

# Isiphethu Solwazi: Unizulu International Journal of Education

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# Editorial

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The publication of this first issue of *Isiphethu Solwazi* (IsiZulu phrase for *Fountain of Knowledge*) is both an honour and a realisation of a dream. It is an honour in the sense that the Faculty of Education, University of Zululand, can now be counted among teacher education institutions in the world that have taken the bold step of creating a platform for the dissemination of critical reflections around the theory and practice of the education enterprise. The primary function of teacher education institutions is to prepare quality educators for the school system. In turn, schools are the chalice of knowledge and skills from which the children of the world, and other learners, feed and drink in order to grow into productive, respectful and respected members of society, imbued with intellectual insight and wisdom; schools create spaces for the sharing of information – leading to the personal construction of knowledge – as well as the cultivation and nurturing of skills needed for human development and self-actualisation; schools give hope to those without any, courage to those defeated by the elements, resolve and determination to the down-trodden, purpose to those without direction, and balance to those without family support. Through the publication of this journal, it is hoped that the ability of the Faculty to produce teachers who will be equal to the task of creating rich and appropriate learning environments, in line with the above purposes of the school will be greatly enhanced. It is envisaged that the publication of research findings, as well as the critical analysis of issues which will characterise this journal will go a long way in raising the quality of teacher education in the Faculty.

In this very first edition, the first two articles centre around the very topical issue of HIV and AIDS with regard to the role of teacher education institutions. These two articles are followed by three research articles and perspectives in the area of mathematics and science education; followed by an article on school governance, which is followed by two articles addressing some aspects of Early Childhood Development (ECD). The last contribution on Braille has

been of great interest to the editorial board, as it tackles an area of education that is rarely reported upon. Certainly, the editors felt enriched by the short introduction to Braille.

The coverage of articles from South Africa to West Africa, via East Africa, bears testimony to the vision of the journal as an international journal with a special focus on Africa. The publication of this issue marks our starting point. We hope to grow in the quality and standard of articles published, as we gain further insights in both matters of journal production and editorial work. In this regard, we are eternally grateful to our esteemed reviewers. Lastly, and equally importantly, the Faculty wishes to express its thanks and appreciation to the University of Zululand for the financial support that has made it possible to publish this journal. The journal is available in both hard copy and online: [www.isiphethu.uzulu.ac.za](http://www.isiphethu.uzulu.ac.za).

I wish our readership pleasant reading, and I appeal for further and continued support from them by sending us quality papers for consideration.

Prof. Sitwala Imenda  
EXECUTIVE DEAN

# HIV/AIDS pilot module evaluation report of the University of Zululand teacher education programme



HIGHER EDUCATION AIDS (HEAIDS) PROGRAMME  
(Edited by SN Imenda)  
Faculty of Education  
University of Zululand

## ABSTRACT

This paper presents summary findings of a pilot study conducted by Higher Education South Africa, under the auspices of the Department of Education, and funded by the European Union. By way of research design, this was a *formative evaluation* study conducted to determine the effects of a pilot module on the participating NPDE students at the University of Zululand, South Africa. Altogether, 325 students participated in the study. Both quantitative and qualitative approaches and instruments were used to collect data, although this paper focuses mainly on the qualitative data generated. The findings revealed that many of the participants, all of whom were mature INSET teachers at all the school phase levels, were grappling with how to deal with complex HIV/AIDS related issues in the context of their professional and personal lives. Their comments showed that although for most of them the module materials were not offered in their mother tongue they were, nonetheless, highly valued. Case studies and stories in the materials were evidently found to be closely related to the local context and interesting – as was evident from the heated debates and discussions these stories generated within the context of the participatory approach adopted by their lecturers. New biomedical knowledge and the opportunity to see HIV/AIDS as socially and culturally embedded evidently led to some participants reflecting about their own sexual practices and relationships. There was evidence that most of them felt empowered

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with a sense of hope and/or a direction to tackle their own or/and their pupils' HIV/AIDS-related challenges.

**KEYWORDS:** HIV, AIDS, Roles, Educators, Teachers, Teacher Education / Training.

## INTRODUCTION

### *The Antecedents*

The Higher Education HIV/AIDS (HEAIDS) Programme was an initiative of the Department of Education (DoE) undertaken by Higher Education South Africa (HESA). It was funded by the European Union under the European Programme for Reconstruction and Development in terms of a partnership agreement with the DoE. *Piloting HIV Module in teacher education faculties in the HE Institutions in South Africa* was one of the projects within this initiative, whose overall objective was to support the DoE to achieve its vision of a national education and training system which contributed towards improving the quality of life and prosperity of all its citizens, specifically with respect to the higher education sub-sector.

This pilot project was premised on the critical importance of the capacity of the education and training system to attract and retain well qualified, highly skilled, competent educators who were equipped to deal with the challenges posed by teaching and learning in an HIV/AIDS affected and infected society. The objective of this project was thus to ensure sub-sector-wide engagement with these challenges and to provide the necessary support and resources for the development of educators equipped to deal effectively with the HIV/AIDS epidemic and its impact as it manifested in their work environment and on their personal and community lives. More specifically, the purpose of this project was to enhance the personal and professional competencies of educators through the

- provision of an HIV/AIDS teacher education module to student teachers – both in PRESET and INSET programmes of study; and
- identification, evaluation and dissemination of effective strategies for incorporation of HIV/AIDS related education into the teacher education programmes, and other curricula, of the participating higher education institutions (HEIs).

Following institutional commitment to the project, largely as a result of the first National Colloquium on 7 and 8 April 2008, the pilot module was implemented in 23 PRESET and INSET teacher education programmes on 25 sites in 20 HEIs. A total of 6485 students benefited from the module in 2008, and others commenced in 2009.

- Nationally, the implementation was supported by:
- the provision of a learning guide and reader to 6273 students;
- provision of a laptop, LCD projector and screen at 23 sites;
- the appointment of interns at 23 sites; and
- an electronic information resource called the Online Collaborative Forum (OCF) – which was a fully functional, secure web-based arena for participating HEI members to communicate with one another and to upload and download shared resources, collaborate on these resources, and to publish selected resources to a wider audience.

Primary support was afforded by a Regional Support Expert from the implementing team responsible for liaison and support at each HEI. HEIs also had access to Key Experts in relevant fields, such as teacher education, curriculum, evaluation, teacher support and development.

An evaluation model for the pilot was constructed by the implementing team and shared with HEI participants and interns at a second national colloquium on ‘Evaluating HIV/AIDS Interventions in Teacher Education’ held on 22/23 September 2008.

This paper presents findings of an evaluation study of the HEAIDS pilot module integrated into the National Professional Diploma in Education (NPDE) programme offered at the University of Zululand in 2008.

## **THEORETICAL FRAMEWORK AND PROBLEM STATEMENT**

A number of fundamental questions underlay the theoretical thinking of this project. These included the following: How does the curriculum-in-use, or the actual day to day interactions among lecturers (teachers), students, content and the social and academic environment (Hollins, 1996), impact on learning in an HIV/AIDS module? How do lecturers and students receive, understand, interpret and implement the curriculum as product (the written curriculum, in this case, being the HEAIDS manual)? “What is it about [the] curriculum and [the] pedagogy [that lecturers adopt] that really makes the difference to [student] learning” (Reeves & Muller, 2005:103)?

The curriculum model used was informed by Pinar’s (2004:186) metaphor of curriculum as “an extraordinarily complicated conversation”. In order to address this complexity, the model was premised on three perspectives: a *socio-ecological* perspective, an *inclusive education* perspective and ‘*health-promotion in schools*’ perspective. These are briefly elucidated: First, a socio-ecological perspective of the curriculum is informed by the notion that “people

can take part in the health promotion process (for example, HIV-prevention interventions) effectively only when they have a clear view of the (interrelatedness of) social and environmental factors that affect health and well-being” (*Health and Physical Education in the New Zealand Curriculum*, n.d.: 33). In this regard, the evaluation examined the extent and ways in which the data revealed participant student teachers’ and lecturers’ understandings of the impacts of the educational and social contexts in which schooling in various localities in South Africa takes place on the general well-being of individuals (learners and teachers) and communities, and on their risk of HIV-infection, as well as on the participants’ own HIV and AIDS school intervention strategies.

Consequently, and related to the above, the health promotion perspective sees the role of schools as creating “supportive physical and emotional environments in classrooms, whole schools, communities, and society, [and encouraging] students to make a positive contribution to their own well-being and that of their communities and environments” (*Health and Physical Education in the New Zealand Curriculum*, n.d.: 32). Accordingly, health promoting schools are those that constantly strive to strengthen their capacity as healthy settings for learning and working (Health Promoting Schools, 2009). Furthermore, in South Africa, informed by the *Education White Paper 6 - Special Needs Education: Building an Inclusive Education and Training system* (Department of Education, 2001), the inclusive education perspective is premised on the notion that optimal learning can be achieved for all learners, provided the barriers to learning which individuals or groups of learners experience can be removed or ameliorated. In the context of an HIV/AIDS module, a question arises as to what kinds of knowledge, skills and attitudes the curriculum-in-use would need to provide for such optimal learning to occur. Specifically, how would the curriculum-in-use enable teacher educators to assist student teachers to:

- recognise and mitigate the impact of barriers to learning that confront their learners,
- change their attitudes and behaviour towards difference and learners with different educational needs,
- differentiate and adapt the curriculum and teaching techniques in line with the varied needs and capabilities of individual learners and groups in their classrooms (Ntombela, 2006), and
- adopt teaching methodologies that support learning for all?<sup>1</sup>

In essence, to what extent, and in what ways, the curriculum-in-use, as applied at the University of Zululand, developed these skills, knowledge and attitudes

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<sup>1</sup> In the pilot module, such methodologies were identified as participatory.



amongst participant student teachers and their lecturers in the pilot module was seen as a problem worthy a systematic investigation. Accordingly, it was of interest to ascertain whether or not the participants had been enabled to use, or think about ways of using, "... approaches based on critical thinking and critical action when applying the socio-ecological perspective and practising health promotion in their teaching and learning" (*The socio-ecological perspective and health promotion*, n.d.).

## **AIMS OF THE PAPER**

The main purpose of this paper is to report findings related to the implementation of the HEAIDS pilot module amongst University of Zululand students. The aims of the paper are therefore stated as follows:

As a result of their participation in the HIV / AIDS pilot module, to what extent and in what ways did the University of Zululand participants

- recognise the negative impact of HIV/AIDS on (a) individuals and groups in their communities, and (b) their schools?
- recognise HIV-prevention behaviours as involving both social (group) and individual decision-making, and choices, about well-being?
- develop an understanding of their roles, not only as school teachers and university lecturers, but also as agents of change in the age of HIV and AIDS?
- develop an understanding that curricula interventions aimed at reducing infections and minimising the negative impacts of the pandemic must take into account the following realities and imperatives:
  - Schooling as highly contextual and, in the context of HIV and AIDS, highly complex.
  - Those charged with implementing educational interventions (for example, teachers) must first make meaning of both the interventions as well as of the context (social and educational) in which it is implemented.
  - That student teachers must make use of the intervention in ways that make a difference in the lives of those intended to benefit (namely their learners and the communities in which they teach or will be teaching).
- assist them (i.e. participants) to develop an understanding of the roles of schools, as whole organisations, in the context of HIV/AIDS and its negative impacts?

## RESEARCH QUESTIONS

More specifically, this study sought answers to the following research questions:

1. What was the effect of the pilot module on the participants' acquisition of relevant biomedical knowledge and understanding about HIV/AIDS?
2. What was the effect of the pilot module on the participants' understanding of their respective HIV / AIDS school policies, as well as other broader issues related to HIV/AIDS?
3. Did the pilot module have any effect on the participants' appreciation and awareness of the importance of the environmental context in dealing with matters of HIV / AIDS?
4. What effect did the pilot module have on the participants' sense of their roles as:
  - 4.1 preventative agents for the school and wider communities
  - 4.2 caregivers (pastoral role) for students
  - 4.3 an important support system for colleagues
  - 4.4 reflexive (self-awareness) practitioners; and
  - 4.5 leaders and role models?

## THE PROGRAMME

The module was presented in the second semester (July 2008 to January 2009) by two staff members in the Faculty of Education, namely Dr Jabu Adams and Ms. Sibongile Zulu. These staff members developed and produced a student guide for the module. Teaching took the form of lectures/tutorials which, where possible, included participatory engagements and group work/discussions, class presentations, brainstorming, buzzing, case-studies and role play. Students were required to read sections of the Module Reader in advance of classroom sessions. Assessment took the form of assignments and an examination. The module carried 12 credits, integrated within the National Professional Diploma in Education (NPDE) curriculum as a core module, and was presented by means of 12 three-hour lecture/tutorial sessions. The aim of the module was to ensure that participants acquired the basic knowledge related to HIV and AIDS, and that they developed personal and pedagogic skills to address HIV and AIDS-related issues in schools. More specifically, the module addressed the following outcomes:

That, by the end of the module, the participants would be able to demonstrate an understanding of:

- HIV and AIDS in a broader context
- basic bio-medical knowledge about HIV and AIDS
- a wider range of HIV and AIDS-related issues, including gender
- the link between health promoting schools, inclusive education and HIV and AIDS.

Overall, all the four HEAIDS pilot module outcomes were covered in the module, namely to prepare teachers to:

- implement participative pedagogical approaches to teaching biomedical facts about HIV and AIDS
- demonstrate understanding of how issues of poverty, gender, stigma and discrimination relate to HIV and AIDS in the South African and wider African contexts, and to engage learners around these issues in a participative manner
- demonstrate understanding of the physical, economic, social and emotional impacts of the HIV and AIDS pandemic on teachers, learners and their communities
- respond in sensitive, positive and holistic ways to the practical as well as psychosocial needs of learners and colleagues.

