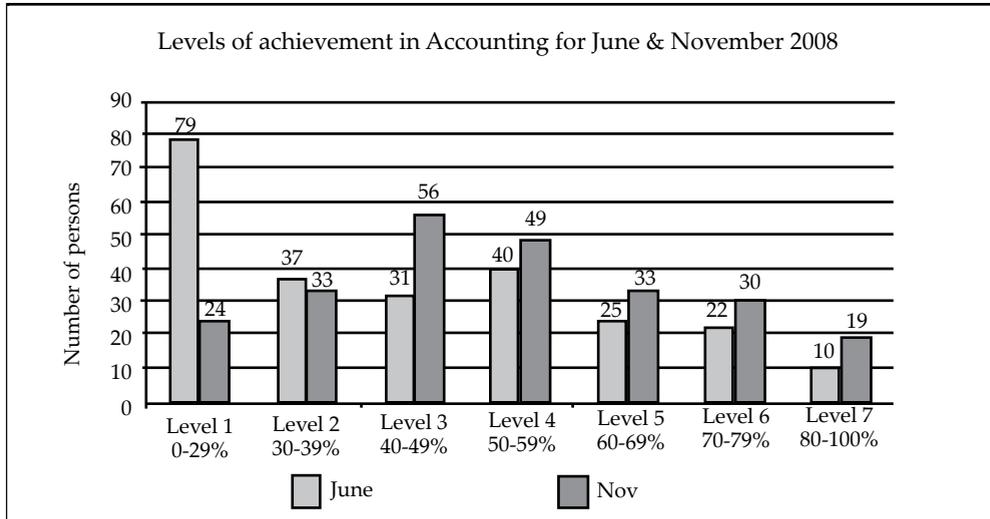
Figure 3: Levels of achievement in Accounting (N=244)

In terms of the June examinations for accounting in Figure 3, 79 learners achieved at level 1 (0-29%). Thirty-seven learners achieved at level 2 (30-39%) – elementary achievement. Thirty-one learners showed moderate achievement at level 3 (40-49 %). In terms of the adequate achievement at level 4 (50-59%), 40 learners excelled. The substantial achievement level (60-69%) represented 25 learners. Twenty-two learners showed meritorious achievement at level 6 (70-79%). Level 7 (80-100%) – outstanding achievement, was represented by 10 learners.

In terms of the November examinations for accounting, 24 learners achieved at level 1 (0-29%). Thirty-three learners achieved at level 2 (30-39%) – elementary achievement. Fifty-six learners showed moderate achievement at level 3 (40-49%). In terms of the adequate achievement at level 4 (50-59%), 49 learners excelled at this level. The substantial achievement level 5 (60-69%) represented 33 learners. Thirty learners showed meritorious achievement at level 6 (70-79%). Level 7 (80-100%) – outstanding achievement, was represented by 19 learners.

As indicated the *comparative gain score for accounting is 15%*. For the June exam, a total of 79 learners (32.3%) showed achievement pitched at level 1 (not achieved). It can also be inferred from Figure 3 that 108 learners, representing 44.2% of the cumulative accounting total, had achieved between at levels 2 (30-39%) – elementary achievement and level 4 (50-59%) – adequate achievement. Achievement levels 5 to 7, represented only 57 (23.3%) of learners. Of great concern, was that only 10 learners achieved at level 7.

The November examination indicated an increase in overall learner achievement. In relation to the June examination, 24 learners pitched at level 1 (not achieved) – this is should be of great concern to the respective schools. Eighty-nine learners (36.4%) achieved between levels 2-3. On an upward trend, levels 4-7 represented an increase in learner achievement. In comparison to the June examination for levels 4-7, a total of 131 learners increased their achievement to these levels. Thirty learners achieved at level 6 (70-79%) and level 7 (80-100%) – an increase in 26% in relation to the June examination. The November examination showed an overall improvement in the quality of accounting results.

14. CONCLUSION

The results of this study are encouraging and add to the body of information of other research studies in this regard (e.g., Boyer, 1996; Brookfield, 1995; McKinney, 2000; Kreber and Cranton, 2000; Mahlomaholo & Mathamela, 1998; Mahlomaholo and Sematle, 2004; Alexander and Van Wyk, 2009; Van Wyk, 2007; Waghid, 2002; O'Brien, 2009). Reflecting on the purpose and results of the empirical study, it is evident that the UFS community service intervention (UFS-*Volksblad* School Project) of 2008 has contributed significantly to the development goals of the Free State community. The findings revealed that the 244 learners who participated in the UFS community intervention have acquired valuable knowledge and skills through their engagement with mathematics, physical science and accounting teachers. These teachers ensured that the well-covered content areas per subject made a meaningful contribution to the quality of teaching and learning at the UFS community service intervention (UFS-*Volksblad* School Project). The results are promising in that the majority of the learners found that the UFS community service intervention (UFS-*Volksblad* School Project) was effective and that the quality of learning and teaching was beneficial. There are still few concerns regarding the content covered during the UFS community service intervention (UFS-*Volksblad* School Project). This should be addressed in order to improve the Project for the coming years.

15. RECOMMENDATIONS

UFS community intervention school organisers must devise a mechanism to attract more female participants to attend the school especially in the scarce subjects such as mathematics, physical science and accounting. The content aspects to be covered by teachers need to be streamlined in terms of the time frame allocated to each subject. Content aspects should be directed to address specific learner needs and problematic areas within a specific subject. This could serve to reduce content overload (in mathematics and physical science). The effective use of teaching methods for mathematics is to be encouraged. Of learner participants, 21.6% alluded to this aspect. Mathematics teachers should encourage learners to participate more during their sessions; 10.8% of the learner participants agree with this view. The mathematics learner guide should be appropriately compiled. This position is contended by 14.8% of the learner participants. The teaching media for physical science and accounting

should be more effectively used during teaching sessions. Learner participants for physical science (16.6%) and accounting (15.1%) alluded to this aspect. The use of more creative teaching and learning methods for accounting should be encouraged. In relation to the latter statement, 13.9% of the learners hold this view.

A concerted effort should be made by the UFS marketing units to do much more vigorous outreach of the UFS community school intervention initiative to the education districts of the Free State province that have had low attendance at the initiative, like Fazile Dabi, Thabo Mofutsanyane and Lejeweleputswana**.** Learners selected by schools to attend the Spring school should adhere to the criteria set by the UFS and *Volksblad*. Principals, teachers and parents of children at selected schools should motivate learners to prepare thoroughly for the June examinations. Relevant stakeholders should make learners aim to achieve at higher levels, especially for the June examinations. The subsequent application for admission to UFS, bursary opportunities, career counselling, UFS programme marketing and effective study skills should also fit into a more holistic approach to the UFS-Spring school intervention initiative.

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<div align="center">

CHAPTER 19

Economic responsiveness in
organisational psychology curricula

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Roelf van Niekerk
University of the Free State
vniekerkr.hum@ufs.ac.za
&
Jo-Anne Vorster
CHERTL, Rhodes University
j.vorster@ru.ac.za

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1. INTRODUCTION

Internationally, the higher education (HE) sector has undergone drastic and rapid change over the past two decades. This change process is still underway and adjustments and forms of contestation are expected to continue (Moore and Lewis, 2004). Change confronts HE with practical (e.g. access, participation, competition, quality assurance) and philosophical (e.g. determining the relative importance of constructs such as academic freedom, academic community, accountability, and marketisation) challenges. This also has a considerable impact on the relationships between HE and its stakeholders, such as the government, work environment, students, other HE institutions, and business (Barnett, 2004b).

Over the past two decades South Africa witnessed a fundamental transformation of its HE infrastructure, values, and purposes. The changes that accompanied the political transition required a complete overhaul of policies, structures and strategies. This turned out to be a resource- and labour-intensive task. Five years ago Badat (2004: 238) cautioned that local institutions experienced a "demand overload" because they have to cope with a "vast array of varied and differing national goals and imperatives, policy initiatives, market pressures, public expectations and institutional stakeholder demands".

2. PURPOSES OF HIGHER EDUCATION

The change processes highlighted several ambiguities relating to the purposes of HE. HE institutions are complex entities and therefore pursue multiple purposes (Macozoma, 2002; Moore and Lewis, 2004) that "sometimes stand in a relationship of intractable tension, especially where they are pursued simultaneously" (CHE, 2004: 239). Traditionally, the primary purpose of HE was the development of intellectual competencies, such as the pursuit of conceptual knowledge, critical thinking and critical action (Badat, 2004; Barnett, 1997). More recently, this intellectual purpose has increasingly been in competition with social and economic purposes. Volbrecht

and Boughey (2004: 58) referred to the tension between "the need to respond to global economic developments and the need to address the more local concerns of social reconstruction and equity". Similarly, Badat and Wolpe (cited in Sayed 2001: 255) referred to this contradictory challenge as an "equity/development tension".

Singh (2001) stated that certain characteristics of the South African society (i.e., pervasive change, poverty, inequality, and the fragility characteristic of young democracies) highlight the importance of Higher Education's social purpose. This purpose includes social justice (Singh, 2001), critical citizenry (CHE, 2004; Singh, 2001), democracy and equity (Volbrecht and Boughey, 2004) as well as social development (CHE, 2004; Moore and Lewis, 2004; Moya, 2004; Singh, 2001). Social purposes require the government to be responsive to the will of the people and "deliver a more just and humane society in a climate of rising expectations and hopeful promise" (Sayed, 2001: 255).