## **METHODS AND DATA COLLECTION**

The research methods are presented under various sub-headings below.

### *Research Design*

This was a *formative evaluative* study conducted to determine the effects of a pilot module on the participating NPDE students, in line with the programme objectives stated above. As Imenda and Muyangwa (2006: 32) observe “evaluation research involves the systematic collection of information on programmes, products, and/or techniques ... and then using this information to make value judgments concerning their worth”. Imenda and Muyangwa (2006: 32) go further and identify several kinds of evaluation research – including: needs assessment, formative (evaluation of new programmes during the development process) and summative (i.e. evaluations carried out on finished products). The main framework for conducting the evaluation of the HEAIDS pilot module was the document: *Evaluation model for the monitoring and evaluation of project procedures and outcomes* (HESA, July 2008).

### *Research Sample*

The research sample comprised 325 students enrolled in the NPDE programme. The students were part time students who were all in-service teachers from rural schools in KwaZulu-Natal, working full time as Foundation, Intermediate and/or Senior Phase teachers. They were, thus, well aware of the work environment and the challenges pertaining to their role in mitigating the effects of HIV and AIDS. The lecturers were perceptive of the needs pertinent to each school phase, and thus organised their classes according to phase levels.

Approximately 302 students completed the module: 147 from the Foundation phase, and 155 from the Intermediate and/or Senior phases.

### *Instrumentation and Data Collection*

A variety of instruments/tools were used in order to generate relevant data. Following a mixed methods design (Creswell, 1994), both *quantitative* and *qualitative* methods were applied. The instrument used to gather the quantitative data was a 71 item *questionnaire*<sup>2</sup> specifically designed to measure bio-medical knowledge and understanding; levels of HIV/AIDS related activity/activism; gender-related attitudes; and discriminatory attitudes. The questionnaire was used as a pre-test (providing baseline information) and as a post-test, after the completion of the pilot module. A comparison of a matched sample of pre- and post-test results was used to demonstrate the degree of change in students' development and learning by the students in the course of the pilot study. The questionnaire was administered during the teaching contact time, and took 45 to 50 minutes to complete.

To complement the quantitative data, a qualitative approach was adopted, using the following data generation tools:

- *Focus group interviews* with students (requiring the students to respond to two classroom scenarios about infected and affected learners, and to reflect on the module).
- *Individual self-reflexive interviews* with students (requiring the students to reflect on their experiences before, during and after the pilot study, referring to issues around feelings, participation, changes in understanding self, risk, HIV/AIDS, community, a sense of agency, community involvement and life as a teacher).

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2 With their permission, a slightly modified version of Vergnani and Lees' University of Western Cape questionnaire was used to address the purposes of this specific evaluation.

- *Individual interviews* with lecturers, tutors and programme heads (requiring the staff to reflect on the material, pedagogy, student engagement, successes and challenges, support provided by the research team, and the way forward in their institution) to explore to what extent the outcomes had been achieved.

The interviews were held outside class contact time and lasted about 45 minutes to an hour. This was supplemented where possible, by other tools, such as *student assessment tasks* and /or standardised institutional *course evaluations*. This paper reports specifically the qualitative results emanating from the interviews.

### *Data analysis*

The *qualitative* data analyses of the three forms of interviews were conducted by members of the implementing team. Tesch's open-coding method (Creswell, 1994) was applied in order to identify emerging themes and categories. All interviews were audio recorded and then transcribed. Both sensitising concepts (theoretical concepts that framed the interpretation) and indigenous concepts (i.e. those that arose directly from the qualitative data) were used to identify themes relating to competence and curriculum issues. As stated above, themes relating to the curriculum were framed by three perspectives: a socio-ecological perspective, an inclusive education perspective and 'health-promotion in schools' perspective. Themes relating to competence were framed by a model of professional competence in the age of HIV&AIDS. In this sense, the analysis was both deductive and inductive (Merriam, 2008).

Trustworthiness of the data was amplified by having multiple data sources (students and staff members) and by using multiple data generation instruments (focus group interviews, individual interviews, module evaluations, and student assignments). In some instances the findings were shared with lecturers and interns, and critical comment invited as a form of member checking.

Ethical approval to conduct the study was sought and obtained from both the participating respondents and the institution.

## **FINDINGS**

The main findings of this study are first presented on several general observations, followed by the examination of the results pertaining to each research question.

### *The Module Content and outcomes*

The Module Co-ordinator (Dr. JD Adams) indicated in her pilot evaluation report that the HEAIDS pilot outcomes were fully covered because the participating lecturers ‘had an experience already of designing content for HIV/AIDS and teaching the HIV/AIDS module in the Faculty’ and ‘the team were always available to assist whenever one needed assistance’. In her opinion, the overall programme objectives were mostly achieved. In other words, students were assessed as able to implement participative pedagogical approaches to teaching biomedical knowledge about HIV/AIDS, they demonstrated understanding of how issues of poverty, gender, stigma and discrimination related to HIV/AIDS in the South African and wider African contexts; they further demonstrated an ability to engage learners around these issues in a participatory manner, as well as understand the physical, economic, social and emotional impact of the HIV/AIDS pandemic on teachers, learners and their communities. In addition, it was felt that this module was able to offer some counselling and life skills.

### *Accessibility and level of language of materials*

One student thought that language could be a barrier in terms of accessibility and there was also comment about time pressures and the amount of content to be covered seeming daunting, but there was also comment that the materials and reading were worth of the effort. It is also important to indicate that all the students in this module were not mother tongue English speakers, many of their transcribed interviews reflect difficulties with clear expression in English, and most were taking the module whilst teaching full time.

I would suggest ...(inaudible) our teachers will find it hard, specially, particularly the language, because of ...(inaudible) still not good in English.

The problem, because you see, we only had three hours there, and then, there's a lot of readings, you have ...(inaudible). And then you see, the way somebody is presenting there, then next are summarising, writing, preparing for the next sitting presentation like this.

First when I received the module I thought maybe it was a mammoth task for me you see. When we are looking at the number of 20 pages, as blacks you can think that maybe it is a very huge task that one is faced with, but when you page through, when you get into it, firstly I thought maybe it's going to be the repetition of something that one knew previously ... but only to discover that when you ... get deeper now, into details, you find among information which was never ... with me previously. Yes, so ... there is some new knowledge that I've learnt, as well as some guidelines that are going to help me fitting in a real life situation ...

A focus group made up of Foundation Phase educators suggested that posters, teaching aids and even videos should be included in the pilot materials. The rationale was:

Give us materials for our different standards; introduce HIV/AIDS as a module as part of our lives; activities for young children.

We need these, they would help us very much because you have to demonstrate when you are teaching in church or community you must show them how; the others do not understand well but if they can see it.

... as educators of young ones we teach learners through pictures and if there were pictures we would take that book and show learners. It would be more interesting even for you the educator.

A suggestion was made, however, that the materials could be presented so that they were better integrated for reading:

Case studies must be juxtaposed to the units they relate to rather than having two sections in a guide. The reason for this suggestion is that the facilitators observed that students tended to focus on the Units section then the Reader section.

Nonetheless, overall the HEAIDS materials were highly praised and *deemed relevant to the real life context of the students*. Many students referred to the *Case studies and stories* in the module materials and their comments showed why they were valued:

The case studies were fascinating because students could relate to them e.g. Baba's Gift.

.this book has been hurting me, if this thing was introduced ten years ago then the situation would be better; it touches a lot of lives. There is a high rate of crime, rape – all these things are very possible and I remember in the book it said where people are not employed there is a high rate of sex and enjoy by having sex which is not proper. Once one is affected and does not even know he will spread it very easily. In Baba's Gift, she tried to say today Baba let's do it like this and she showed him a condom and he said no! Where did you get this, that nurse is not married and does not know anything about marriage and had unprotected sex just because Baba had said so.

I loved Ma-Ndlovu; she was forced to have sex without condom. She was bound by culture, she would be dismissed, and she is financially dependent on his husband. It gives me strengths I know I have the right to say no. There was time when it was difficult but our lecturers helped us.

I think Baba's Gift was very effective, it taught us that as women we should not be afraid to tell our husbands what we like and dislike, we need to be more brave when it comes to that.



I wish I could continue with this module. I copied the guide to my pupils. Sebonelo Case Study makes it very easy to understand because it relates to their real life situations in the rural areas.

### *Acquiring Biomedical Knowledge about HIV and AIDS:*

The first research question related to the acquisition of biomedical knowledge related to HIV and AIDS. Although the post test quantitative data indicated that by the end of the module most students demonstrated reasonable levels of biomedical knowledge, the findings reported here pertain to the qualitative information collected from interviews. Indeed, students confirmed in group and individual interviews that they had acquired a lot of biomedical information and knowledge about HIV/AIDS, and that the module had broadened their perspectives on how to act in relation to challenges posed by HIV and AIDS. Some students commented that this equipped them better to deal with safety issues related to blood injuries, while others reported that they were now better equipped with information about various types of infections, their manifestations and how to support those affected. For one student, a better understanding of biomedical information suggested a sense of hope for the infected:

I learnt that there are tablets, ARVs that give hope, there is no cure for this disease but while using ARVs there is a chance to live longer.

For the following two students information had the potential to inform decisions and change lives including their own:

To me it's ... it's ... it brought a different perspective.....to have information. You see, if you don't have information, sometimes you ... you just take wrong decisions ...

I have knowledge, and having acquired this knowledge I think the way it has changed is that my life has been changed because I have been exposed to so many kinds of environments, which I did not understand, but now I can understand.

### *Enhanced Understanding of the HIV/AIDS School Policy*

The second research question related to the participants' understanding of their respective school policies on HIV and AIDS. Many participants interviewed referred to this policy and showed that they were better equipped to interpret their school policies as a result of taking this HIV/AIDS pilot module. As a matter of fact, one of the assignments for this module required students to access their respective HIV schools policies. Consequently, the participants reported that the knowledge they acquired during the module assisted them



greatly, and in one case there was a suggestion that the policy study carried out during the course of the module had contribute to a better appreciation and recognition of human rights, with specific reference to the HIV infected:

I think I'm different, because I know about HIV and AIDS, and I have got a lot of information ...

Another participant had the following to say:

The interesting part I think is the principles of HIV/AIDS because we know them but we hadn't studied them. We have the policy at school but we hadn't study it, now we've studied it and now we know how to deal with learners and we know the rights of the learners and educators like no one can disclose my status.

Furthermore, the respondents also demonstrated in many comments an understanding of broader issues related to HIV/AIDS – such as gender issues, which came up very strongly to the fore and were mentioned by many students both male and female during interviews. This suggested that the students were positively influenced by their exposure the module, with regard to some gendered practices, as evidenced by the following remarks:

In the module we've gained a lot ... Women are more vulnerable to HIV/AIDS and have no power to talk about it to men; they think it's a shame but it is important to talk about it because it is very important to know how to cure HIV/AIDS.

I was interested in the way it affected gender. It taught me how vulnerable we are ... I was afraid to tell my husband who works as a miner that we should go and get tested; I was ignorant and scared to tell him. If I had the power to tell him maybe we would have prevented this disease but now we are going to leave our children as orphans.

The manner that it has been presented in this module is a little bit different, and it makes it easier for learners to understand it. It is true, ... because I come from that ... kind of environment, where I only believe that as a man, I am in control... so I've discovered that no, it doesn't become like that in this case, because it becomes too risky for women to be in a relationship with men ... I have discovered that no, it is true, that is a very high risk to indulge into sex ... without any protection ...

The interviews also suggested that the module stimulated thought about the social impact of poverty and stigma in relation to HIV/AIDS:

I realised that, okay it is true that one does not need to diagnose a person just by sight, but one can be HIV positive only if he has been tested, and yes, be-

ing able to divulge, their condition, because ... there is something that was ... was new to me.

Now I know that ... when somebody has HIV and AIDS, I ... there's no need that I have discriminate that someone.

There is a topic discussing unemployment, it leads us to this disease because females are vulnerable as others decide to be sex workers have chances of getting the disease as they can sleep with 10 people just to get money.

With regard to cultural issues, one respondent had the following to say:

It [the module] even emphasised a lot on the danger of polygamy. If we look at the chapter that talks about HIV in schools, about 17,68% of females are in danger while the 2,54% males are in danger of HIV/AIDS, reflects that boys start to practise polygamy while they are still young and that's why they break the law that says be faithful to your partner, how can I be faithful when I have many partners. So I think it plays a major role.

The mentality most men have in the rural areas is that they don't talk about sex with women. Men have power to decide on sex issues according to our culture (Individual Student Interview.

You're not allowed to talk about this. We've got this ... this mentality that, talking about issues of sex, it's ... it's ... it's just bad.

More specifically, individual and community HIV fears, infection rates, and cultural traditions were identified as constraining factors to openly acknowledging, speaking and teaching about HIV.

... whilst you are trying to help, people think you are just poking your nose into their business. So, usually in our culture we do not like such people because we think they just want to talk and expose this family's issues.

### *Environment Context*

The third research question concerned the effect of the module on the participating students' appreciation and awareness of the importance of the environmental context on their roles as educators in the face of the HIV and AIDS pandemic. As already stated, most of the students who took this module were in-service teachers who work in rural schools, typically, with poverty stricken children. Their responses to the scenario presented below show that as practising teachers they are aware that their learners are affected by their experiences in their families and communities. It seems that they are likely to take account of these factors to understand children's actions at school:

Scenario:

In the class you are teaching, there is a child who is not doing well and is falling behind the others. You notice that when this child draws pictures, all of these pictures are of boxes with people lying in them, now as a teacher what would you do?

...you should ask questions to find out about his/her background because some things may start there at home, what is here is a reflection of what's happening.

As a teacher you have to talk with the learner and if you don't have clear picture of what is going on you have to consult the parents to get how the learner's life and history, to get more information about his/her life.

*The Participants' Sense of their Various Roles.*

The fourth research question concerned the participants' sense of the role they had to play as educators in mitigating the effects of HIV and AIDS, as well as reflecting deeply on their own beliefs and practices.

As preventative agents for themselves, the school and the wider community, the students' comments in interviews showed some *agency towards change* in their own lives and in those of their pupils. Some of the students attributed this *sense of agency* to what they had gained from the module:

As I'm part of this course here...I mean it changed my attitude altogether. This is a disease that kills. So we ... we've got to be active now.

The module is, it's going to help me ... how is it going to help me? It's going to help me, because I'm going to use it at school. I know.

Those who are affected are going ... I'm going to tell them, what they're going to do, and how they are going to prevent how to spread it. If they're HIV positive, that's ...that doesn't mean that, this is the end of the road ... they have to go for treatment, they have to go for counselling, we have to love them, we have to care for them, all those.

It's helped me. And even personally, now I know that I must be assertive ... when I don't like it. Like I've got a husband ... when my husband is cheating, so I must tell my husband, no, because you're cheating... you must, let's do it like this. So now I know, I have to be strong, I have to be faithful, I must speak the truth.

In response to the scenarios where an HIV positive child is rejected by school mates, the following students indicated an intention to act as preventative agents in the classroom:

I will tell my students about the transmission of HIV/AIDS because it shows that they do not know how it is transmitted, I will tell them that they cannot get it from playing with her.

I'm going to introduce HIV/AIDS to my school; talk to principal and community. Before I was not able to help; children on medication can be helped at school.

In acting as a preventative agent, one student acknowledged the joint role of parents and teachers, but not that it was likely that many of the learners could be parentless because of the disease :

It is our duty to educate the parents and work hand in hand to educate the learners together.

Most of the students also showed an awareness of the need in this age of AIDS to extend their professional practice beyond the classroom. There were many comments about the importance of working together with the community – mostly through offering information about the pandemic but also through bringing different people together:

I learnt that we have done less at schools for example that we have not established support groups in such a way that I felt it is my burden to teach and establish community programmes and fight against stigma; it's a challenge.

Many comments from student interviews demonstrated their very strong commitment to assisting their communities by sharing their knowledge. Some expressed a very strong sense of responsibility and statement of agency for community assistance:

In our communities, people who mock have very little knowledge, so we have to teach them because the rural areas were poorly resourced, so people have to know.

We have to pass the information to our learners and the community. There is a lot of stigma, people are called by names.

We must encourage people to go and test.

We have a big job; we must help our children and involve the stakeholders. As educators we must work like never before because this disease is still with us today, tomorrow so we must work with the community and have workshops.

You are bound with the community ... that as the community, like we ... we have parents in our schools, like we need to go out to people ... like when we have parents meeting us, which is ... maybe try and give out things that would make the parents to be aware, and organise maybe ... AIDS awareness days, where we find people come and educate people around this.

I think I need to also have a relationship with all these other stakeholders, like all the other Departments, I need to call them ... in my problem as well. If it is not that, they will come into my school, therefore I need to plan about going out to them, so that I do this outreach and enlist them in terms of saying, they assist me.

### *Caregiver (pastoral role)*

The above excerpts spoke to the first aspect of the fourth research question. The responses below address the second aspect of the fourth research question concerning the role of teachers as pastoral care givers.

As the following quotations attest, many of the students interviewed provided evidence of being aware of their pastoral role and, as serving teachers, actually having acted in this capacity. They also went further and shared some of the difficulties of doing so within a system which does not appear to have effective backup support.

I think it is very important that our learners are not scared of us because an educator is a parent.

You need to have a kind heart so that when you consult parents, and tell the police who will say this issue is not ours then you will have to look for social workers who will say no it doesn't belong to us so you will say that I'm stuck and don't know what to do. The child is trusting you because she has told you, but how are you going to help the child?

To add on to that, one child once came to me and told me some boys were proposing love to her on the way home and I said what did you tell your parents because sometimes they know those boys; she said yes but I'm scared of my parents because they are going to punish me and I've come to you because you will help me without being punished. So as a parent educator I had to take some steps that the parents know this issue through me and not through the child so that they can solve the problem alone at home and talk to the boys' parents or call the police and arrest them. Learners sometimes trust educator more than their parents.

The following respondent recognises the need to provide emotional support:

The tool and the skill that I've learned is that, if I have discovered there is someone who is HIV positive, I need to take steps in terms of saying, let me give care and support ... but the case does not only become physical, on the physical, but you also have to consider the emotional aspects of life, yes ... because the person might be HIV positive, I've received that I'm HIV positive, but the person who comes to me, looking for care and support, is only coming with his physical things, yes ... when someone gives him physical material, and resources, that does not help me, but the thing that I have learnt

is that also, a person might be in need, emotionally, so that kind of a person is also, it requires a person who can come in with that assistance.

Another student revealed her experience of the complications and difficulties of an educator acting in the role of caregiver when there is no trust between school and community:

I'm in this case, there is a little girl in grade 4, I spoke to social workers. I think she is being sexually abused at home and the boy doing this was arrested. The social worker took her to a school where orphans are being taught and she was abused again, because she was a new girl and she felt she didn't belong there. Then her sister-in-law took her back home and two weeks ago she was back at school and she was complaining about her vagina being sore and she had sores, it was not a good thing to see, we had to take her to clinic to the nurse. You can see that she trusts you, when you take her home people complain because this girl is receiving the government grant and people say I want to get that money when I just want to help the child.

Some of the support as care-giver is practically orientated, in the case below with an emphasis on getting the all important birth certificates and clinic cards which could result in access to treatment. In the realisation of the importance of these documents this educator shows an excellent grasp of the context on the ground:

I found some means that will make those children to be supported. Like other children they don't have ... they are not ... they don't have parents. The other children, their parents are dead, because of HIV and AIDS, and they don't have certificates ... birth certificates. They don't have clinic cards, then arranged with the community councillor, that please, what if you sent the people from ... from welfare, to come and make certificates for these children, because they don't have parents. They are living with the other ones that are young. So what if you send the people to come and make these children, birth certificates. And the clinics, when they ... there is a mobile clinic in our area, so when there is a ... a clinic day, I go there, and I ask the nurses, please nurses come to my school, there are children there, they don't have clinic cards, but they are sick, they have to see the clinic all the time, but they don't have cards. What if you come and do cards for them, so that, even the clinic day is on the day when they are in school, they will go to the clinic. So they made the cards, they ... the councillor arranged with the people from Social Welfare, they made them birth certificate, so really it helped me because, I understand, these children, they don't have parents, I acted as parents of all of them ... (ISI 9).

Some respondents had an expanded notion of pastoral care, to include roles such as those normally performed by nurses and social workers. In this regard, the following comments were note-worthy:

Your job does not end being a teacher because you find yourself being a social worker, being a nurse, all these things are being practised in the classroom (FG 1).

The issue of pregnancy, yes ... that if my learners are actually not made aware of such things, I would have ... teenage mothers ...

### *Support System for Colleagues*

The third aspect of the fourth question concerned the respondents' awareness of their role as part of the support system for colleagues who may be HIV-positive, or are suffering from AIDS. There was not much mention of sensitivity to colleagues but the following quotation suggests an awareness of the stigmatisation suffered by infected colleagues:

AIDS we have in our schools, we find that we really have a problem amongst our colleagues, parents and learners, and the community at large ... because we find out that, as a teacher, maybe let's say the teacher is infected, people will feel that they don't even want to go to school, because ...learners will be saying this.

### *Reflexive Practice and Increased Self-Awareness*

The fourth aspect of the fourth research question related to the extent to which the participants engaged in reflexive practice, as a result of attending this module. In this regard, there was also plenty of evidence in student focus and individual interviews that more factual knowledge and a more nuanced understanding of HIV/AIDS led to new reflections or understanding of both self and others:

It's helped me a lot to know various things that can be done to a person with full blown AIDS. We are discriminating just because of lack of knowledge. I now understand when it is dangerous for me and when it is not.

It's helped me as an educator. If I am HIV positive, I know I have a new chance to live and my policy says no one is discriminated. I now have power to do anything in the school and the community.

As a reflexive practitioner, the following student appears to have incorporated something of the participatory approach into the classroom:

My life has changed, because I changed from an autocratic one, an autocratic teacher, now I'm democratic, partly democratic yes ... Yes, because now we discuss, and I allow them to talk to me, sometimes they even come to me to talk about their family matters.



For this student, reflective awareness of the reality of child-headed households seemed to have led to a better understanding of the whole child:

I took it into my situation then to say, sometimes I teach such kind of learners, but as a teacher I was not considering it as a fact that this is a reality. So, some of these learners are heading homes, so they are child-headed families, but I only come into the class and teach ... and I did not use that as a fact (unsure) ... so this module actually gave me an insight in terms of trying to understand (ISI 5).

Apparently, self awareness can also result in students affirming the value of their own lives, as evidenced by the following comments:

The module has assisted me in the following way ... now I know that if I happen maybe to indulge in sex, I need, firstly to be cautious, in terms of either abstaining or condomise ... Yes, or lastly to be faithful to my partner, which are the apices of life ... but surely the module did not only emphasise some of the things that are new, but it made me to realise that my life is important ... (ISI 5).

Hey, this module, hey, hey, hey, it's encouraging ... it encouraged me to go for a test, first of all, so that I can know my status (ISI 7).

Some of the reflexivity suggested an element of personal empowerment in relationships:

Firstly, I have no information, and I didn't use my right way, I use my right one, that's why I'm goes on. I know, I have a right to say, no, to sex, okay. And then, I know ... I know how to insist, a condom, I know, that I'm not forced by my husband to do sex while I don't know not ready for sex (ISI 6).

Our attitude changed issue of many partners; I have to cut the number (ISI 3).

### *Leadership and Role Modelling*

The fifth and final sub-section of the fourth research question dealt with the respondents' leadership role, and acting as role models, in their schools and communities. In this regard, the students frequently referred to their commitment to educating parents and community members, at large – and thus providing a lead in information dissemination. Role modelling came up strongly, perhaps best evident in the words of the following participant:

**Interviewer:** Do you think, your life as a teacher has changed?

**Respondent:** Dramatically.

**Interviewer:** Yes?



**Respondent:** Dramatically changed, you see, this has helped me, I can't just ... you see, the teachers have ... have a tendency falling in love with kids.

**Interviewer:** Yes?

**Respondent:** So this is just, how can I teach my kids about this when I'm in love with one of the learners.

**Interviewer:** Yes?

**Respondent:** It is, I'm not going to be able to advocate ...

**Interviewer:** Yes, yes.

**Respondent:** ... I mean, what am I going to say. But if I stay out, so I can be clear, and stand alone, and be able to speak to them, and they'll be able to hear, because they know how I walk ... Because if I'm preach what I'm doing.

Another respondent had the following to say:

As teachers, because firstly, as we are being, so called public figures, we are the ones who should ...(inaudible) sit down with the community, and the learners, and promote this thing of disclosing and get support your child.

## DISCUSSION

Judging from the large number of student interview comments, most participants demonstrated a nuanced grasp of the context in which they are teaching. Professional competence as preventative agents in the classroom is often seen as being able to use factual knowledge to help overcome issues such as stigma. Professional competence in the community is projected as community education, achieved through partnership with parents, awareness workshops and in some cases, networking or tapping into the resources of the health department or getting birth certificates from home affairs. It was evident from what students said in focus group and individual interviews that they had a lot of experience of attempting to play a pastoral role, and that they understood from this many of the challenges of trying to act with professional competence in this regard. Many of these experiences and acquisition of new knowledge were reflected upon by students and led to growth in competence to understand and mediate their own and their learners' lives.

Teacher identities and responsibilities, sensitive to the contexts in which teaching occurs, are shaped by eco-systemic factors inherent in their micro- and macro-contexts (Hall, 2004; Hoadley, 2002). Turning to teacher responsibilities, or professional practice as such, it makes sense that teaching cannot be business as usual in the age of AIDS. Given the multiple and relentless challenges of the HIV crisis for teachers, teacher roles and responsibilities

have mutated to include a range of skills, roles and sensitivities. In brief, this includes raising HIV and AIDS awareness, teaching prevention, supporting infected and affected learners (and even colleagues), shouldering increased teaching loads as infected colleagues are absent, and coping with HIV-related sicknesses and deaths in significant others (Bhana *et al.*, 2006:7-18; Car-Hill, 2003; Coombe, 2003). For this reason, we suggest a **model of professional practice** in the age of HIV and AIDS that foregrounds teacher roles (prevention agent; caregiver), teacher sensitivities (awareness of vulnerable learners and colleagues; gender issues; cultural heritage, contextual assets and constraints) and teacher agency (willingness to reflect and act). This is given in Figure 1.

In the age of AIDS, teachers are expected to function as *agents of prevention*: they are professionally obliged to teach their learners about safer sex, healthy sexuality and HIV prevention (Car-Hill, 2003). Teachers are further obligated to prevent discriminatory practices and the stigmatization of learners and colleagues who might be infected or affected by HIV and AIDS (Hoadley, 2007). These obligations are entrenched in the National Policy on HIV/AIDS for Learners and Educators (DoE, 1999) and the Norms and Standards for Educators (DoE, 2000). This role of the teacher often also spills over into the community.