The argument for the economic purpose of HE insists that HE contributes to the growth and development needs of the economy through the training of competent graduates who are able to meet local, regional, national and international requirements. In this regard, Kruss (2002) highlighted changes in the labour market that require graduates to be flexible, adaptable, capable of rapid learning, and prepared for regular periods of retraining. The economic purposes of HE are also emphasised by globalisation that exercises a profound influence on HE. Due to globalisation, the structure of HE institutions has become more open, responsive, and competitive (Kruss, 2002; Moya, 2004; Young, 2001b). To engage effectively with globalisation and participate competitively in the global economy, HE institutions have to cope with market-like conditions and are consequently challenged to produce, through research, teaching and learning, a knowledgeable, competent, and competitive workforce (Badat, 2004; Cloete and Maassen, 2002; Macun, 2001; Young, 2001a). This challenge contributed to the increasing *marketisation* of the HE (CHE, 2002) and a form of *managerialism* (Asmal, 2002) that emerged as a result of attempts to enhance the efficiency and effectiveness of institutions. Over the past decade, governments have increasingly emphasised the economic role of education and exerted pressure on institutions to improve their performance, focus on human resource development, and become more accountable, marketable and responsive (CHE, 2002; Young and Kraak, 2001).

3. Curriculum responsiveness

Curriculum responsiveness influences the traditional functions of HE including teaching, learning, research, and community engagement (CHE, 2004). Several factors contributed to the recent foregrounding of curriculum responsiveness in HE, including policy, legislative, structural and strategic changes necessitated by demands for increased and broadened access to HE, changed student and institutional profiles, increased emphasis on improved efficiencies in graduate outputs, as well as the demands placed on HE by a global 21[st] century knowledge society (CHE, 2004; Dowling and Seepe, 2003; Ekong and Cloete, 1997; Gamble, 2003; Griessel, 2004).

4. Emergence of curriculum responsiveness

Locally, the notion of responsiveness has formed part of HE policy since 1996 when the National Commission of Higher Education (NCHE) was established. The NCHE added momentum to the newly elected government's HE policy revision process. From the outset, the NCHE argued that greater responsiveness was needed to ensure that HE engaged with the challenges of its social context (NCHE, 1996). The NCHE envisaged that a responsiveness agenda would require academic and research programmes to be aligned with the knowledge needs of both civil society and the marketplace. Consequently, the Centre for Higher Education Transformation (CHET), a non-governmental agency, initiated a colloquium entitled *Curriculum responses to a changing national and global environment in an African context*. At this colloquium Ekong and Cloete (1997) introduced the term curriculum responsiveness to the local curriculum transformation debate. They and other presenters such as Bawa (1997), Kraak (1997), Muller (1997) and Scott (1997) emphasised the importance of broad participation and stakeholder consultation. Following the colloquium, curriculum responsiveness was incorporated into several HE policy documents (e.g. DoE, 1997a, 1997b and 1999; CHE, 2000; DoE, 2001; DoE and DoL, 2001). It also began to feature prominently during HE debates and colloquia (CDE, 1998 and 2000; CHE, 2002a; South African Universities Vice-Chancellors Association, 2004).

At the turn of the century, the Council on Higher Education (CHE) noted that the competency requirements in the work environment were changing and that employers increasingly expressed dissatisfaction with the performance of graduates. The CHE responded to this concern by organising a colloquium to discuss the findings of these projects (CHE, 2002a). This colloquium brought leaders from the public and private sectors, labour movement, civil society and HE together. At the colloquium the CHE emphasised the increased importance of building "relationships between higher education and the public and private sectors to advance South Africa's economic and social development through the production of appropriate knowledge and high-level personpower" (CHE, 2002a: i).

Although Moll (2004) described curriculum responsiveness as a South African idea, it is not only relevant to the South African situation. According to Unwin (2003), responsiveness emerged in the further education contexts of the United Kingdom and Australia in the early 1990s. This occurred in response to the global demand that education and training should become responsive to the needs of society, industry and government and should contribute to social and economic growth (Kruss, 2002). This demand also prompted governments to play an important role in facilitating relationships between business and HE. In this regard Brown, Blake, Brennan, and Bjarnason (2002) identified forums in several countries that aimed at facilitating communication between industry and HE (e.g., Australia: Business Higher Education Round Table; Canada: Corporate and Higher Education Forum; Japan: Business-University Forum; *UK:* Council for Industry and Higher Education; USA: Business-Higher Education Forum*)*.

Although the notion of curriculum responsiveness enjoys considerable national and international support, it remains a contested issue in the HE context (SAUVCA,

2004). Bundy (2006: 12) referred to the debate on responsiveness as a "profoundly ambiguous brief", while Unwin (2003: 11) called it an "attitudinal revolution". The White Paper (DoE, 1997a: 40) acknowledged the controversy much earlier and therefore proposed a "broad and thick", multi-faceted notion of the responsiveness of HE (see also Singh, 2001).

Despite the pervasive influence of curriculum responsiveness, "[t]he concept has little theoretical depth in regard to what object or objects of study it refers and what kinds of relationships to other concepts it implies" (Moll, 2004: 8). The colloquia, policies and studies reviewed above emphasised the need for a more articulate conceptualisation of curriculum responsiveness. Moll (2004) responded to this need by formulating a more comprehensive theoretical conceptualisation of curriculum responsiveness. Similarly, authors such as Dowling and Seepe (2003) as well as Gamble (2003) explored curriculum responsiveness in more systematic terms in their work focusing on universities and further education and training (FET), respectively.

Their contributions were complemented by several noteworthy studies published at that time, including Brown et al. (2002), Griesel (2002), Kruss (2002), and Moore (2004). The study by Brown *et al*. (2002) reviewed the relationships between business and HE in eight countries (Australia, Canada, Hungary, India, Malaysia, Mexico, UK and the USA). The study found that governments potentially play important roles in facilitating such relationships, especially in terms of persuading academics to consider the employability of graduates. The authors concluded that close relationships between business and HE are a prerequisite for sustainable wealth creation. Griesel (2002) investigated employer satisfaction with the competencies of the graduates who qualified at the University of KwaZulu-Natal. She found that employers consistently rate the importance of competencies higher than their satisfaction with graduates' demonstration of the same competencies. Kruss (2002) investigated the expectation that HE should become more responsive to socio-economic demands in South Africa. She accessed the expectations of five distinct constituencies, namely the public and private sectors, professional associations, as well as representatives from SETAs, and public and private HE institutions. Her study differentiated the objectives of the public sector (i.e. national economic and social development, an emphasis on scarce skills, and redressing inequalities of the past) and the private sector (i.e. global competitiveness, the knowledge economy, and an emphasis on high-level skills). Kruss (2002) concluded that the two sectors recognise each other's demands and ultimately operate from the same core model of responsiveness. Moore (2004) investigated responsiveness at postgraduate level, especially relating to programmes directly concerned with the work environment. His study explored the dynamics of curriculum responsiveness as found in one of South Africa's leading business schools. Moore's study demonstrated that different groups make different curriculum claims and that this generates tensions which, in turn, present a considerable challenge for curriculum management in HE contexts.

5. LEVELS OF CURRICULUM RESPONSIVENESS

Moll (2004) differentiated four levels of curriculum responsiveness, namely cultural/ institutional responsiveness, disciplinary responsiveness, learning responsiveness, and economic responsiveness. He emphasised that the levels are differentiated for analytic purposes only, that they are related and in tension with each other, and that they can only be adequately understood if all four levels are engaged simultaneously.

Moll's (2004) conceptualisation made no reference to social or community responsiveness. However, these levels of responsiveness also feature in recent literature and are therefore included in this instance. Social/community responsiveness suggests that HE institutions are responsible for fostering in academics and students a sense of social responsibility, active citizenship, a commitment to the social good as well as service to the community, tolerance, and non-discrimination (Asmal, 2002; CHE, 2002a; Favish, 2005; Hall, 2004; McGrath, 2003; Moya, 2004). Cultural/institutional responsiveness acknowledges that learners from different cultural groups present with distinctive heritages, experiences, perspectives, and styles, and that these differences should be accommodated and validated by curricula (Gay, 2000; Moll, 2004). According to Moll (2004: 7), disciplinary responsiveness refers to curricula that are responsive to underlying knowledge disciplines and ensure "a close coupling between the way in which knowledge is produced and the way students are educated and trained in the discipline area". Learning responsiveness requires systematic consideration of the following: students' needs, interests, resistances and development; the content, methods and contexts of learning and teaching, as well as creative ways of assisting learners to learn (Moll, 2004). Economic responsiveness refers to labour market responsiveness and emphasises the production of practical skills. In essence, economic responsiveness suggests that HE institutions must effectively train sufficient qualified personnel in each key sector of the economy (Moll, 2004).

This study focused only on economic responsiveness, not because this level is more important, but rather because it is a complex undertaking to investigate different levels of responsiveness in the same study. Economic responsiveness is particularly relevant to professional disciplines such as IOP.

6. ECONOMIC RESPONSIVENESS

Economic responsiveness gained considerable prominence at policy level in recent years, both locally and internationally. Singh (2001: 11) believes that economic responsiveness is functioning as a "powerful and influential paradigm" that is shaping policies and practices in many developed and developing countries. Essentially, economic responsiveness refers to responsiveness to the labour market (i.e. industry, government, service sector, informal sector) and emphasises the role of HE in the development of work-related skills. The notion of responsiveness is based on a three-way relationship between HE, government, and business (or, the economy) (CHE, 2004); a relationship that is referred to as a "triple helix" relationship (CHE, 2004: 161). Singh (2001) associates economic responsiveness with a range of terms, including efficiency, economic survival, competitiveness, economic growth,

and vocationalism. According to Moll (2004), economic responsiveness suggests that HE must not only produce sufficient numbers of qualified personnel in each key sector of the economy, but must also provide the market with the human resources capable of increasing the economic competitiveness of organisations.