Many teachers are confronted with large numbers of learners made vulnerable by HIV and AIDS (Bhana *et al.*, 2006; Boler, 2003); hence *caregiving* becomes an important issue. Often, these vulnerable learners need more than pedagogical interventions – most require additional support in terms of grief counselling, nutrition, accommodation and school fees; coping with discrimination, abuse, rejection, lost childhoods, and so forth (Bhana *et al.*, 2006; Coombe, 2003; Ebersöhn & Eloff, 2002). Too often teachers represent the solitary source of hope, information and/or comfort for these learners (Bhana *et al.*, 2006; Coombe, 2003; Hoadley, 2007; Theron, Geyer, Strydom & Delpont, 2008). Provincial departments of education often lack the human resources to provide counselling or underspend funds earmarked for support and care of HIV-affected learners (Govender, 2008) and so teachers fill the gap.

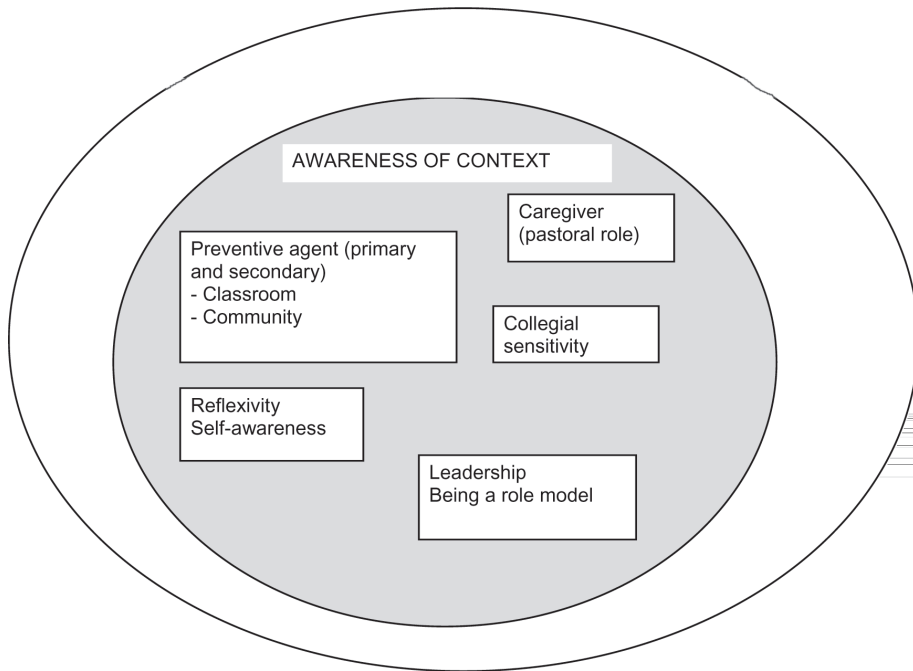


Fig 1: Professional practice in the age of HIV and AIDS

In rural schools where the HIV pandemic magnifies the contextual barriers that learners face, the burden of care that teachers shoulder is more acutely felt (Bhana *et al.*, 2006), and often plays itself out as the teacher taking up a *leading role* in making things happen. In rural and other under-resourced schools, the teacher is often ‘all things to all people’ (for example, social worker, counsellor, caregiver, advisor, and educator) (Bhana *et al.*, 2006; Hoadley, 2007; Theron *et al.*, 2008).

All of the above are shaped by the *context and culture in which the teacher* functions, and by the contexts and cultural heritage that shaped the teacher as a person and as a professional (Baxen & Breidlid, 2004). Therefore, it could be argued that teachers would probably not respond to the vulnerabilities of their learners or the obligations of policy if they were not *aware of and sensitive to* the challenges inherent to the HIV crisis for their learners (especially female learners), colleagues and communities and if they were not prepared to reflect on their responsibilities and potential influence as a professional in the age of AIDS. Furthermore, teachers’ awareness of assets which they can draw on in the community and from cultural heritage, can contribute to the mobilisation thereof towards the empowerment of learners and their communities, and in this way minimize or at least ease the impact of the HIV pandemic on their learners, colleagues and community.

Finally, teacher awareness of the complex reality of HIV would be incomplete without a critical understanding of their own positions and vulnerabilities in relation to the pandemic. This suggests that teacher competence in the age of HIV and AIDS requires teachers to reflect on lived experiences (or lack thereof), assumptions, beliefs, values, fears, sexuality, actions and interactions. Such deep introspection would ideally translate into modified practice, both on a personal and professional level.

## **CONCLUSION**

Evidence from the data indicates that many of the students enrolled for this course have been confronted by HIV/AIDS related issues. Outcomes reflect that the acquisition of biomedical knowledge was important and valued but this was true too of the development of some insight into the link between cultural practices, poverty and the spread of HIV and AIDS. In many cases these acquisitions appeared to affect the student by causing self-reflection in relation to the students' own lives and relationships and also to empower them with a sense of hope or a direction to take with their own or/and their pupils HIV/AIDS related challenges.

Materials were valued - case studies and stories in particular were found to be meaningful, generative of discussions and relevant to real life issues faced by these teachers. Interview comments show very clearly that one particular case study generated debate, reflection and an unpacking of traditional gender customs in relationships and an awareness that such customs can contribute to the spread of HIV/AIDS. Teachers were evidently keen to share what they had learnt in the classroom and community and it emerged that using the module materials was seen as a means to doing this. Since there was a recognition that the materials were not appropriate to the needs of the phases they taught, many students requested additional phase appropriate materials, particularly for the Foundation phases. It may be possible for students to move towards meeting this need if one of their assignments requires them to develop materials for their targeted phase.

For some teachers there could be a movement to more participatory approaches in the classroom because the adoption of these methods by their lecturers were noted and valued. Overall then, the module materials, an experienced HIV educator and pilot team support enabled a module considered valuable and relevant by inset teachers addressing HIV/AIDS challenges. A key lesson from the University of Zululand pilot then is that the provision of stories pertinent to the context and real experiences of these students, together with a participatory approach which promoted discussion resulted in reflection

about personal life styles and social practices and a reported increased understanding of the influences these have on HIV transmission. A further lesson is that this discussion and engagement resulted in some students reporting a better understanding of their learners and for at least one student, an interest in adopting a less didactic teaching approach.

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# The role of the teacher in the world with HIV and AIDS

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## ABSTRACT

Recently<sup>1</sup>, a comprehensive study carried out under the aegis of the Higher Education HIV/ADS (HEAIDS) programme recommended, amongst other things, that “teaching cannot be business as usual in the age of AIDS”. The HEAIDS report (2009) suggests that given the multiple and relentless challenges posed by the HIV / AIDS crisis for teachers, teacher roles and responsibilities need to mutate to include a range of skills, roles and sensitivities. This paper examines this recommendation from the point of view of a possible role-overload for the classroom teacher. A position is taken that piling yet more work and responsibilities on the shoulders of already over-burdened teachers, fatigued by the requirements of the country’s Outcomes-Based Education (OBE) curriculum, could be counter productive. The paper concludes that other persons and professionals be brought on board to work with school-based support structures in mitigating and ameliorating the challenges occasioned by HIV and AIDS – rather than placing the classroom teacher at the centre of performing the multiple roles of caregiver, social worker, school psychologist, and others. A cooperative, Liaison Model is proposed.

**KEYWORDS:** HIV and AIDS; teacher education; teacher roles; school-based support committees.

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1 The report has been summarized above as the Lead article of this journal edition.



## INTRODUCTION

The state of the AIDS epidemic in the Southern African region has been described as serious (UNAIDS, 2000). Reports indicate that, in South Africa, many teachers are confronted with large numbers of learners made vulnerable by HIV and AIDS and that, often-times, these learners need much more than just pedagogical interventions; that most require additional support to cope with discrimination, abuse, rejection and lost childhoods, as they begin to assume the responsibilities of their deceased parents at an ever-increasing younger age (Ebersöhn & Eloff, 2002; Coombe, 2002; Bhana, Morrell, Epstein & Moletsane, 2006). World-wide, it is further reported that:

Numerous instances have been documented of children affected by HIV experiencing a range of subtle and more obvious forms of violence, from rejection, name-calling and physical aggression, to not being able to participate in physical education or share sanitary facilities, to the denial of education. (UNESCO, 2004: 11).

In South Africa, it is reported that “the level of stigmatisation and silence around HIV and AIDS ... [as well as] HIV and AIDS related suffering and vulnerability make it harder for children – and indeed adults – to ask for help and to access support” (Bialobrzeska, Marneweck, Mhlanga & Mphisa, 2009: 16). Further, Govender (2008) reports that provincial departments of education often lack the human resources and other forms of support, such as guidance and counselling, to adequately care for learners affected by HIV and AIDS – thereby leaving teachers with no choice but to inadvertently fill the gap. Hence, in the absence of other relevant professionals, teachers find themselves playing the roles of social workers, general and grief counsellors, school-based guidance and counselling psychologists, healthcare workers and caregivers – giving hope, information and comfort (Coombe, 2002; Bhana, Morrell, Epstein & Moletsane, 2006; Hoadley, 2007; Theron, Geyer, Strydom & Delpont, 2008). In addition, it is reported that teachers find themselves having got to support these learners with other necessities of life – such as food, accommodation and even payment of school fees, as a way of mitigating the adverse effects of HIV and AIDS, and ameliorating further suffering and unspeakable hardships (Boler & Carroll, 2003; Bhana *et al.*, 2006). Without the intervention of teachers, it is believed that the situation would remain hopeless and unmitigated – particularly in rural schools and other under- and poorly-resourced schools.

In all this, it is envisaged that children orphaned by HIV and AIDS stand out as a unique group:



Orphans are different from other vulnerable children in that they have lost a parent. They are grieving. Grieving is a process, and some children never stop grieving. If they are not helped to overcome this grief, it can become psychologically disabling and they are unlikely to become fully functioning members of society and the economy. For this reason orphaned children need psychosocial help, especially in cultures where adults do not talk to children about death and where children are discouraged from self-expression (Boler & Carroll, 2003: 2).

The expectation that teachers must play an expanded role is not only limited to thinking within South African education circles. Coombe and Kelly (2001: 440) report, for instance, that Zambia's draft HIV/AIDS strategic plan for education encourages community participation in addressing problems related to HIV/AIDS. The plan calls for all schools and colleges to participate in home-based care and other forms of response to the AIDS-related needs of their communities.

Kelly (2000: 2) makes this point more poignantly as follows:

Education in a world with AIDS must be different from education in an AIDS-free world. The content, process, methodology, role and organization of school education in a world with HIV/AIDS have to be radically altered. The entire educational edifice has to be taken down. Every brick examined and where necessary re-shaped before being used in a new structure that has not yet been designed.

UNESCO (2004: 8) echoes the same sentiments in the following statement:

Students, families, communities, teachers and administrators understand that the seriousness of the epidemic requires new thinking about the educational content of HIV/AIDS curricula. Where there may have been resistance in the past to broaching sensitive issues such as sex and sexuality, there is now compelling evidence of the need to teach about HIV/AIDS in the context of how transmission occurs, how it can be prevented, and including negotiation and decision-making skills to help young people avoid unwanted sex or unsafe situations.

Further to the above, UNESCO (2004: 10) holds the view that "education systems must also target parents and extended families for adult learning programmes that encourage them to communicate openly, positively and accurately on HIV/AIDS". In this regard, UNESCO (2004: 10) further points out as follows:

Research in a number of countries has revealed that many parents want to talk to young people about sex, but do not feel that they have the appropriate skills to do so. The establishment of parental education programmes, parents' educa-

tion committees, and the involvement of parents in curriculum development can improve parents' own knowledge about HIV/AIDS and encourage support of school-based and non-formal education for their children.

At the same time, however, there also ought to be a realisation that the community itself is a potentially rich resource for the school through its cultural heritage, and that teachers must see the community as an asset which they can draw on, in addressing issues related to HIV and AIDS – as well as many other ills that may beset both the school and the community at large. Accordingly, recognising the contributions that communities can make and mobilising them towards a greater common good, will not only result in the empowerment of learners and their communities, but also ameliorate the impact of the HIV pandemic on learners, colleagues and community members.

However, there is a counter view that there is a limit to which teachers can meaningfully play this expanded role; that they should foreground their primary responsibility of ensuring that teaching and learning take place. Hoadley (2008: 151) puts this counter view as follows:

Can a child learn if the child is hungry, sick, cold or abused? In all likelihood, no. But the argument being made here is that **it is not the job of the school or the teacher to see to these needs**. It is crucial that they be met through the appropriate resourcing of schools and communities. It is a difficult balancing act: recognising that schools have a function in the context of the AIDS pandemic, while at the same time **protecting their core function which is teaching and learning**. [Emphasis added by present writer].

Hoadley (2008: 149) makes a further point, in this regard, that “teachers’ professional identities are defined first and foremost around teaching and learning. They view the identification, support and monitoring of vulnerable children as an additional and overwhelming task for which they are not equipped”.

In view of the above arguments and counter-arguments, the issue about the role of schools and teachers in mitigating the adverse effects of HIV and AIDS appears to be controversial, and therefore, warranting further reflection and investigation.

## **PROBLEM STATEMENT**

The above arguments underlie the very essence of the current debates and research activities regarding the role to be played by teachers in the era of HIV and AIDS – in particular, that the teacher ought to play the role of school psychologist, social worker, healthcare giver and others. HEAIDS (2009) suggests that given the multiple and relentless challenges posed by the HIV

crisis for teachers, teacher roles and responsibilities need to mutate to include a range of skills, roles and sensitivities – including raising HIV and AIDS awareness, teaching prevention, supporting infected and affected learners (and even colleagues), shouldering increased teaching loads as infected colleagues are absent, and coping with HIV-related sicknesses and deaths affecting learners, colleagues and communities. In this vein, HEAIDS (2009: 16) proposes a *model of professional practice in the age of AIDS*, which foregrounds the teacher roles (preventive agent; caregiver), teacher sensitivities (awareness, with regard to vulnerable learners and colleagues, gender issues, cultural heritage, contextual assets and constraints) and teacher agency (willingness to reflect and act).

The essence of the HEAIDS model, is that teachers must now play an expanded role that embraces the roles that, in normal times, would have been discharged by other professionals. As pointed out above, there is a counter view to this (Hoadley, 2008). In concurrence with this counter view, the present writer also contends that the envisaged expanded role carries the real danger of overburdening the classroom teacher, who is already reeling under a heavy load of duties and responsibilities occasioned by the demands of the OBE instructional system. The cornerstone of the curriculum reforms in South Africa has been characterised by a shift from learning that emphasises *memorising facts* to *learning for understanding and application* (Department of Education, 1997). This shift has placed a lot of pressure on teachers with regard to lesson preparation, implementation and evaluation. Within the aegis of the new curriculum, much more detail and diversity has to be worked into the activities than was previously the case. The OBE curriculum is resource-based – suggesting that in the preparation of lessons, the teacher must procure and organise a rich, appropriate and responsive learning environment for the diverse needs of his/her learners. Certainly, it was much easier previously when lessons were mainly frontal and teacher-centred. As Welch and Gultig (2002: 3) observe, “the story of teacher education in South Africa since 1994 is one of flurried activity and deep anguish. The activity has been most evident in policy-making and a rather brutal rationalization of the teacher education system”.

Hoadley (2008: 151) makes a similar observation:

... teachers are struggling to teach, learners are failing to learn and school managers are battling to run efficient and effective organisations. Given these difficulties, it is clear that additional resources need to be allocated to schools if they are going to be able to provide support to vulnerable children. In the context of HIV and AIDS and a largely dysfunctional school system, additional roles, responsibilities and resources cannot be expected of schools. Instead, ways need to be found to *support* schools in becoming supportive of vulnerable children.

Beyond the South African shores, McLaughlin (2003: 18) concurs and points out that “any hurried administrator or teacher will be quick to tell you, schools can’t do everything to meet the needs of contemporary youth. Schools are often overloaded and under-funded as they tackle the job of preparing young people for the future”.

This paper problematises the notion of an expanded and mutated role of the teacher, to include those of social worker, general and grief counsellor, school-based guidance and counselling psychologist, healthcare worker, caregiver, and others. As such, the author takes issue with the legitimacy of what appears to be the main reason for this expanded role – i.e. that in many parts of the country, particularly rural areas, teachers are the only professionals on site to give support of any kind to these learners. Accordingly, the paper critically examines this line of thought and looks at the implications of entrenching such an expanded role on classroom practice.

## **RESEARCH QUESTIONS**

From the points raised above, two questions arise:

- What is the official role that South African teachers ought to play in the world with HIV and AIDS?
- What types of relationships ought to be in place between teachers and other professionals in mitigating the negative impact of HIV and AIDS?

These two questions have guided the discourse of this paper.

## **RESEARCH METHODS**

This is a conceptual paper – an opinion piece, seeking to provide answers to the above research questions. The first question is addressed through a literature study, examining what the literature says and contrasting this with what obtains on the ground. The second research question is addressed by way of a conceptual model, developed and proposed, also from the literature study.

## **THE TEACHER’S ROLE**

The first research question deals with the official role that ought to be played by South African teachers in the world with HIV and AIDS. In addressing this question, one is compelled to look at the legislative and policy framework within which teaching in South Africa occurs. Broadly speaking, the role of teachers in the prevention of HIV infections is based on the belief that the ‘education vaccine’ is yet the best preventative

measure. Although Vandemoortele and Delamonica (2000) note that existing evidence does not allow us to draw exact conclusions regarding the efficacy of the ‘education-vaccine’ against HIV there is, nonetheless, a strong view that this vaccine is better than nothing at all. Related to this, Kelly (2000) reports that, in Zambia, the decline in the prevalence rate for 15-to-19-yearold women in Lusaka was more marked for those with secondary and higher levels of education than for those who had not proceeded beyond the primary school level. In line with this, Coombe and Kelly (2001: 441) content that:

Becoming literate is arguably the most basic change that education effects. A literate person can garner and internalize information from a wide variety of sources. Moreover, mastering basic literacy and numeracy skills requires many years of close attention to data sources and helps people develop the ability to analyse and evaluate information. In turn, the intellectual skills developed in acquiring basic literacy and numeracy help people assess information related to HIV/AIDS.

However, it is noteworthy that empirical knowledge about HIV and AIDS, *per se*, does not automatically lead to changes in behaviour that will protect people against infection. As such, it is important to acknowledge that knowledge ought to be complemented by changes in attitudes and values – thereby resulting in appropriate decisions being taken by the people who possess the espoused knowledge. This is more so, considering that the hidden curriculum of institutional cultures and the attendant organisational milieu make a deep and lasting impression on students’ attitudes and values. Nonetheless, it does appear that early sensitivity to information and knowledge about HIV and AIDS does make a difference – as noted by UNESCO (2004: 9):

HIV/AIDS education taught before young people become sexually active does not result in an earlier age of sexual debut, and in fact it may have the opposite effect of delaying the initiation of sexual activity and encouraging protective behaviour upon sexual initiation. Schools and other learning places have an obligation to equip students with these facts and skills for life, including how to avoid coercive and unwanted sex.

Accordingly, UNESCO goes further and recommends a more holistic approach involving “school policy development, school environment (including safe water and sanitation), skills-based health education, and school-based health and nutrition services” (2004: 9). In addition, UNESCO has taken a position which “promotes quality education as a human right and supports a rights-based approach to the implementation of all educational activities” (UNESCO, 2004: 4).

From South Africa’s legislative point of view, a number of pieces of legislation bear reference to the discussion at hand, directly or indirectly. Bialobrzeska, et

al (2009: 1) summarise the South African policy framework on the mitigation of HIV and AIDS into three themes, namely (a) a human rights and inclusive approach to education and training, (b) the roles of the School Governing Body (SGB) and the School Management Team (SMT), in mitigating the impact of HIV and AIDS, and (c) the notion of schools as centres of community life.

Taking the *human rights* angle, South Africa's context is defined and guided by the prescriptions of (a) the United Nations Convention on the Rights of the Child, to which the country became a signatory in 1994, (b) the African Charter on the Rights and Welfare of the Child, (c) the country's Constitution (Act No. 108 of 1996), (d) the South African Schools Act (No. 84 of 1996), (e) the *Admission Policy for Ordinary Schools* (DoE 1998), (f) the National Education Policy Act (No. 27 of 1996), (g) the *Education White Paper 6: Special Needs Education, Building an Inclusive Education and Training System* (DoE 2001), and (h) the National School Health Policy and Implementation Guidelines (Department of Health, 2002).

For its part, the South African Schools Act (No. 84 of 1996) mandates that the rights of all learners must be upheld and that intolerance and discrimination must be combated. More specifically, the Department of Education outlined its response to the HIV/AIDS pandemic by stipulating that each school governing body (SGB), acting within its functions under the Act, shall “give operational effect to the national policy by developing and advocating an HIV and AIDS implementation plan that would reflect the needs, ethos and values of a specific school or institution and its community within the framework of the national policy” (DoE, 1999: 6). It was further mandated that each SGB establish its own health advisory committees or draw on the “expertise available to it within the education and health systems”, where the establishment of its own committee is not feasible (DoE, 1999: 16).

In the same line, the National Education Policy Act (No. 27 of 1996) does two things: (i) sets out the rights of every child to basic education and equal access to educational institutions, and (ii) seeks to ensure that no person/child is denied the opportunity to receive an education to the maximum of their ability as a result of any physical disability” (Bialobrzaska, *et al*: 2).

On its part, White Paper 6 provides for the establishment of “district-based support teams ... to provide an integrated, community-based support service” (Bialobrzaska, *et al*: 2). Within the context of this White Paper, it is understood that this role is to be played by district-based education authorities. The White Paper further states, in part, that it is necessary to establish systems aimed at identifying “orphans, coordinate support and care programmes for



such learners, put into place referral procedures for educators, and develop teaching guidelines on how to support orphans and other children in distress” (DoE, 2001: 34).

From the point of view of policy, White paper 6 focuses on the importance of the notion of inclusivity in the provision of education, and as an imperative for meeting the diverse needs of learners within a framework of non-discrimination on any grounds whatsoever. In this regard, the White Paper envisages that schools must remove all barriers to learning by providing for such learning environments as those that maximise and amplify the “participation of all learners in the culture and the curriculum of educational institutions and uncovering and minimising barriers to learning” (DoE 2001: 6–7). Quite importantly, the National Policy on HIV/AIDS for Learners and Educators (DoE, 1999) “provides comprehensive regulatory guidelines pertaining to the rights and treatment of learners, students and teachers who are HIV-positive” (Bialobrzaska, *et al*: 2). Accordingly, both the National Policy on HIV/AIDS for Learners and Educators (DoE, 1999), and the Norms and Standards for Educators (Republic of South Africa, 2000), obligated teachers to prevent discriminatory practices and the stigmatisation of learners and colleagues who might be infected or affected by HIV and AIDS (Hoadley, 2007). The National School Health Policy and Implementation Guidelines encouraged “schools to establish school-based support teams to respond to the health and other barriers vulnerable children face” (Hoadley, 2008: 137). Indeed, as UNESCO (2004: 10) points out, there should never be any instances of children (or anyone for that matter) being treated differently on account of their HIV status:

Differential treatment of children affected by HIV begins to put forward the notion at an early age that people affected by HIV do not have the same rights as others, and this must not be tolerated. A quality education is one that seeks to ensure that all learners, regardless of sex, age, religion, HIV status, sexual orientation or family background, for example, have the same possibility to learn.

With reference to the school system, the Norms and Standards for Educators (Republic of South Africa, 2000) provide that teachers:

- uphold the constitution and promote democratic values and practices in schools and society;
- show sensitive to the diverse needs of learners (cultural, social, sociological, psychological or otherwise), including those which may present barriers to learning;

- practise and promote a critical, committed and ethical attitude towards developing a sense of respect and responsibility towards others
- demonstrate an ability to develop a supportive and empowering environment for learners and respond to the educational and other needs of learners, as well as fellow educators;
- create an appropriately contextualised and inspirational learning environment;
- communicate effectively, showing recognition of and respect for the differences of other,
- demonstrate sound knowledge of the subject content;
- demonstrate applied competence in the principles, strategies and resources appropriate to teaching within the specific context;
- show applied competence related to the interpretation of learning programmes;
- design original learning programmes;
- identify the requirements for a specific context of learning and select and prepare suitable textual and visual resources for learning;
- select, sequence and pace learning in a manner sensitive to the differing needs of the subject / learning area and learners.
- manage learning in the classroom;
- carry out classroom administrative duties efficiently and participate in school decision making structures – against the need to adhere to democratic principles, support learners and colleagues, and respond to changing contextual circumstances and needs.
- adhere to the instructional processes and procedures relevant to the discipline, subject, learning area, phase of study, or professional or occupational practice;
- demonstrate applied competence with regard to different approaches to teaching and learning (and, where appropriate, research and management), and how these may be used in ways which are appropriate to the learners and the context.
- demonstrate applied competence with regard to assessment, including the importance of providing helpful and timely feedback to learners.
  - design and manage both formative and summative assessment in ways that are appropriate to the level and purpose of the learning, and meet the requirements of accrediting bodies.
  - keep detailed and diagnostic records of assessment.



- interpret and use assessment results to feed into processes for the improvement of learning programmes.
- engage in on-going lifelong personal, academic, occupational and professional growth through pursuing reflective study and research in their learning area, in broader professional and educational matters, and in other related fields.
- develop supportive relations with parents, other key persons and organisations based on a critical understanding of community and environmental development issues – paying particular attention to critical community concerns, such as HIV and AIDS.

It would appear that it is the prescription in the last bullet above that has led to the huge expectation on teachers to play a role that has now been interpreted differently by different readers. There is now a dominant view that in the age of AIDS, teachers need to play the role of *agents of prevention*, healthcare givers, social workers, school psychologists, and others – and that they are, in this regard, *professionally obliged* to teach their learners about safer sex, healthy sexuality and HIV prevention (Car-Hill & Peart, 2003). What is not clear from this expectation is whether or not this obligation falls on all teachers, or only on those specialised to teach about HIV and AIDS. Certainly, clarity on the matter is needed to ensure that all teachers understand their role the same way, and that this role is comparably similar for rural, peri-urban and urban teachers. In particular, to over-burden rural teachers with extra duties and responsibilities, beyond those performed by their urban and peri-urban counterparts, would not be a fair way to address the challenges posed by HIV and AIDS. In any case, rural teachers already battle with many other elements and challenges that their counterparts elsewhere are spared – such as poor accommodation, travelling long distances to and from school without any reliable transportation in most cases, lack of health care facilities within reasonable reach, poorly resourced schools, and many more.

So, although it may be a noble expectation that teachers cultivate, encourage and promote positive and supportive interactions within the school environment, often times, an interpretation is made in terms of which the teacher's role in 'educating for prevention' and mitigating the effects of HIV and AIDS on learners and colleagues is made to spill over into the community, and across to services that would be more meaningfully and better rendered by other professionals.