7. Emergence of economic responsiveness

The literature highlights pertinent reasons for the emergence of economic responsiveness. The first reason relates to the relationship between HE and the work environment. For some time now representatives from both the public and private sectors have questioned the training and qualifications of graduates, as well as their international competitiveness (Badat, 2004; CDE, 2000). Griesel (2002: 39) also commented on "the pervasive view that higher education does not produce the right kinds of graduates to meet changing workplace demands". In an era of increasing institutional accountability and relevance, HE institutions should expect higher demands for graduates with the desired skills and attitudes for work (Singh, 2001; Unwin, 2003). Similarly, HE institutions are increasingly required to demonstrate their ability to produce top quality students (Asmal and Kahn, 2000).

The second reason for the recent emergence of economic responsiveness relates to the relationship between HE and the economy. The notion of economic responsiveness has emerged at least partly because of public policy debate about the relationship between HE and economic change. According to some, HE is increasingly perceived as an economic resource, while knowledge and information processing are increasingly viewed as a means to promote economic capacity and to act as driving forces for wealth creation (DoE, 2001). Consequently, as producer and disseminator of sophisticated knowledge, HE is regarded as a key stakeholder for the production of knowledgeable, directly employable, and internationally competitive employees ready to contribute to economic development (Badat, 2004; CHE, 2004; Griesel, 2002; Kruss, 2002; Moll, 2004; Singh, 2001; Unwin, 2003).

The third reason relates to the two curriculum discourses (i.e., neo-conservative traditionalism and neo-liberalism) that have shaped the discursive terrain over the past two decades. Considerable tension exists between these two particular discourses and it is expected that they will continue to challenge each other and further contribute to the ambiguity surrounding curriculum and economic responsiveness debates. Proponents of neo-conservative traditionalism view education as an end in itself. In other words, its proponents emphasise general, rather than specialist or vocational knowledge and promote teaching that focuses on "the best that has been thought and known in the world current everywhere" (Arnold, cited in Moore and Young, 2001: 449-450). This approach to teaching favours a format emphasising respect for the traditional norms, principles (canons), and curricula of subject disciplines. On the other hand, neo-liberalism (also known as *technical instrumentalism* or *economic rationalism*) emerged in the late 1980s and is widely regarded as the dominant globalisation ideology (Badat, 2004; McGrath, 2003). Over the past two decades proponents of neo-liberalism asserted reform pressures on most sectors of society,

including HE (Maassen and Cloete, 2002). In this instance, it challenged the existing relationships between governments, societies and universities throughout the world (Jansen, 2004). Globalisation contributed to the criticism of HE as irrelevant, not producing employable graduates, and not responding to the needs of the economy. This criticism foregrounded the neo-liberal discourse that actually represents an economically driven process of educational restructuring (Kraak, 2001).

The criticism faced by the neo-liberal discourse revolves around four issues. First, it is not the ideal discourse for achieving the goals of political and economic reconstruction and development (Badat, 2004; DoE, 1997a). Secondly, it tends to disregard the social networks and codes of practice that promote trust in knowledge production activities. This may lead to training that is impoverished and narrow. Therefore, it elicits doubts about academic standards and the integrity of learning processes (McGrath, 2003; Moore and Young, 2001). Thirdly, the connective aspect associated with the technical instrumentalist discourse may unintentionally diminish the role HE institutions must play as critics of social or economic institutions, policies or practices (Barnett, 2004b). Fourthly, it tends to exaggerate the prevalence of high skills jobs and disregards the balance between high and low skill jobs that are still prevalent in most societies (Young, 2001b).

Although there is considerable resistance against the neo-liberal discourse, there is also substantial support for it. Consequently, many HE institutions have yielded to the pressure exercised by the technical instrumentalist discourse and have increasingly become corporate universities that are engaging actively with the business world (Barnett, 2004b). Although the neo-liberal perspective is flawed, it underpins the economic responsiveness discourse and thus has significance for this study.

8. PERSPECTIVES ON ECONOMIC RESPONSIVENESS

The relationship between HE and the labour market is a complex, controversial, and contested one. Naturally, some welcome the closer ties between industry and HE, while others express apprehension and oppose such a relationship (CHE, 2002a). For example, the CHE (2004) acknowledges that the importance of economically responsive HE institutions is increasingly being recognised by the most knowledgeable, wealthy and socially equitable societies. In addition, the CHE (2004) recognises that graduate competencies and relevant research are critical enablers of equity, democracy and development.

By contrast, several authors expressed concern about attempts to match the traditional functions of HE with the competency requirements of the labour market. Five concerns are pertinent in this instance. First, there is much uncertainty about the diverse conceptualisations of responsiveness, the degree of responsiveness that would be deemed appropriate or ideal, the targets of responsiveness (e.g. national economic and social development, global competitiveness, or narrow vocationalism), as well as the methodology required to implement or practice responsiveness (Griesel, 2002; Kruss, 2002; Moll, 2004). Secondly, Kruss (2002) cautioned that the bias toward labour

market considerations might accentuate existing educational and social inequalities and dilute the influence of political, intellectual, moral, and cultural dimensions.

Thirdly, responsiveness may have a negative effect on knowledge production at HE institutions especially in the case of disciplines that are not considered to be immediately relevant (Muller, 2001). Disciplines are diverse. Some are more career-oriented, while others are discipline-based or formative. A related concern about responsiveness is that it may have negative side-effects for researchers and research institutions. It may inadvertently lead to an overestimation of commercially relevant research at the expense of basic and fundamental (so-called *blue-sky*) research (CHE, 2002b; Favish, 2005).

Fifthly, the capacity of HE institutions to respond to ER policies may be exaggerated (McGrath, 2003). Responsiveness requires flexible HE institutions, support from the government, as well as accurate data about the labour market. In the absence of the required data (or if data about labour market requirements is ambiguous and diffuse), the success of institutions in being responsive to the market may be limited.

The above review suggests that two positions frame the debate on responsiveness. On the one hand, there are convincing arguments for the economic necessity of a close relationship between HE and the labour market. On the other, the counterarguments suggest that HE should remain loyal to its primary educational mission and traditional roles, and guard against inappropriately prioritising relationships with some stakeholders (Kruss, 2002). It is expected that responsiveness will continue to be contested by different stakeholders. Therefore academics will have to remain prepared to simultaneously pursue multiple objectives and engage in balancing acts and trade-offs (Asmal, 2002; Badat, 2004; Favish, 2005; Unwin, 2003).

9. Industrial and organisational psychology

This study investigates a topic at the intersection of two contexts, namely curriculum responsiveness and the field of IOP. The latter involves the application of methods, principles, strategies, and policies to the functioning of individuals, groups, and organisations in work environments (Society for Industrial and Organizational Psychology, n.d.).

Internationally, IOP had its origins approximately a century ago when psychologists in the United States began applying their understanding of human behaviour to solve problems at work (Barnard and Fourie, 2007b). In South Africa, the history of IOP can be traced back to World War II. During the war, the discipline focused on the assessment of soldiers and workers, often for selection and placement purposes. Since its inception, IOP has grown at a remarkable rate in South Africa. It is currently taught at 14 South African universities (Guest and Kriek, 2008). Over the past six decades the discipline evolved into two broad disciplines, namely HR management (or personnel psychology) and organisational psychology (Campbell, 2002).

Debates regarding the roles and contributions of IOP graduates have been ongoing for some time. Internationally there have been efforts to standardise education

and training in Psychology, but these efforts did not result in consensus among professional organisations or training institutions. In this regard Benjamin (2006: 59) concluded that "the core curriculum problem continually haunts the field of psychology". A review of the IOP undergraduate and honours curricula presented by ten universities in South Africa demonstrated clearly that a core curriculum is absent (see Table 1). Five or more of the departments present only nine out of a total of 35 modules (i.e. 26%). This means that less than half the departments offer each of the remaining 26 modules. On average, every module is presented by less than three of the ten departments (average = 2.7). This suggests that academic departments are not guided by shared principles and guidelines when they implement decisions about the content or sequencing of curriculum content.

Table 1: Undergraduate industrial-organisational psychology curricula

	CT	FS	JHB	KZN	UP	US	WC	UNISA	WITS	RU
Employee relations	X	X	X	X	X	X	X		X	X
Organisational psychology	X	X	X	X		X	X	X	X	X
Career psychology		X	X	X		X	X	X		X
Research / Statistical analysis	X	X	X	X			X	X	X	
Assessment / Evaluation / Measurement		X	X			X	X	X		X
HRD / Training and development		X	X		X	X	X	X		
HRM / Personnel psychology		X	X		X	X	X	X		
Consumer psychology			X			X	X	X		X
Ergonomics			X	X		X	X	X		
Health and wellbeing in the workplace	X			X					X	X
HR provisioning / Recruitment and selection			X		X					
Individual differences [and work performance] [diversity in the workplace]								X		X
Organisational development				X				X		
Organisational learning	X			X						
Organisational process (individual, group, organisational)				X				X		

	CT	FS	JHB	KZN	UP	US	WC	UNISA	WITS	RU
Organisational theory				X						X
Principles of individual and group behaviour								X	X	
Customer service in tourism								X		
Environmental psychology								X		
Forensic IOP								X		
HR planning					X					
HR strategies and policies					X					
HR utilisation and maintenance		X								
Negotiation and conflict resolution							X			
Organisational change	X									
Organisational design and resourcing	X									
Organisational effectiveness									X	
Performance development								X		
Personality in work context								X		
Psychology at work				X						
Psychological adjustment in work context								X		
Social psychology and intergroup relations	X									
Thinking about business	X									
Work group dynamics and diversity								X		
Workplace practices										X

A similar review of the key areas of professional specialisation listed by six national professional organisations produced comparable results (see Table 2). The six organisations represent the interests of IOP practitioners and the public in the following countries: Australia (APS), Canada (CSIOP), New Zealand (NZPS), South Africa (SIOPSA), the United Kingdom (BPS), and the United States (SIOP). In total, these organisations endorse 38 specialisation areas, fourteen of which are listed by only one of the professional organisations. By contrast, two areas *(Performance management* and *Training)* are listed by all six professional organisations. Four or more of the

professional organisations list twelve of the 38 areas. This suggests that professional organisations also tend to disagree about the core areas of specialisation.

Table 2: Areas of specialisation endorsed by professional organisations

Specialisation areas	SIOPSA [South Africa]	SIOP [USA]	CSIOP [Canada]	BPS [United Kingdom]	APS	NZPS [New
Performance management	X	X	X	X	X	X
Training	X	X	X	X	X	X
Career development / management		X	X	X	X	X
Consumer behaviour / Marketing	X	X	X		X	X
Human performance / Human factors / Ergonomics	X	X	X	X		X
Recruitment, selection and placement		X	X	X	X	X
Research methods / Statistical methods	X	X	X	X	X	
Assessment / Psychological measurement	X	X	X		X	
Ethical, legal and professional issues	X	X	X		X	
Job analysis, evaluation, classification and redesign		X	X		X	X
Organisational development / Change management		X	X	X	X	
Organisational health, wellness, and safety		X		X	X	X
Attitude theory, measurement and change		X	X		X	
Employee relations		X		X		X
Group theory / Team processes	X	X	X			
Motivation and reward systems / Compensation and benefits		X	X	X		
Organisational theory / Psychology / Behaviour		X	X			X
Programme design and evaluation	X		X		X	
Counselling and personal development	X			X		

Specialisation areas	SIOPSA [South Africa]	SIOP [USA]	CSIOP [Canada]	BPS [United Kingdom]	APS	NZPS [New
Criterion theory and development		X	X			
Data analysis / Statistical methods		X	X			
Intervention	X	X				
Judgement and decision-making		X	X			
Supervision	X	X				
Communication					X	
Consultation		X				
Decision theory			X			
Discipline knowledge					X	
Advisory and advocacy regarding workplace issues					X	
Fields of psychology			X			
History and systems of psychology			X			
Influence and change					X	
Leadership and management		X				
Planning technical and organisational change						X
Policy development	X					
Problem solving					X	
Professional development		X				
Service implementation					X	

The failure of academic departments and professional organisations to reach consensus motivated several South African authors to explore the identity and roles associated with this discipline and profession (Augustyn, 1982; Barnard and Fourie, 2007a and 2007b; Moalusi, 2001; Pienaar and Roodt, 2001; Schreuder, 2001; Veldsman, 2001; Venter and Barkhuizen, 2005; Watkins, 2001). They identified considerable confusion and uncertainty regarding the core of IOP as well as current or future areas of professional application. Barnard and Fourie (2007b: 53) concluded that a need exists "for further endeavours to clarify the roles and contributions of industrial psychologists in South Africa in a visionary and creative manner".

10. Research method

Research aims

Three considerations prompted this study. First, reviews of IOP curricula offered at South African universities as well as areas of specialisation endorsed by international professional organisations revealed limited overlap. This suggests that the discipline and profession of IOP are not guided by shared or core principles and guidelines. Secondly, a range of policy documents (e.g. DoE, 1997a and 1997b; CHE, 2000; DoE, 2001; DoE and DoL, 2001) urge academics to design curricula that are relevant and responsive to contemporary conditions. Obviously such curriculum design and transformation activities should be preceded by labour market analyses during which emerging competency requirements are identified (Badat, 2004; Macun, 2001). Thirdly, the literature highlights the importance of the changing competency requirements specified by the labour market (Asmal, 2002; Macozoma, 2002; Moya, 2004), the needs of external stakeholders (Badat, 2004; Moore, 2004), and the alignment of curricula with the knowledge and skills needs of a changing economy (DoE, 1997a). These considerations motivated the investigation of the following question: What occupational categories and key performance areas (KPAs) do employers specify when they advertise positions suitable for IOP graduates?

Research design

Following Durrheim's (2006) explication, the research design of this study can be described in terms of five characteristics. The design is: qualitative (employing content analysis to identify and describe occupational categories and KPAs in job advertisements); naturalistic (characterised by non-manipulative, unobtrusive, non-reactive and non-controlling methodology); descriptive (aiming at the identification of occupational categories and KPAs); applied (contributing towards practical or applied issues), and strategic (solving or reducing problems through a series of research activities).

Data collection, processing and analysis

This study collected and analysed documentary data. The data source was job advertisements placed in a Sunday newspaper (*Sunday Times*). Newspaper advertisements are the most obvious method of attracting job applicants (Armstrong, 1996; Byars and Rue, 2000; Gerber, 1998; Swanepoel, Erasmus, Van Wyk and Schenk, 2000). The data was analysed by means of the documentary analysis method (Fouché, 2005) that entails the analysis of the content (i.e. words, meanings, themes) of public documents (e.g., letters, speeches, reports, or advertisements). Credibility, transferability, dependability, and confirmability considerations were addressed by following appropriate sampling (purposive sampling strategy), data collection (large number of advertisements from a single data source), data processing and data analysis procedures (careful identification of advertisements that met the inclusion criterion; compilation of detailed descriptions and tables).

11. Findings and discussion

A total number of 1115 advertisements were sampled from 52 editions of the *Sunday Times* and subjected to data processing and analysis. Of the 1115 advertisements, 745 (67%) represented organisations from the public sector, 308 (28%) represented organisations from the private sector, and 62 (5%) represented HE institutions. The average number of advertisements that appeared each week was 21. The number of advertisements reflects a substantial demand for IOP graduates, especially in the public sector.

Occupational categories

The data analysis identified 21 *primary occupational categories* (primary refers to the occupational category included in the title of the advertisement, e.g., *Recruitment and Selection Officer*). Considerable overlap occurred between some occupational categories. This implies that some advertisements aimed at recruiting graduates for a specific primary occupational category also require expertise associated with other occupational categories (the latter categories are referred to as *secondary occupational categories*).

The categories where considerable overlap occurs are *HR Administration and Management, HR Development* and *Organisational Development.* On the other hand, no overlap occurs between some categories, for example *Career Management, Consulting, Employment equity,* and *Research.* In this instance, the required expertise is only associated with the primary occupational category and does not overlap with the KPA requirements of other occupational categories. Table 3 summarises the distribution of advertisements across the 21 occupational categories (both primary and secondary).

Table 3: Number of advertisements per occupational categories

Occupational category	Number of advertisements: primary occupational category	Number of advertisements: secondary occupational categories	Total
HR Development	205	154	359
HR Administration and Management	317	23	340
Employee Relations	128	144	272
Recruitment and Selection	52	175	227
Performance Management	42	160	202
Research	5	191	196
Organisational Development	92	97	189
HR Information Systems	25	106	131
HR Planning	48	74	122
Remuneration	25	86	111
Career Management	23	86	109

Occupational category	Number of advertisements: primary occupational category	Number of advertisements: secondary occupational categories	Total
Organisational Health, Safety and Wellness	24	68	92
Consulting	35	0	35
Work Study	27	0	27
Employee Equity	7	18	25
Lecturing	22	0	22
Employee Assistance Programme	17	1	18
Assessment and Evaluation	9	2	11
Quality Assurance	7	1	8
Industrial / Organisational Psychology	4	0	4
Consumer Psychology	1	0	1
	N = 1115	N = 1386	N = 2501

As far as the number of advertisements per primary occupational category is concerned, Table 3 indicates that three categories are dominant, namely HR *administration and management, HR development* and *employee relations*. Together, these three categories represent 58% of all advertisements. The individual contributions of the three categories are 28%, 18% and 12%, respectively. Similarly, the top 11 categories represent 89% of all advertisements. These findings suggest that the demand for jobs in different occupational categories is unevenly distributed. Jobs in some categories are clearly in high demand, while the demand for jobs in other categories is much less.

The findings indicate that many advertisements aimed at recruiting IOP graduates were from five occupational categories: *HR Administration and Management, HR Development, Employee Relations, Organisational Development,* and *Recruitment and Selection*. In addition, the findings indicate that although the demand for individuals specialising in some primary occupational categories (e.g., *Performance Management*) is relatively small, they are required as additional KPA requirements by many other occupational categories (e.g., *HR Development*). The findings suggest considerable demand for the following secondary occupational categories: *Research, Performance Management, HR Information Systems, Remuneration, Career Management, HR Planning,* and *Organisational Health, Safety and Wellness*. It can therefore be concluded that the labour market currently demands expertise associated with the 12 occupational categories mentioned above. This implies that curricula should – at minimum – include these occupational categories.

By contrast, the findings suggest that there is a very small demand in the labour market for the following sub-disciplines: *Consumer Psychology, Quality Assurance, Assessment and Evaluation,* and *Employee Assistance Programmes.* IOP departments should therefore reconsider their inclusion in IOP curricula. Although the number of

advertisements for professionally registered Industrial/Organisational Psychologists appears in the second lowest position, this finding should not be accepted at face value. It is unlikely that organisations or consultancy firms who wish to employ professionally registered Industrial/Organisational Psychologists will employ newspaper advertisements as recruitment strategy.