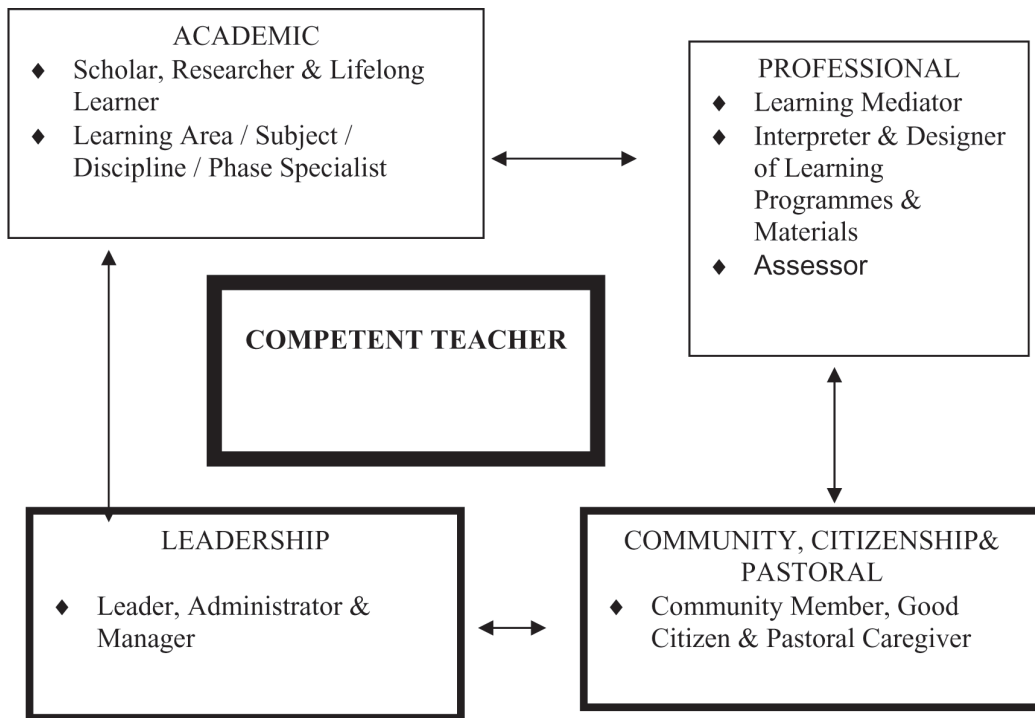
All-in-all, however, the policies reviewed above occasion that "a broad, non-discriminatory approach is taken [with regard] to those infected and/or affected by HIV and AIDS" (Bialobrzeska, *et al*: 2). How this is done, it would appear,

will depend on how the school system responds and interprets the various pieces of legislation and policies.

*Contextualising the Role of the Teacher in the World with HIV and AIDS*

The second research question being addressed in this paper relates to the types of relationships which ought to be in place between teachers and other professionals in order to appropriately and adequately mitigate the negative impact of HIV and AIDS. Further to the various perspectives encapsulated in the literature presented above, it would be useful to take the seven legislated roles of educators in South Africa, as a point of departure.

In a nutshell, the seven roles of educator are: (a) learning mediator; (b) interpreter and designer of learning programmes and materials; (c) leader, administrator and manager; (d) scholar, researcher and lifelong learner; (e) community, citizenship and pastoral role; (f) assessor; and (g) learning area/subject/discipline/phase specialist. Conceptually, these seven roles may be grouped into four broad areas as follows:

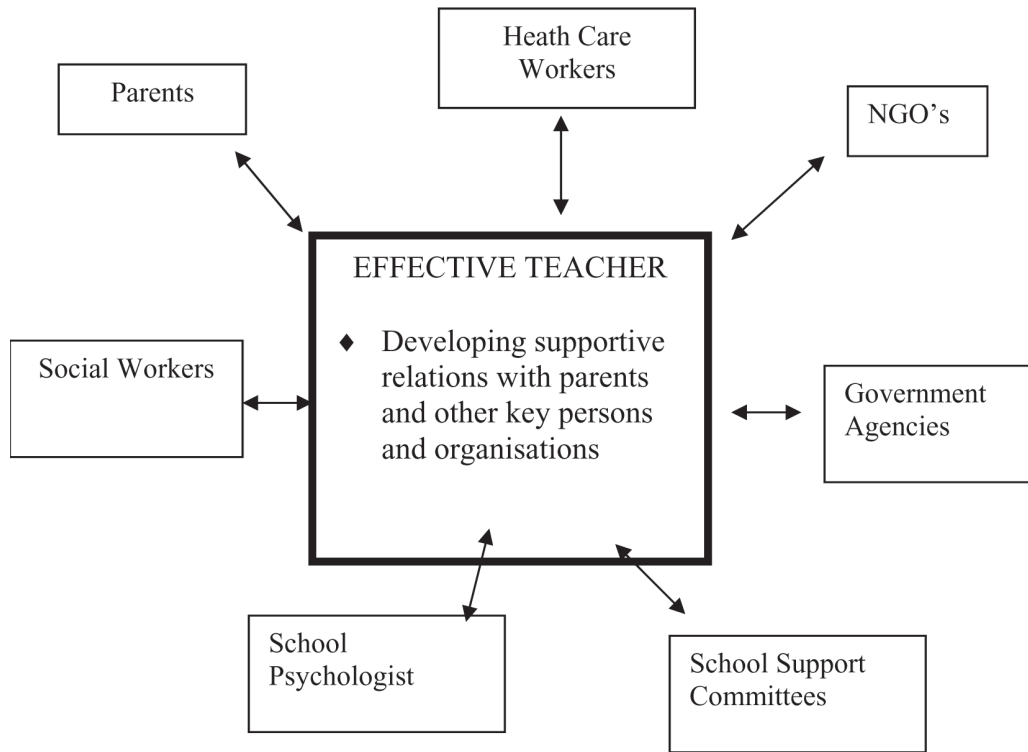


**Figure 1: A summary of the seven roles of educators (South Africa)**

Within the prescriptions of the Norms and Standards for Educators (Republic of South Africa, 2000: 4), the role of the teacher as a community member, model citizen and pastoral caregiver is highlighted as follows (with special mention of HIV and AIDS):

Within the school the educator will demonstrate an ability to develop a supportive and empowering environment for the learner and respond to the educational and other needs of learners and fellow educators. Furthermore, the educator will develop supportive relations with parents and other key persons and organisations, based on a critical understanding of community and environmental development issues. One critical dimension of this role is HIV/AIDS education. (Republic of South Africa, 2000: 4).

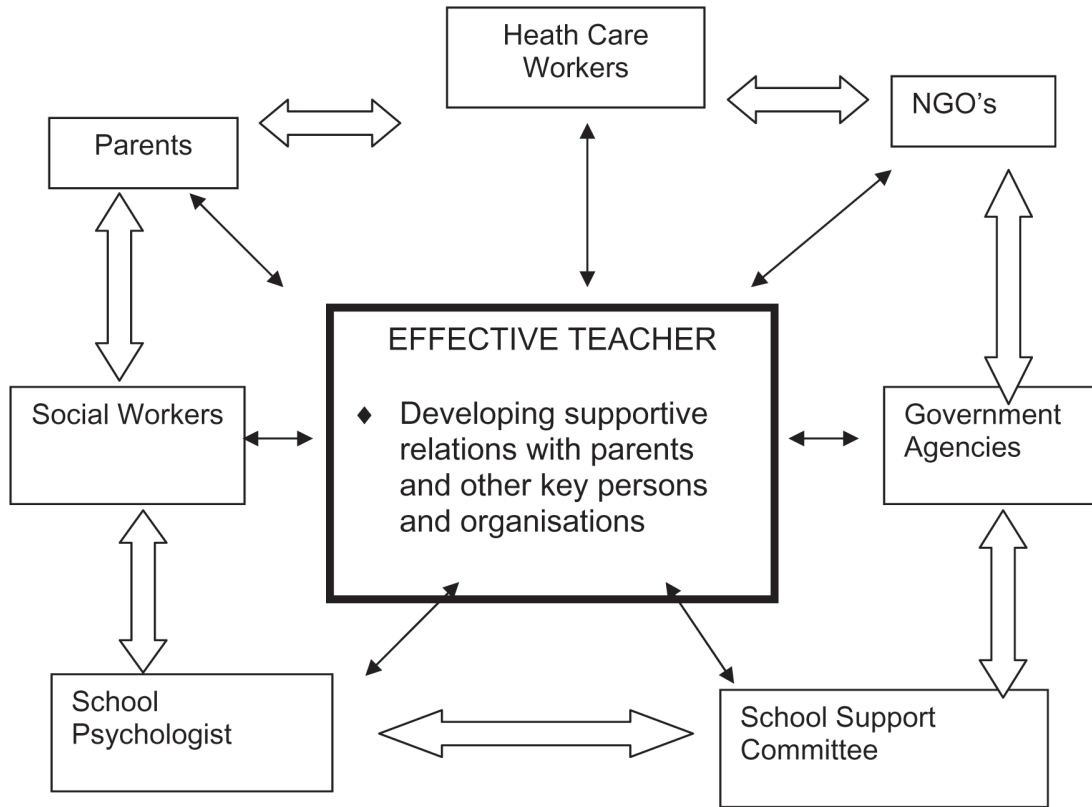
This role may be depicted as in Figure 2.



**Figure 2: The teacher-centred partnership role model for mitigating HIV and AIDS.**

In this model (i.e. Figure 2), the teacher is at the centre of developing supportive relations with parents and all the other key persons, organisations and professionals. The model essentially says that to conquer the HIV and AIDS

scourge, the teacher needs to coordinate his/her efforts with the indicated persons, institutions and bodies, as opposed to taking on the responsibility of mitigating the adverse effects HIV and AIDS single-handedly. However, in this model, the teacher interfaces with each of these professionals without any coordination being fostered among the various professional bodies themselves. To improve on this, Figure 3 is presented as the preferred model, as it leads to a better coordinated system of intervention.



**Figure 3: An integrated liaison and referral teacher role model for mitigating the adverse effects of HIV and AIDS.**

This model is based on the principle of “sums of individual parts being greater than the whole” – so to speak. In this regard, it is envisaged that liaison with the individual stakeholders, without fostering cooperation amongst them – as well as eliminating (or at least reducing) redundancies and duplication of effort, will result in a less efficient and effective system; whereas making all these stakeholders work together has the potential of attaining greater economies of both skill and scale – thereby leading to greater efficiencies, effectiveness and benefits.

In the opinion of the present writer, the HEAIDS model (HEAIDS, 2009) attempts to officialise and consolidate an abnormality by suggesting that in the absence of other professionals, teachers must move in to fill the void. In this regard, Figure 3 is presented as a counter model, based on the argument that the solution to the absence of other professionals, as one of the key arguments for the HEAIDS model – particularly with regard to rural schools, is not to overburden teachers, but to make the services that need to be discharged by other professionals available. Accordingly, this model emphasises the importance of the complementary roles that should, and ought to, be played by school-based support structures and other community-based professionals. As such, it is herein argued that the role of the teacher should be that of a liaison and facilitative one, rather than one that places them in a position where they end up being pseudo-professionals, discharging roles which fall outside their expertise. Not only will such an effort lead to personal and professional burnout, but this could have dangerous consequences of professional impropriety in the areas where the teachers attempt to fill gaps for which they are not professionally trained. In the opinion of the writer, the *integrated liaison and referral model* proposed here will make it possible for the classroom teacher to handle not only matters of HIV and AIDS, but also other matters which should dutifully be discharged by other trained professionals.

Central to this model is the view that the issues of HIV and AIDS can better be conquered when all the key role players join hands and work together – teachers and school authorities, other professionals, government officials and the community.

This is consistent with Fullan's three stories of educational reform:

... the first story, the 'inside' story, which shows that there is no substitute for internal development; and the second, the 'inside-out' story, which demonstrates that schools cannot develop on their own and need assistance from parents and the community ... [and the] third story, the 'outside-in' story ... [which] strongly supports the notion of significant support, monitoring and provision of infrastructure by the DoE (Bialobrzeska et al, 2009: 17).

In fact, some of the support required to effectively address the many adverse effects occasioned by HIV and AIDS sometimes goes beyond the remit of the DoE, suggesting a much more broadened approach to the issues. Bialobrzeska et al (2009: 18) make this point as follows:

The present research demonstrated that much of the support that schools need, in order to address the issue of HIV and AIDS and the range of socio-economically related challenges that face schools, falls outside the actual remit

of the DoE. For example, it is important that the following departments also provide support: Health (access to clinics and health care), Water (access to drinking water), Social Development (access to social grants), and Welfare (access to social workers). Linking with the SAPS would also serve to ensure the safety and security of the schools. The DoE needs to forge links with these departments and services on behalf of schools.

At the school level, it can neither be doubted, nor denied, that the role of the **school** is to teach – including teaching about HIV and AIDS. Certainly, it would be inconceivable, and indeed controversial and irresponsible, for anyone to argue that teachers and other specialised **school** personnel must refrain from, or ignore, the need to educate, teach and inform learners, colleagues and the community about HIV and AIDS. The areas to be covered in such instruction would normally include the biomedical, transmission, prevention, social (including issues of stigma and discrimination), psychological, and other aspects of the pandemic. The emphasis must be on the school, not the teacher – for, in the school are, or ought to be, specialised personnel and bodies / organisations that ought to play various roles – such as the school psychologist, school nurse, school Health Advisory Committee, and others, whose work cannot be reasonably be taken over by just anybody else, no matter the level of such a person’s enthusiasm. The argument that these specialised personnel are not found in every school, does not mean the solution lies in extending the roles of every other teacher to cover for this void – even as a last resort.