The absence of one IOP sub-discipline from Table 3 deserves further comment. Not a single advertisement aimed at recruiting *Ergonomics* expertise appeared in the newspaper over a 52-week period. Yet, this occupational category is presented as a separate module by at least five academic departments (see Table 2). The findings of this study suggest that the demand for this occupational category is much lower than suggested by these departments. This finding confirms the findings of Pienaar and Roodt (2001) as well as those of Barnard and Fourie (2007a) who expressed serious reservations about this subdiscipline's status as current or future area of application for IOP graduates.

This distribution pattern of the advertisements (see Table 3) supports the trend of some departments to offer IOP in HR management departments. In terms of advertisements aimed at recruiting IOP graduates, expertise traditionally associated with HR management (*HR Administration and Management, HR Development, HR Information Systems, HR Planning*, as well as *Recruitment and Selection*) clearly represents the dominant requirement.

12. KPA clusters

The analysis of the 1115 advertisements resulted in the identification of 4070 KPAs that were later reduced to 84 KPA clusters. Table 4 presents a summary of these KPA clusters and their frequency ratings.

Table 4: KPA clusters

KPA	f	KPA	f
Operational management of function	467	Induction	18
Advisory service	405	Work study functional tasks	17
Communication and liaison	318	Alignment	16
Policy	287	Competency frameworks	16
Reporting	246	EAP functional tasks	16
Compliance	214	Transformation	16
Monitoring and evaluation	166	Strategic career management	15
HR development functional tasks	161	Organisational development consulting	14
Training	97	Remuneration	13
HR administration and management functional tasks	96	Evaluations	12
Organisational design	85	Generic consulting	12

KPA	f	KPA	f
Strategic HR management	80	Post establishments	12
Strategic organisational development	71	Psychometric assessment	10
Conditions of service	61	Skills Development Facilitator (SDF)	10
Conflict resolution	61	Advocacy	9
Needs assessment	55	Counselling services	9
Employee relations functional tasks	55	Performance agreements	7
HR development administration	51	Community engagement	6
Discipline	47	Development of academic dept	6
Job analysis / Evaluation / Profiling	47	Quality assurance functional tasks	6
Change management	46	Curriculum development	5
Workplace skills plan	46	Incentives	5
Bargaining structures	45	Management and leadership development	5
Representation	44	Research functional tasks	5
Case management	41	Surveys	5
HR planning functional tasks	41	Workforce planning	5
Project management	39	Accreditation	4
Performance management functional tasks	37	Auxiliary services	4
Employee relations analyses	33	Service level agreements	4
HR planning analyses	33	Corporate social investment programmes	3
Benchmarking	31	Performance management administration	3
Recruitment and selection functional tasks	31	Professional engagement	3
Secretariat support	26	Employment equity functional tasks	3
Database	25	Assessment of learning	2
Investigations	25	Economic empowerment	2
HR consulting	24	Identification of critical positions and individuals	2
Organisational health, safety and wellness functional tasks	24	Ad hoc HR projects	1
Assessment and development centres	22	Information and communication technology (ICT)	1
HR info systems functional tasks	22	Information management	1
Organisational diagnosis	20	Publications	1
Teaching	20	SETA	1
Career management functional tasks	19	Sexual harassment	1
TOTAL			4070

The findings on the incidence and distribution of KPA clusters indicate that the following 15 themes are currently in high demand. This implies that IOP graduates should be prepared during their academic studies to manage units/departments; offer functional and professional advice; communicate and establish networks; formulate, review and implement policy frameworks; formulate reports; ensure compliance with employment practices; monitor and evaluate systems and processes; implement HR development strategies; plan, develop, present and evaluate training; execute human resource development, administration, management functional tasks as well as strategic plans; plan, conduct, manage, and evaluate training; manage organisational design projects; administer and manage conditions of service; and resolve conflict.

13. Conclusion

Currently, HE is in a state of flux. It faces many challenges and pursues a range of equally important and often competing purposes. Curriculum responsiveness is a complex issue and its implementation requires a balanced approach and sensitivity to a range of issues, including economic, societal and academic considerations. Attempts to transform IOP as an academic and professional discipline should therefore incorporate the views of a range of stakeholders representing academic departments, professional organisations, as well as organisations in the private and public sectors. This study represents the first step towards adapting current IOP curricula to explicit market-driven requirements. The logical next step would be to investigate the responsiveness of curricula offered by specific IOP academic departments.

The implementation of economic responsiveness is a challenging undertaking. The alignment of academic programmes with labour market requirements requires the development of a sound understanding of constantly changing labour market trends; the acquisition of accurate and comprehensive information; the establishment and maintenance of close links with business and industry; consensus on graduate profiles that portray the competencies demanded by the labour market, and academic creativity that facilitates the development of new programmes using modern teaching and learning technologies.

The current study focused primarily on one level of responsiveness, namely economic responsiveness. It is recommended that similar studies be conducted to investigate the responsiveness of specific IOP curricula in terms of social/community, cultural/institutional, disciplinary, and learning responsiveness. Thereafter, the responsiveness of curricula offered by other academic disciplines could also be investigated. The careers sections of newspapers advertise a multitude of jobs representing a wide range of disciplines and represent an extensive data resource. HE policies urge representatives of all disciplines to investigate and promote the responsiveness of curricula.

Lastly, the job advertisements collected for this study typically include sections focusing on KPAs, requirements (e.g., qualifications), and recommendations (e.g., experience). In the current study, only the KPAs were analysed. The additional

analyses of requirements and recommendations will complement the findings of this study and provide a more complete record of current labour market requirements.

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CHAPTER 20

The nature of learning styles of students and their implications for learning in Botswana

Almon Shumba
Central University of Technology, Free State
ashumb@cut.ac.za & almonshumba@yahoo.com

1. INTRODUCTION

Research available on learning styles shows that teachers do not often take into account the individual student's learning styles during the learning process. The learning styles of the teacher and their students are the cornerstone of the learning or teaching process because they determine how well students will learn in schools and institutions of higher learning. This study seeks to determine the nature of learning styles used by undergraduate students, and their implications for learning and teaching in Botswana schools and institutions of higher learning. The study sample comprised 57 Postgraduate Diploma in Education (PGDE), 35 Bachelor of Education (B. Ed), and 32 Diploma in Secondary Education (DSE) students, respectively. All the subjects completed the David Kolb's Learning Style Inventory (1976) that determines the nature of learning styles that students use during the learning process. This inventory was used because it is easy to administer, analyse and interpret. The study found that the majority of students tend to use only one learning style during the learning process while only a few students use a diversity of learning styles. The findings of the study provide fundamental information on how students learn not only in Botswana schools and institutions of higher learning but also globally. This implies that there is a relationship between the teaching styles of teachers and those of their students during the teaching-learning process. Therefore, in order for students to understand the subject matter being delivered by the teacher, they need to assimilate their learning style to that of the teacher and they need to be exposed to different learning styles by their teachers during the learning process.

Research available on learning styles shows that teachers do not often take into account the individual student's learning styles during the learning process (Dunn and Dunn, 1978; Dunn and Griggs, 1988; Dunn, Dunn and Perrin, 1994; Reay, 1994; Renzulli and Smith, 1978; Mushoriwa and Shumba, 2002). In their most recent study of learning styles among 200 college students in Zimbabwe, Mushoriwa and Shumba (2002) found that students use different study strategies; gender influences both study strategies and matching of self-perceived with measured study strategies; and more females than males matched self-perceived strategies with measured study strategies. Since each student has a unique learning style, this implies that teachers need to take into cognisance the diversity of students' learning styles that exist within

the classroom setting. Such diversity depicts a scenario in which some students do not learn well in the morning but perform well in the afternoon.

There is little consensus among psychologists as to which styles most affect school learning and how they can be defined and assessed. Messick (1984) defines learning styles as habitual modes of processing information during the learning process. Others define cognitive styles as "self-consistent, enduring individual differences in cognitive organization and functioning" (Ausubel, Novak and Hanesian, 1978: 2). In this regard, cognitive styles are viewed as mediating between ability and personality constructs (Corno and Snow, 1984; Mushoriwa and Shumba, 2002) and as reflecting meta-cognitive functioning in individuals in organising and controlling other information processing and emotional responses (Messick, 1984). A learning style is "a biologically and developmentally imposed set of personal characteristics that make the same teaching/learning strategy effective for some and ineffective for others" (Brickell, 1993: 2). Davidson (1990: 3) suggests that a learning style refers to "an individual's characteristic mode of gaining, processing and storing information" whereas De Bello (1990) suggests that a learning style refers to "the way people absorb, process and retain information". However, research into learning styles suggests that individuals learn differently and some learners would prefer to learn individually while others would prefer to learn from interaction in groups (Orr and Davidson, 1992). Therefore a learning style is a disposition to adopt one class of learning strategy or one class of teaching strategy to various situations during the learning process (Lefrancois, 1997; Vernon, 1984; Witkin, Goodenough and Oltman, 1979).

Other studies show that the teacher's teaching styles are often passed on to students and become the students' study strategies (Heikkinen, Pettigrew and Zakrajsek, 1985). Similarly, in their recent study, Mushoriwa and Shumba (2002) found that teachers often blame students for "not understanding" what they are teaching and yet it is a direct result of their teaching styles. Herrmann (1988) believes that what students prefer to learn is related to their learning style or way in which they go about learning. Therefore, the failure to match cognitive style to learning mode can cause frustration, increased effort expenditure, boredom, and so forth. This implies that one's learning style preference is related to one's competence and that many people are likely to do better at things they like to do (Herrmann, 1988). Sternberg (1990) asserts that people have a variety of intellectual styles, some of which they are good at and others they are less good at. Sternberg (1990) claims that the fit between the learner and the teacher is extremely important and that there is also a fit problem between the way the content is taught and the way both the student and the teacher think. Likewise, a teacher's style of thinking strongly influences the way in which content is taught and the student's learning style strongly influences the way in which it is learned. As such, when both fit the student will learn at maximum potential (Sternberg, 1990). This implies that teachers need to develop and use effective teaching styles to enable students to adopt effective study strategies.

Learning styles have been categorised by various researchers in the field, including Kolb (1976), Kolb, Rubin and McIntyre (1979), Lotas (1979), Fischer and Fischer (1979), McCarthy (1980), Gregorc (1982), Taggart and Torrance (1984), Entwistle (1981), Witkin (1966) and Witkin, Moore, Goodenough and Cox (1977) (Blackmore,

1996; Schmeck, 1988a). Kolb and Wolfe (1979) present an Experiential Learning Cycle and suggest that learning requires abilities that are polar opposites. In their model, learners need to choose which set of learning abilities they will bring to a specific situation during the learning process.

Kolb (1976) devised a self-descriptive instrument entitled the Learning Style Inventory (LSI) using this tool, and identified four statistically prevalent types of learning styles, namely convergers, divergers, assimilators and accommodators. According to Kolb and Wolfe (1979), convergers value abstract conceptualisation over concrete experience and are active experimenters. Their strength is practical application of ideas and such learners prefer things to people and have the ability to focus on a specific problem. In other words, convergers take in experience abstractly and process it actively. Convergers start with an idea and then test it through experimentation, use problem-solving and are capable of making decisions themselves. Such learners often work in the physical sciences and engineering (Kolb, 1976). It is clear from the above discussions that the four learning styles proposed by Kolb help students to become effective learners. Divergers value concrete experience and reflective observation and hence have the ability to view concrete experiences from a number of perspectives (Kolb and Wolfe, 1979). Divergers take in information concretely and process it reflectively. They generalise from what they see and have imaginative ability and awareness of meaning and value viewing concrete situations from many perspectives. Such learners are capable of generating alternative ideas and tend to specialise in arts. Assimilators value abstract conceptualisation and reflective observation and hence have the ability to formulate theories. Such learners have strong inductive reasoning abilities and prefer abstract concepts to people (Kolb and Wolfe, 1979). According to Kolb, assimilators begin with an idea or abstraction and process it reflectively. Such learners use inductive reasoning in order to create theoretical models, integrate different views during the learning process and normally study basic sciences and planning (Kolb, 1976). Accommodators value concrete experience and experimentation, hence are willing to take risks and their strength is the ability to adapt to immediate circumstances. Such learners are at ease with people but may appear pushy or impatient (Kolb and Wolfe, 1979). In other words, accommodators perceive experience concretely and process it actively and such students learn better through interacting with the learning aids by being involved in activities.

In summary, Kolb's learning styles model is based on two lines of axis or continua: our approach to a task or preference to do or watch, and our emotional response or preference to think or feel. The theory sets out these four preferences, which are also possible different learning methods: doing (active experimentation), watching (reflective observation), feeling (concrete experience) and thinking (abstract conceptualisation). These learning styles characteristics are normally shown as two lines of axis as shown in Figure 1.
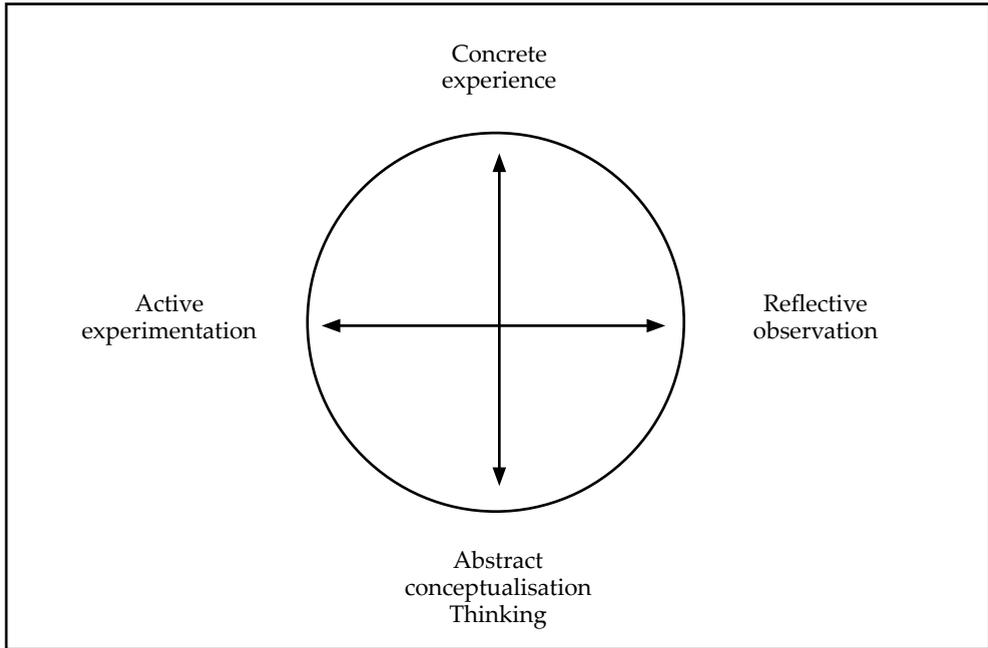
Figure 1: Adapted from David Kolb's Learning Styles (1984)

The east-west axis is called the Processing Continuum (how we approach a task), and the north-south axis is called the Perception Continuum (our emotional response, or how we think or feel). This also describes four different learning styles and methods. The combination of where our preference lies on each axis produces four types of learning styles, namely activist (doing and feeling preferences, or concrete-active), reflector (watching and doing, or concrete-reflective), theorist (watching and thinking, or abstract-reflective), and pragmatist (thinking and doing, or abstract-active) as shown in Figure 2.
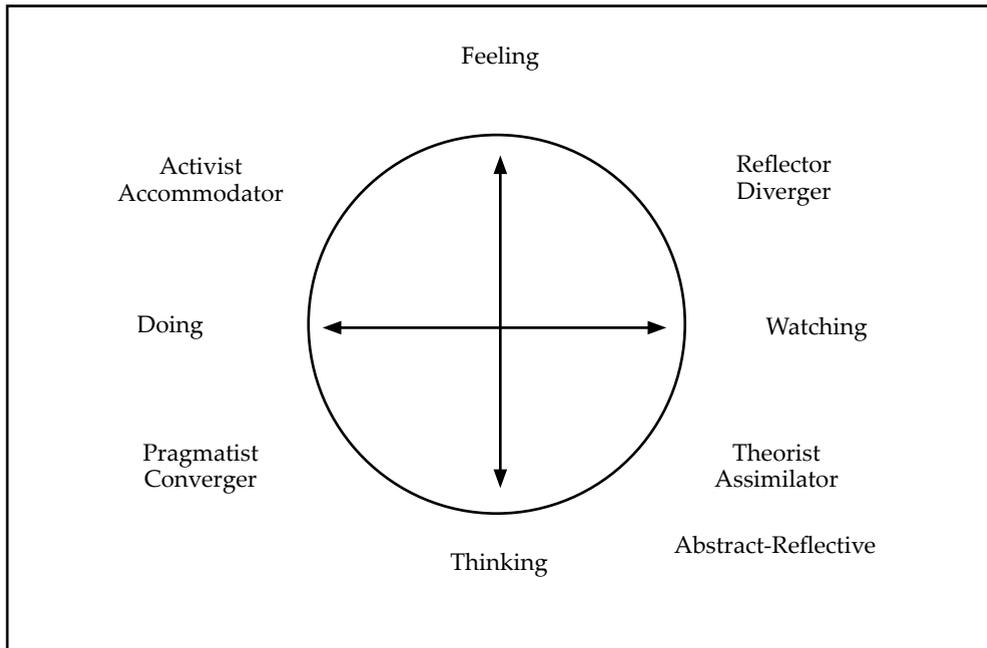
Figure 2: Adapted from David Kolb's Learning Styles (1984)

Knowing a person's and your own learning style enables learning to be oriented according to the preferred method (Kolb, 1984). Briefly, the activist person is hands-on; relies on intuition rather than logic; uses other people's analysis, and likes a practical, experimental approach. The reflector likes watching and doing, or concrete-reflective; is able to look at things from different perspectives; is sensitive; prefers to watch rather than do; gathers information and uses imagination to solve problems. A theorist likes watching and doing, or abstract-reflective; is concise; uses logical approach; ideas and concepts are more important than people; requires good clear explanation rather than practical opportunity. A pragmatist likes thinking and doing, or abstract-active; can solve problems; will use learning to apply to finding solutions to practical issues; prefers technical tasks, and is less concerned with people and interpersonal aspects.

Besides Kolb's (1976) learning styles, learners can use other learning styles during the learning process. Based on Jung's (1921) Psychological Types, Lotas (1979) classifies four types of learners: the affective 1 learner; the cognitive 2 learner; the cognitive 1 learner, and the affective 2 learner. The affective 1 learner learns best in a group by interacting and sharing ideas with other learners. This person is sensitive to others and makes decisions based on the group's feelings. The cognitive 2 learner uses facts to build and/or understand theories. This learner uses prior knowledge (schema) or assimilates new information to what already exists for better understanding. The cognitive 1 learner is concerned about the practical aspects of life and makes decisions based on accuracy of information. This learner relates learnt ideas to real-life situations. The affective 2 learner is concerned with the meaning and purpose

of life. This learner's decisions are based on moral or aesthetic considerations. It appears that cognitive 1 learner and affective 2 learner have similar characteristics and concerns about life.