The emphasis on the school system means that DoE officials must provide for what the school needs to perform its functions proficiently. This includes ensuring that the types and numbers of personnel required for each school environment are provided. For example, it might be the case that, given the devastating effects of HIV and AIDS on schools and communities, schools now need to have social workers. In this case, social workers must be employed in the schools; the same with healthcare workers, and so forth.

Hoadley (2008: 149) puts this point succinctly as follows:

The role of social workers or support personnel in schools is important. Unless we take the need for these additional personnel in schools with high concentrations of vulnerable children seriously, we risk spending a lot of money, time and effort organising people into new structures and around new roles that they are simply unable to take on.

Although Hoadley’s comment refers to social workers, it has a wider application for any other category of professionals that may now be required in the schools – in the era of HIV and AIDS. This approach is likely to yield better results than focusing on expanding the roles of the classroom teacher.

The DoE (2000) refers to the role of the school as a centre for community life in the Implementation Plan for Trisano 2000-2004, in terms of which the **school system** was urged to urgently and purposefully deal with the HIV and AIDS emergency. Accordingly, it is important to emphasise that the ‘school system’ is not the same thing as ‘the teacher’. In particular, it should be noted that caregiving to people living with HIV and AIDS is associated with high levels of stress – mainly due to “the progressive, long-drawn and terminal nature of the infection” (D’Cruz, 2002: 1). To expect teachers to perform the role of caregiver may be emotionally straining to the point of the classroom teacher being prevented from discharging the very primary duties and responsibilities for which they were initially trained, and primarily employed.

In line with the emphasis on the school as the main organ to address the issues of HIV and AIDS education, UNESCO (2004: 14) avers that such a focus will ensure that all the following four important facets of education, related to HIV and AIDS, are attained:

1. Knowledge: the essential cognitive achievements that all learners should reach (including literacy, numeracy, core subject knowledge);
2. Skills or competencies: a secure command of how to solve problems, to experiment, to work in teams, to live together and interact with those who are different and to learn how to learn;
3. Values: solidarity, gender equality, tolerance, mutual understanding, respect for human rights, non-violence, respect for human life and dignity; and
4. Behaviours: the willingness to put into practice what has been a learned, actual change in behaviour and the reinforcement of appropriate behaviours.

It should also be remembered that HIV and AIDS are not the only issues that the school system is required to address. As the government, itself, observes, “HIV and AIDS are not the only issues that the school is urged to tackle. The school is also mandated to address issues of violence, drug abuse and poverty” (Republic of South Africa, 2000: 10). One can, therefore, see the difficulty of devolving all these responsibilities to the teacher, as opposed to using the school system as the rallying point for addressing all these issues – individually and collectively.

A related point to note is that even with regard to the teaching role of the teacher, there is a strong suggestion that this role must be performed by specially trained teachers. In support of this view, Reddy, James and McCauley (2005: 3) report that in their study, teachers felt “unsure about details of some topics, drawing some learners into classroom discussions, dealing diplomatically with learners’ beliefs about HIV/AIDS, and managing those learners that felt HIV/AIDS was



not something that affected them”. Most of the teachers felt that they needed to be supported with more factual information about HIV/AIDS and preferred expert health care workers to address this aspect of the programme. Reddy, *et al* (2005) further found that the success of the Life Skills Grade 9 curriculum, which they were investigating, depended on a number of factors – including the following:

- Trained teachers who were committed to the programme
- Providing teachers with moral, materials and technical support
- Dedicated time and teachers for implementation
- Both life skills and information must be sufficiently addressed
- Different needs of individual (and groups of) learners must be identified and addressed.

We may deduce from these findings that the route of specialist teachers for this ‘learning area’ may be more fruitful than putting pressure on every teacher to handle matters of HIV and AIDS, beyond what they need to be able to render quality education which takes into account the special circumstances of learners. Such a position would be in line with the contention by Page, Ebersohn and Rogan (2006: 105) that “teaching about HIV and sexual behaviour requires particular skills, and not all teachers can or want to teach it”.

The importance of teaching about HIV and AIDS as a specialised field of study and, therefore, using specially trained teachers, is also echoed by UNESCO (2004: 9) in their observation that “the challenge remains of finding the most effective way to bring this learning into the curriculum, and there is now a strong argument not to integrate HIV/AIDS education across subjects as it tends to get too diffused and, therefore, is not sufficiently effective”. Indeed, this is the critical point of this paper. Teacher education (TE) institutions prepare teachers for the different learning areas and subjects of the school curriculum. One such ‘learning area’ should relate to matters of HIV and AIDS, requiring specialised teachers who will be better placed to ensure that the intended learning outcomes (affective and cognitive) are realised. Of course, one challenge that arises from this position concerns teaching at the primary school level where in many countries the same teacher is expected to handle all learning areas or subjects. At this level the practical and realistic position may be that all the teachers for primary schools be trained adequately to handle this learning area, as well as they do the others. However, even in such cases, there is no reason why specialised teachers cannot be employed, not necessarily for each school, but even for clusters of schools. This is where TE should play its critical role – i.e. ensuring that such teachers are well prepared for their school

role as specialist teachers of this learning area. For the rest of the teachers, a general level of awareness may be sufficient to enable them to deliver quality instruction in the other learning areas or subjects – but taking into account, and embracing, the overall spirit of the Norms and Standards for Educators (Republic of South Africa, 2000).

Finally, and as the HEAIDS Report (2009) avers, teacher awareness of the complex reality of HIV would be incomplete without a critical understanding of their own positions and vulnerabilities in relation to the pandemic. This suggests that teacher competence, in the times of HIV and AIDS, requires teachers to deeply reflect on their own lived experiences, assumptions, beliefs, values, fears, sexuality, actions and interactions. Such deep introspection would ideally translate into modified practices, both on the personal and professional levels.

## CONCLUSION

In conclusion, it may be said that the present writer sees the role of the teacher, *vis-à-vis* issue of HIV and AIDS, as a curriculum matter in that the school curriculum should always respond to the changing circumstances of society for it to remain relevant to the times. As UNESCO (2004: 8) points out, “the epidemic is forcing teacher trainers and curriculum planners to reassess what is being taught on the subject of HIV/AIDS. Appropriate and relevant education about HIV/AIDS that is age and sex specific must be considered”. Hence, in these times of HIV and AIDS, the school curriculum ought to incorporate aspects of HIV and AIDS, as it should other pertinent topics whenever new challenges arise – be they relate to the changing subject matter content or any other aspects of the *macro*, *eco*-, *meso*- and *micro* levels of our existence (Page, et al, 2006: 106).

Certainly, the central purpose of education, and hence teachers, is to educate. This point is succinctly made by Page, *et al* (2006: 106) in their observation that “the role of education is to help learners reflect on their particular ecosystem, and to gain knowledge and skills to cope, so that each learner is equipped to behave in an HIV-safe manner”. Hence, although other professionals may not be *on site* in the majority of poor and rural schools, the central role of the teacher cannot be conceptualised differently between those that teach in well-resourced schools – whose learners have access to school psychologists, healthcare workers and social workers – and those that that teach in schools that are less privileged. It would be wrong to place the burden of caring for learners from child-headed households (as a result of parents having perished from HIV / AIDS-related illnesses – or for whatever reason), ill-disposed colleagues (suffering from HIV and AIDS-related conditions – or from whatever

else); parents of learners in the community dying from HIV and AIDS-related illnesses – and so-forth, on the shoulders of the classroom teacher, on account that the other professionals who would have played these supportive roles are not on site. Certainly, the solution does not lie in the teacher shouldering the responsibilities of other professionals, but rather on ensuring that the other professionals are made available to play their roles and render the services they ought to discharge.

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# The effect of hands-on activities on secondary school biology students

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## ABSTRACT

Educationally, it has been held for a long time that students are motivated more by *doing* than *listening* in order for them to relate what they have learnt to real life situations. This study examined the effect of integrating hands-on activities in biology lessons at the secondary school level. The study followed a quasi-experimental, pretest-posttest comparison (control) group design, involving two groups of senior secondary (SS) II biology students. The first group consisted of 34 students (Experimental) and the second group had 33 students (Comparison). The study adopted quasi-experimental design involving two treatment groups – Group A (The Experimental group followed a curriculum centred around many hands-on activities, while the Comparison group followed a conventional instruction (mainly frontal teaching). Two statistical hypotheses were tested, and the findings indicated that the Experimental group achieved significantly higher in the posttest than the Comparison group. In addition, qualitative data were collected, and these showed that students in the experimental group demonstrated a much more pronounced appreciation and relevance of science, in general. They also thought that scientific experimentation helped them learn science better, and they enjoyed working and studying in groups., valued diverse class time with very little lecture, were more confident, and were more interested in discussing science with others than the students in the conventional teaching. There were no gender-based differences in achievement. Some recommendations are made.

**KEYWORDS:** Hands-On Activities, Active Learning, Science Process Skills.

## INTRODUCTION

As an undergraduate teacher education student, one learns many different teaching strategies to use in the primary and/or secondary school classroom to promote meaningful learning. However, it is often frustrating for most science education students to learn all these great and enlightened teaching techniques during training and then not see them practised by the lecturers in the undergraduate science courses at the University. During this study, a group secondary of students arrived in class ready for a ‘typical science lecture’ in which they could sink into their chairs and learn passively as the researcher had done in training. However, to their surprise, the students immediately found themselves participating in enquiry-based laboratory exercises, discussions and other activities that encouraged them to work together to construct knowledge and become actively involved in the learning process. Many of these students came into the classroom disdaining science as too monotonous and too difficult to learn. However, they left excited about the materials and looked forward to sharing their knowledge with their future students.

Hands-on activities are related to Gagne’s SAPA (Science – A – Process Approach) perspective and Piaget’s theory of cognitive development – as well as principles of constructivist teaching and learning. Hands-on learning is an important aspect of the current constructivist epistemologies that suggest that people construct their own understandings of the world, as Flick (1990, p.23) states, “exemplary science learning is promoted by both hands-on and minds-on instructional techniques - the foundations of constructivist learning”. Flick (1993, p.14) expresses this point in more detail as follows:

After a quarter of a century, the familiar phrase hands-on science is now a part of the everyday discussion of science. Teachers, administrators, publishers, and trade books all refer to the importance of hands-on activities in science instruction. This is nothing short of a revolution. Descriptions of science education at all pre-college levels have shifted from vocabulary and text material to activities, inventions, and even project-based Olympics.

Indeed, science education has become widely influenced by integrating hands-on activities as an integral part of science lessons (Gregorio, 2005). Accordingly, this paper reports findings of a study that sought to raise the standard of science teaching by integrating hands-on activities in a senior science II biology class. This involved both teaching/learning and assessment. Hands-on activity teaching and learning focus on student centre activities, and can help students better understand new concepts – thereby increasing the efficiency of teaching activities.



Hands-on learning means different things to different people. James Rutherford, Director of the Science Reform Initiative – Project 2061, describes his view of hands-on science. “Hands-on quite literally means having students ‘manipulate’ the things they are studying - plants, rocks, insects, water, magnetic fields - and ‘handle’ scientific instruments - rulers, balances, test tubes, thermometers, microscopes, telescopes, cameras, meters, calculators. In a more general sense, it seems to mean learning by experience” (Doran, 1993, p. 5). For others, the phrase has merely become a slogan and is often used to describe any activities in classrooms that use materials. As a slogan, it can easily become a fad. Hands-on learning, however, is not merely manipulating things. It is engaging in in-depth investigations with objects, materials, phenomena, and ideas and drawing meaning and understanding from those experiences. Other terms for this are enquiry learning and minds-on learning (Kamishina, 2005).

The importance of student investigation of basic scientific principles cannot be overstated. Hands-on learning is the only way students can directly observe and understand science. As students develop effective techniques for observing and testing everything around them, they learn the *what*, *how*, *when*, and *why*, of things with which they interact. These experiences are necessary if the youngsters of today are to remain “turned-on” to science and become scientifically literate (Doherty & Waldron, 2008).

There is no doubt that there is more emphasis on hands-on materials than in the recent past. That does not mean, however, that hands-on science activities ever passed away. Furthermore, good science programs cannot exist without hands-on; the researchers do not think it will ever pass away. The researcher does think that we must continue to emphasize the necessity of ‘hands-on’ in the science curriculum, and the researcher truly hopes the ‘hands-on’ component of science teaching can be sustained at the secondary school level.

A hands-on approach requires students to become active participants instead of passive learners who listen to lectures or watch films. Laboratory and field activities are traditional methods of giving students hands-on experiences. With the advent of classroom technology, students can also now participate in non-traditional forms of hands-on education through, for instance, the use of computers. In general, technology extends hands-on learning to include minds-on skills. Programmes that are fun and clearly result in developing the curiosity, competency, creativity and caring of learners must, by definition, represent appropriate educational practices.

Gender differences in science have long been discussed among educators and researchers. For Taiwanese eighth graders, there was a significant difference

of 17 scale-score points favouring boys in the Third International Mathematics and Science Study (TIMSS) 1999 science performance, while the difference declined to 1 point in TIMSS 2003 (Martin, Mullis, Gonzalez, Gregory, Smith, Chrostowski, Garden & O'Connor, 2000; Martin, Mullis, Gonzalez, & Chrostowski, 2004). This finding was consistent with previous research results. Overall, although research has demonstrated a decline in gender differences in science performance, female representation in science-related fields of study and employment is still low (Jacobs, 2005).