Similarly, Fischer and Fischer (1979) also classify learners as emotionally involved (two types), incremental, sensory generalist-specialist, or intuitive. The first type of emotionally involved learner needs an emotionally colourful learning atmosphere. The second type of emotionally involved learner requires a dynamic interplay of ideas and activities. The incremental learner wants a logical-sequential structure. The generalist is a multi-sensory learner, while the specialist prefers one dominant sense (usually sight or hearing). The intuitive learner has sudden insights and makes meaningful and accurate generalisations based on information and experience gathered unsystematically.

In his study, McCarthy (1980) combined the findings of the preceding theories and formed a new synthesis of the following four styles of learners: innovative, analytic, commonsense, and dynamic. The innovative learner seeks meaning through personal involvement and learns through discussion. S/he perceives information concretely, processes it randomly, and is a divergent thinker. The analytic learner values facts and the opinions of experts. Information is perceived abstractly and processed reflectively. This learner thrives in the traditional classroom. The commonsense learner wants to know how things work and seeks relevance. The dynamic learner is a risk taker who is interested in hidden possibilities. This person is a good problem solver and likes to make things happen.

Gregorc (1982) developed the Gregorc Style Delineator, a half-report instrument designed to identify an individual's learning style as concrete sequential, abstract sequential, abstract random or concrete random. Gregorc describes the concrete sequential person as objective, persistent and careful with detail. The abstract sequential person is evaluative, analytical, logical and oriented to research. The abstract random person is sensitive, aesthetic, aware and spontaneous. The concrete random person is intuitive, experimenting, creative and a risk taker.

On the contrary, Torrance's instrument, Your Style of Learning and Thinking (SOLAT) (Torrance, Reynolds and Ball, 1977) is based on knowledge about thought processes that are identified with the functions of the left and right hemispheres of the brain. Research on brain hemisphericity indicates that the left cerebral hemisphere is specialised primarily for verbal, analytical, abstract, temporal and digital operations (Ornstein, 1972). The same researchers have found the right cerebral hemisphere to be primarily specialised for non-verbal, holistic, concrete, spatial, analogic, creative, intuitive and aesthetic functions. The SOLAT describes people as right, left or integrated learning styles. Right and left styles reflect their corresponding brain hemisphere-dominant characteristics. The integrated learner uses both hemispheres equally. Of the styles previously reviewed, the integrated style most resembles Gregorc's concrete random style.

Studies by Marton (1988), Witkin (1966) and Witkin *et al*. (1977) found that learners use two learning approaches in processing information, the surface and deep-processing approaches. They noted that a surface approach to learning leads

to a learning outcome that is essentially a literal reproduction of the words of textbook authors or instructors. Such learners merely memorise bits and pieces without understanding. These learners are motivated by rewards, grades, external standards and the desire to be evaluated positively by others in class. They have a quantitative conception of the process. On the other hand, deep-processing learners seek to understand material rather than memorise it. Such learners have a holistic perception of the material studied and have a qualitative conception of the process, including the interpretation and reinterpretation of experience leading ultimately to self–actualisation. In short, these learners develop their own learning styles and are not too dependent on information in books but go beyond.

Entwistle (1981) gives a comprehensive account of the styles that can be observed among college students and their teachers. In his studies in which he compared students who are mainly passive–receptive against the active-adventurous, Entwistle found that passive listeners learn as much as they can from lecturers' utterances and the textbook and try to reproduce what they have learned when examinations come along. On the other hand, Entwistle (1981) found that the active students are those who think and criticise during class discussion periods, search for more information, and develop further ideas of their own. It is this quality of students that university teachers seek during their lectures. The above learning styles are similar to surface levels versus deeper levels.

Witkin, Moore, Goodenough and Cox (1977) used the terms field-dependent and field-independent or global and articulated to refer to attentional and perceptual elements of such a learning style. Witkin *et al.* (1979) suggest that psychological differentiation may mirror hemispheric differentiation because the more lateralised the cerebral hemispheres the greater the psychological differentiation. In their studies of learning styles, Fowler and Fowler (1984) found university students to be more field-independent than fourth-form students. Others have referred to field-dependent and field-independent learning styles as "impulsive" and "reflective" styles (Kogan, 1994) and "category breadth" (Wallach and Kogan, 1965). Kirby (in Schmeck, 1988a) uses the terms global and analytic. Pask (in Schmeck, 1988a) refers to the learning styles as "holistic" and "serialist" styles.

Claxton and Murrell (1987) present a selection of learning style models that help identify how learners interact with and acquire knowledge from the environment. They classified them into four categories, namely personality, information processing, social interaction, and instructional preference. Various researchers (Orr and Davidson, 1992; Williams, 1992; Stanton and Baber, 1992) who have conducted correlational studies between these models and a range of learners' characteristics have often provided conflicting results. For example, constructivists argue that knowledge is constructed only in the minds of the learner and hence believe that this is facilitated by having the learner identify topics or issues, locate resources, plan investigations and activities, practise self-evaluation and formulate principles (Volker, 1992). According to the constructivists, the process of learning involves the construction of meanings by the learner from what is demonstrated or experienced. Constructivists de-emphasise instruction and performance and place far more responsibility for deciding what and how to learn on the student

(Hedberg, Harper and Brown, 1993; Claxton and Murrell, 1987). This implies that in the design of multimedia material, a more enriched learning experience occurs when learners are presented with different styles of learning in both content and teaching style (Brickell, 1993; Claxton and Murrell, 1987). Therefore, if learners are able to determine their own pathway in selecting the information available to them in the manner that best suits their own learning style, then the entire learning process may be more efficient. Hence, the challenge for teachers is to identify learning styles for the user in a diverse student population. This study seeks to determine the nature of students' learning styles and their implications for learning in Botswana schools and institutions of higher learning. This study is thus important for teachers to understand the learning styles of individual students as it helps them to anticipate their perceptions, subsequent behaviours and misunderstandings, take advantage of their strengths, and correct their weaknesses (Blackmore, 1996; Schmeck, 1988a).

2. METHOD

PARTICIPANTS

In this study, data were collected using a randomly selected sample of 57 Post-Graduate Diploma in Education (PGDE) students studying at the University of Botswana in the 1999/2000 academic year to determine the nature of their learning styles and their implications for Botswana schools.

INSTRUMENTS

All the participants selected were asked to complete the David Kolb's Learning Style Inventory (1976) to determine their learning styles. This inventory was used because it is easy to administer, analyse and interpret. The other major reason for using this inventory is that it was readily available to determine the nature of the students' learning styles. The majority of these students were passive and never asked questions during lectures. In order to improve his teaching styles, the researcher took this opportunity to determine the nature of learning styles used by these students. The researcher has used this inventory to teach learning styles to students for many years. The researcher was very familiar with the inventory. Kolb's Learning Style Inventory (1976) uses four sets of descriptions (accommodator, diverger, converger and assimilator) to determine the nature of learning style of learners (Kolb, 1976; Kolb *et al.*, 1979).

PROCEDURE

Subjects used to complete Kolb's Learning Style Inventory (1976) are required to put a four (4) next to the description that is most like them, a three (3) next to the description that is second most like them, a two (2) next to the description that is third most like them, and a one (1) next to the description that is least like them. The four columns of words correspond to the four learning style scales: Concrete Experience (CE), Reflective Observation (RO), Abstract Conceptualisation (AC),

and Active Experimentation (AE), respectively. The CE scale score was found by calculating the sum of rank numbers for items 2, 3, 4, 5, 7 and 8; the RO scale score by calculating the sum of rank numbers for items 1, 3, 6, 7, 8 and 9; the AC scale score by calculating the sum of rank numbers for items 2, 3, 4, 5, 8 and 9, and the AE scale score by calculating the sum of rank numbers for items 1, 3, 6, 7, 8 and 9. Finally, to determine the two combination scores CE was subtracted from AC (that is, AC-CE) and RO was subtracted from AE (that is, AE-RO). The Learning Style Type Grid was used to interpret the meaning of the scores calculated from the above combinations. The grid has the raw scores for the two scales AC-CE on the vertical axis and AE – RO on the horizontal axis. In order to determine the learning style of each of the students used in this study, resulting raw scores from the scale combinations were marked and their point of intersection plotted on the grid. The four quadrants, labelled diverger (first quadrant), assimilator (second quadrant), converger (third quadrant), and accommodator (fourth quadrant) represent the four dominant learning styles used by learners (see Figures 1 and 2). A learner whose data point is closer to the point where the axes cross each other has a balanced learning style. On the other hand, a learner whose data point is close to any of the four corners indicates that the learner relies heavily on one specific learning style.

Results

Table 1: Learning styles of the 1999/2000 sample of PGDE students (N = 57)

Student gender	Main subject	CE	RO	AC	AE	AC-CE	AE-RO	Learning style
M	HE	11	16	16	18	5	2	Assimilator
F	GE	9	8	22	20	13	12	Converger
F	ERTS	13	14	17	17	4	3	Converger
M	HAL	18	18	12	16	-6	-2	Diverger
F	ERTS	12	12	22	17	10	5	Converger
M	G	11	7	21	20	10	13	Converger
M	GE	19	12	14	20	-5	8	Accommodator
M	HE	23	8	18	16	-5	8	Accommodator
F	SE	14	15	15	18	1	3	Accommodator
F	HE	20	18	21	20	1	2	Diverger
M	MP	9	18	19	18	10	0	Assimilator
F	HE	18	21	13	15	-5	-6	Diverger
F	HAL	16	13	17	22	1	9	Accommodator
M	SG	12	13	20	19	8	6	Converger
F	HE	14	15	18	15	4	0	Assimilator
F	SE	21	12	13	18	-8	5	Accommodator
M	HE	19	19	17	11	-2	-8	Diverger
F	HE	10	9	19	19	9	10	Converger
M	FG	14	15	15	20	1	5	Accommodator
F	B	10	12	19	20	9	8	Converger

Student gender	Main subject	CE	RO	AC	AE	AC-CE	AE-RO	Learning style
F	FH	11	17	17	18	6	1	Accommodator
F	HE	16	14	15	20	-1	6	Accommodator
M	SH	11	15	20	18	9	3	Converger
F	ETRS	17	15	20	15	3	0	Diverger
F	SG	18	15	18	13	0	-2	Diverger
F	FG	16	10	17	20	1	10	Accommodator
F	E	22	14	17	19	-5	5	Accommodator
F	ES/Soc	18	16	18	15	0	-1	Diverger
M	M	15	11	14	20	-1	9	Accommodator
F	C	14	10	19	18	5	8	Converger
F	Arch	13	10	17	18	4	8	Converger
F	FE	18	13	13	9	-5	-4	Diverger
F	SE	15	10	13	22	-2	12	Accommodator
M	MP	20	17	14	11	-6	-6	Diverger
F	SE	12	13	18	19	6	6	Converger
F	FE	8	8	22	23	14	15	Converger
F	ETRS	12	10	19	20	7	10	Converger
F	SE	15	16	19	15	4	-1	Assimilator
F	STRS	8	11	20	17	12	6	Converger
M	HE	15	15	21	17	6	2	Assimilator
M	Arch	14	14	17	16	3	2	Diverger
M	MP	18	14	16	16	-2	2	Diverger
F	STRS	15	13	19	15	4	2	Assimilator
M	C	15	12	14	21	-1	9	Accommodator
M	HE	12	11	17	18	5	7	Converger
M	HE	8	13	20	20	12	7	Converger
M	HE	10	13	22	21	12	8	Converger
M	HE	17	15	14	14	-3	-1	Diverger
F	C	12	10	19	20	7	10	Converger
F	S	13	13	19	14	6	1	Assimilator
F	ETRS	12	17	21	17	9	0	Assimilator
M	ES/E	10	12	20	22	10	10	Converger
M	E	13	12	20	12	7	0	Assimilator
M	E	11	7	23	16	12	9	Assimilator
M	HG	15	13	16	12	1	-1	Diverger
M	P	20	16	18	13	-2	-3	Diverger
F	C	17	16	15	12	-2	-4	Diverger

The findings of this study shown in Table 1 were derived using Kolb's Learning Style Inventory (1976). In the DSE and BEd category, the study found that 1 DSE and 2 BEd students were assimilators; 14 DSE and 10 BEd students were accommodators; 7 DSE and BEd students, respectively, were divergers; 8 DSE and 11 BEd students were convergers; 1 DSE and 3 BEd students were both accommodators and convergers;

1 DSE and 2 BEd students were both divergers and assimilators. The study also found that 9 arts students and 1 science student were assimilators; 11 arts students and 2 science students were accommodators; 13 arts students and 6 science students were convergers; while 9 arts students and 6 science students were divergers. These findings are significant since they will guide teachers on how to handle their students in the classroom in line with their teaching styles, as suggested by Kolb (1976) and other researchers in this area.

3. Discussion

The findings of the study provide fundamental information on how students learn not only in Botswana schools and institutions of higher learning but also globally. The reason is that there is a relationship between the teaching styles of teachers and those of their students during the teaching-learning process. In order for students to understand the subject matter being delivered by the teacher they need to assimilate their learning style to that of the teacher (Dunn and Dunn, 1978; Mushoriwa and Shumba, 2002). This implies that students need to be exposed to different learning styles by their teachers during the learning process.

Research appears to show that students who use all four learning styles suggested by Kolb learn the subject matter more easily (Kolb, 1976). This implies that this is a rare breed of students as they are likely to be genius or super intelligent students. It is no exaggeration that this study found only three diverger/assimilator and four accommodator/converger students in the DSE and BEd category. These students understand material faster than those who use only one learning style during the learning process.

As was noted under major subjects (see Table 1), most DSE and BEd students who participated in this study majored in two subjects. It is the Botswana Ministry of Education's policy that students studying a Post-Graduate Diploma in Education specialise in two academic subjects during their professional training. This is for economic purposes because it makes one teacher competent to teach more than one subject in the school.

The study found that more female than male PGDE students use a variety of learning styles during the learning process. It is clear from the findings that male and female and male Botswana students in institutions of higher learning use various learning styles during the learning process. It can only be speculated that female students in Botswana's institutions of higher learning work very hard and are more mature than their male counterparts; hence the reason why they are ahead of the rest of the group.

The majority of the students who were assimilators specialised in arts rather than science. According to Kolb's study, the majority of the students who are assimilators specialise in basic sciences and planning. On the contrary, the majority of these students were arts rather than science students. The reasons for such a pattern can be speculated. The majority of these students have a phobia for science.

The majority of the students who were accommodators specialised in arts rather than in science. According to the Kolb's study, the majority of the students who are accommodators specialise in "action-oriented employment" such as agriculture and other practical subjects (Kolb, 1976; Kolb *et al*., 1979). Such subjects could be classified as "practical" sciences since a great deal of labour is involved during the process. The majority of the students who were convergers specialised in arts rather than in science. According to Kolb's study, the majority of the students who are convergers specialise in physical and engineering. Since these students trained to become teachers, it is expected, using Kolb's Learning Style Inventory, that they are expected to become science teachers rather than arts teachers.

The majority of the students who were divergers specialised in arts rather than in science. According to Kolb's study, the majority of the divergers specialise in the arts (Kolb, 1976; Kolb *et al*., 1979). This result is unique because it is the only result that agrees with Kolb's findings. It can be argued that the majority of the Botswana University students who studied Educational Psychology as part of their professional training were arts-oriented.

It is clear that the majority of the PGDE students were more inclined towards arts than science. It appears that most of these students do not like science. This could be due to their background in primary and secondary school education. This reflects also on the teaching styles of their primary and secondary school teachers. The findings of this study could be "a tip-of-the-iceberg" as to why the majority of the students have a negative attitude towards science because it appears that most Botswana primary and secondary school teachers do not reach their clientele when teaching science subjects. It can also be argued that students who choose arts subjects do so because they are naturally not interested in other demanding subjects such as pure science. This influences the type of student one would find in any education cohort. As such, the researcher recommends that a follow–up study be conducted to determine the reasons why the majority of the PGDE students are more inclined towards arts than science.

4. Conclusion

It is clear from the findings that the majority of the students used in this study are accommodators and convergers in both categories. Such students are imaginative and aware of meaning and value, viewing concrete situations from many perspectives. Such students are capable of generating alternative ideas and have broad cultural interests. Despite the fact that these students use various learning styles, it appears that they are not too dependent on their teachers' teaching styles but are rather creative. The findings of this study cannot be generalised to all students in Botswana's institutions of higher learning because this was a very small sample. As such, the researcher recommends that a similar study be conducted using a larger sample that includes a sample of students from other institutions of higher learning in Botswana. Such a study will also verify whether the theory used has some inherent weaknesses that need to be checked.

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This collection presents some of the best peer-reviewed papers from a conference with the theme "Creating sustainable empowering learning environments through scholarship of engagement". This conference was held from 20 to 21 August 2009 at the Potchefstroom Campus of the North-West University in South Africa. Over 110 papers were presented, out of which 20 were selected for this publication, based on a rigorous blind peer-review process. The main criterion for inclusion was that the paper should contribute to the theme by means of an original, tight, theoretical and empirical study conducted with the aim of informing the practice of creating sustainable empowering learning environments.

This text is very "rich" in terms of the focus and content. It contains a collection of interesting chapters, some empirical research-based and others experiential-based that contribute to current educational debates in South Africa and beyond. The multiple chapters address a variety of issues that are of importance to the South African context specifically, and other contexts more generally. The concrete cases examined in many of the chapters are very useful to helping readers understand the specific, on-the-ground concerns related to higher education and schools. Considering the emphasis on international collaborations, such a collection of chapters will be useful to individuals working in collaborative efforts with South African colleagues. Although many of us might work with social justice and equity goals in mind, we cannot presume to understand the South African context. Specifically, this text will make an important contribution to those individuals working to improve Higher Education in South Africa; more generally, it will contribute to literature in the field of Higher Education.

Dennis Francis is a Professor and currently, the Dean of Education at the University of Free State. Dennis holds a PhD in Sociology and teaches in the fields of Social Justice Education and Sexuality Education. He has written extensively in the areas of identity studies, education for social justice and youth sexuality. He is the author of Between Race, Within Race. Dennis is a NRF rated researcher.

Sechaba MG Mahlomaholo is the Research Professor in the School of Education, North-West University in Potchefstroom, South Africa. His research interest lies in creating sustainable empowering learning environment for social justice. He is a member of the UMALUSI Research Forum, the Anti-Racism Network and the Apartheid Archives Project, among others.

Molebatsi Milton Nkoane (Ph.D.) is the Senior Lecturer in the Faculty of Education at the University of the Free State. Milton teaches in the fields of Comparative Education and Educational Management. He has a strong interest in praxis as an operationalisation of critical emancipatory discourses couched within post-colonial, post-structural and postmodern.