With respect to science achievement there has been relatively less attention paid to gender differences than in mathematics (Zhang, 1999). Recent analyses suggest that observed gaps are more consistent over time, tend to be strongest in physics and earth sciences than in biology and “life science” or general science (Steinkamp & Maher, 1983, 1984; Becker, 1989). The gap has been more persistent than in mathematics. Bruschi and Anderson (1994) found that the early male advantage in physical sciences, as well as earth and space science became more substantial with age. Females were favoured in the science of nature in all age groups (Lauzon, 1999). The 1995 TIMSS results showed virtually no differences in performance between boys and girls in grades 3 and 4, only a slight difference in grades 7 and 8 (in science more than mathematics). More substantial differences occurred in the final year of secondary school, particularly in advanced mathematics and physics. The TIMSS Repeat (1999), concentrating on grade 8 students, showed a gap favouring boys in science but parity in mathematics performance. Most recently, the Organization for Economic Cooperation and Development (OECD) through its Programme for International Student Assessment (PISA), released mathematics, science and reading test results for 15-year-olds. No gender differences in average mathematics and science performance scores were observed in any of the Canadian provinces.

## CONCEPTUAL FRAMEWORK

This study is based on theoretical notions by Gagné regarding science teaching and learning. The *Science: A Process Approach* (SAPA) notion was one of the most pervasive examples where Gagné’s ideas were applied to classroom practice, and researched, in a large-scale curriculum project. This project was conducted under the auspices of the American Association for the Advancement of Science (AAAS), Commission on Science Education.

In the 1960s and early 1970s the implementation of SAPA-based science curriculum materials was influential in many schools and colleges, and represented a significantly large scale curriculum effort utilising Gagné’s theories and

research in the areas of problem solving and scientific enquiry. Gagné's view of a process approach to science foregrounds scientific enquiry, and is based on students having a large knowledge base that they subsequently utilise to make and then test inductive inferences. The underlying foundation for the process approach is hierarchical, and presumes that learners have the prerequisite process skills as background. Gagné (1965) maintains that the process approach is a middle ground between the 'content approach' and the 'creative approach' and "it substitutes the notion of having children learn generalisable process skills which are behavioural specific, but which carry the promise of broad transferability across many subject matter" (p.22).

It can also be said that SAPA and its orientation to teaching elementary science and scientific enquiry, although first published in the sixties, remained immensely influential in science texts and other commercially published science materials well into the 1980s. Andrew Ahlgren of AAAS, co-author of *Science for All Americans*, provided further testimony to Gagné's influence on science curriculum, as well as his indirect influence on mathematics and technology curricula (A. Ahlgren, October 3, 1994 personal communication).

Hackett (1971) provides another example of the use of Gagné's theories on a large scale curriculum project in a public school setting. Although her work was primarily directed toward reading and communication skills curricula, she provides ample evidence of the application of Gagné's theories to social studies and as well as mathematics. Hackett's experiments and curriculum projects focused on a performance-based approach that had many similarities to the outcome--based education movement of the late 1980s and early 1990s.

## THE PROBLEM

It has been observed that the natural curiosity of students, manifested in their eagerness to explore and understand their surroundings, is often diminished by instruction by the school system that rarely encourages enquiry and discovery. In a typical classroom, students are seldom encouraged to use the attributes of the scientific method to solve problems relevant to their perception of the world. As a consequence, the necessary science process skills are sparingly acquired by most students. Instead, the majority of students learn by rote and repetition from teachers who exercise authoritarian control over the learning process. This runs contrary to what most educational psychologists and other scholars espouse (e.g. Doherty, 1992a; Driver, 1989; Gagné, 1989; Gregorio, 2005; Talanquer, 2006; Wandersee, Mintzes & Novak, 1994). These authors recommend the use of 'hands-on' activities, which invariably refers to 'active learning', as already explained under Conceptual Framework – whereby

“hands-on” has to do with working on/with things, leading to construction of meanings.

Most educationalist hold the view that students are motivated by solving real world problems and that, consequently, they often express a preference for *doing* rather than *listening*. It is common cause that when students are not engaged in meaningful discussions or concrete, hands-on activities, they tend to get bored easily, and some even fall asleep. Therefore, this calls on educators to ensure that their students are actively engaged at all times – mentally and physically, as appropriate.

## **AIM**

Generally, this study set out to analyse the effect of integrating hands-on activities into science lessons for SS II biology students.

## **RESEARCH OBJECTIVES**

Specifically, this study sought to address the following research objectives:

1. determine the effectiveness of the hands-on activity teaching approach on student performance in SS II biology, vis-à-vis the conventional approach; and
2. ascertain if gender-based differences existed in the performances of the SS II biology students with regard to the two instructional approaches.

## **RESEARCH HYPOTHESES**

In line with the above two research objectives, the following hypotheses guided the study at the 95% level of significance (i.e.  $\alpha = 0.05$ ).

1. There will be no significant differences in the performance of students following the two teaching approaches – i.e. hands-on activity teaching versus traditional frontal teaching.
2. There will be no significant difference in the performance of male versus female students following the “hands-on activity teaching” and “traditional frontal teaching” approaches, respectively.

## **RESEARCH METHODS**

The design of this study was a quasi experimental, pretest-posttest comparison (control) group design, involving two groups of SS II biology students.

### *Research Sample*

The research sample consisted of 67 SS II biology students made up as follows: 19 males and 15 females (34 total) comprising the Experimental group; and 17 males and 16 females (33 total) for the Comparison (Control) group.

### *Instrumentation and Data Collection*

Data to address the research objectives, and test the research hypotheses, were collected by way of a Researcher Made Achievement Test (RMAT), covering the content as outlined below under Treatment Conditions. The RMAT consisted of 20 items worth four points each, for a total score of 80 points. The assessment instrument was given to the students prior to the hands-on activities (pretest) and then after the activities (posttest). Four experts in science education and two in measurement and evaluation validated the instrument for the study. The Kuder Richardson formula 20 (K-R 20) for multiple choice test estimate of internal consistency of the RMAT was calculated at 0.82. In addition, there was a survey questionnaire given to each student.

### *Treatments*

The Experimental group followed a curriculum centred around many hands-on activities, while the Comparison group followed a conventional instruction (mainly frontal teaching). The topics covered were: Invertebrate Diversity, Diffusion, DNA extraction from cheek cells and demonstrations involving Inhalation and Exhalation in humans. The same topics were taught to both groups and lasted 12 weeks. In ensuring that the two groups were treated according to the defined treatment conditions, the Experimental group learned from actual materials – i.e. they were provided with earthworms, snails, crayfish, crickets, glucose, starch, and iodine, hand lenses, test tubes, bleach, alcohol, rubber bands, water, measuring tape and containers. On the other hand, the Comparison group was provided with only the paper and pen representations of these materials (i.e. pictures and other textual materials).

### *Instruction for the Experimental Group*

This subsection describes the materials used and processes followed with regard to the Experimental group.

**Invertebrate diversity** – materials used included medium-sized containers, a large-sized rectangular container, plastic tray, hand lens, rulers, de-chlorinated tap water, earthworms, snails, crayfish and cricket. Students circulated among several stations around their classrooms observing earthworms, snails, crayfish and crickets. Regarding the process, at each station, the students observed the external appearance and the undisturbed posture and behaviour of each animal,

and then recorded their observations in the appropriate table – starting with the phylum to which each invertebrate belonged.

**Diffusion** – materials used included – starch, glucose, iodine and water. Students were given tubes of synthetic membrane with a solution of *starch and glucose*. They then placed the tube in a beaker of *iodine* water to determine whether starch or glucose diffused out of the tube or if iodine diffused into the tube.

**DNA Extraction from Cheek Cells** – materials used included: cup with sports drink, liquid dish soap, meat tenderizer, ethyl alcohol, ice cubes, tub for dirty test tubes, bleach, small test tubes, test tube rack, fliptop micro centrifuge tubes, transfer pipettes, gloves. Students obtain a cup containing a sports drink. Thousands of cheek cells were availed with the sports drink in order to extract enough DNA to see. To achieve this, the sports drink was swished around in the mouth vigorously for at least one minute, then spat back into the cup. A small amount of detergent was then added to a test tube. The glove was then put onto the hand holding the test tube, and a pinch of enzyme (meat tenderizer) was then added to the test tube. With the gloved thumb (or palm) covering the top of the test tube, the tube was gently inverted five times to mix. The mixture was then allowed to settle for at least 10 minutes. The glove was then removed and discarded. Using a pipette, cold rubbing alcohol was then slowly added to the contents of the test tube, allowing the alcohol to run down the side of the test tube so it formed a layer on top of the soapy liquid. More alcohol was added until about 2cm of alcohol had been added to the tube. Alcohol is less dense than water, so it floats on top. The test tube was left undisturbed for 10 minutes, allowing DNA molecules to clump together where the soapy water below met with the cold alcohol above; the clumps of DNA were seen as white strands.

**Demonstration of Inhalation and Exhalation** – materials used were: 4oz baby bottle (cylindrical) without a wide mouth, one-hole rubber test tube stopper, drinking straw, balloons, soldering iron to melt the bottom of the baby bottle off, rubber bands and tape.

To create the lung model – students melted off the bottom of the baby bottle with soldering iron; cut the neck off one balloon and stretched it over the bottom of the baby bottle, and secured it with a rubber band. This functioned as the diaphragm. To construct the lung portion of the model, a 3 inch piece of straw was cut and put through the hole in the rubber stopper, so that there was 1 inch sticking out the top. With tape the second balloon was attached to the piece of straw sticking out of the bottom of the rubber stopper. The rubber stopper with balloon was then inserted into the baby bottle and pushed down until the rubber stopper was well secured. To inflate the lung balloon the diaphragm balloon was pulled down; to deflate diaphragm balloon was simply released.

### Data Analysis

The hypotheses were tested using Analysis of Variance (ANOVA). Qualitative data from the questionnaire were analysed by teasing out themes from the statements made by the respondents about the instructional processes that they had just followed. Some quotations are given below to augment the results emanating from the hypothesis testing.

### Instruction for the Comparison Group

This subsection describes the materials and processes followed with regard to the comparison group. For this group, the materials used included the chalkboard and charts for invertebrate diversity, diffusion, DNA extraction from cheek cells and demonstration of inhalation and exhalation. Participants copied notes from the chalkboard and made references to the charts.

## RESULTS

The results of the study are presented in the tables below. The first two tables present the means for the two treatment conditions. This is then followed by ANOVA tables, and then the interpretation thereof. The results are presented with reference to the hypotheses being tested.

**Table 1: Mean Scores on the Pretest**

TREATMENT CONDITION	Male	Female	Group Means
Experimental	14.84	15.14	14.99
Comparison	13.54	14.00	13.77
<b>Gender-Based Means:</b>	<b>14.19</b>	<b>14.57</b>	

Table 1 shows the pretest group means to have been 14.99 and 13.77 for the Experimental and Comparison groups, respectively. The gender-based means are also presented. The same as been done with regard to the posttest means – presented in Table 2.

**Table 2: Mean Scores on the Posttest**

TREATMENT CONDITION	Male	Female	Group Means
Experimental	27.40	28.00	28.70
Comparison	19.15	19.04	19.05
<b>Gender-Based Means:</b>	23.28	<b>23.52</b>	



### Hypothesis Testing

The analysis then moved to the testing of the two hypotheses undergirding this study. The results are presented below.

Ho1: There will be no significance difference in the performance of students following the two teaching approaches, i.e. *hands-on activity teaching* versus *traditional* frontal teaching.

Table 3 presents the results for this hypothesis.

**Table 3: Analysis of Variance (ANOVA) between Teaching Methods**

Resource	SS	DF	MS	F	P
Teaching Methods	70.044	1	1570.044	11.026	.001
Within (Error)	9255.986	66	142.400		
Total	138784.00	67			

Table 3 shows that the comparison of the two group means for the Experimental versus Comparison groups, the ANOVA yielded a statistically significant difference ( $\alpha = 0.001$ ). Consequently, the null hypothesis of no significant difference was rejected in favour of the alternative, suggesting the existence of a statistically significant difference between the two teaching approaches.

Table 4 gives the results of the ANOVA test for the second hypothesis:

Ho2: There will be no significant difference in the performance of male versus female students following the hands-on activity teaching' and traditional frontal teaching approaches, respectively.

**Table 4: Analysis of Variance (ANOVA) of Significant Difference between Males and Females**

Resource	SS	DF	MS	F	P
Gender	10.546	1	10.546	.063	.802
Within (Error)	10815.484	66	166.392		
Total	138784.000	67			

The p-value of 0,802 shows that there was no statistically significant difference between the males and females taught by way of the two approaches. This led to the acceptance of the null hypothesis, i.e. that there is no statistically significant gender-based differences in the two instructional approaches.

## INTERPRETATION AND DISCUSSION

Results in Tables 1 and 2 represent the means as calculated from the raw data. The results in Table 3 show that a significant difference existed in the performance of the two groups following the respective treatment conditions as the computed value of 11.03 was significantly greater than the critical F value of 2.21. The experimental group (i.e. students taught using hands-on activities) displayed increased independence, responsibility and self direction over the course of the work. Further, their co-operative skills improved. The role of the teacher changed by becoming less directive and more facilitative, more diversified, less of a task master and more of a resource person and guide.

These findings corroborate those reported by Gregorio and Kanishina (2005), Doherty and Waldron (2008) where they found positive results for student achievement and increased participation on the hands-on teaching activities as against the conventional frontal method. These findings are also in agreement with Gagne's SAPA theory which focused on performance based approach. Students have a large knowledge base that they subsequently utilize to make and then test inductive influences. His whole idea was applied to classroom practice that enhances learning and achievement

From the qualitative data collected, it was evident that the students from the Experimental group appreciated the relevance of science and how conducting their own scientific experiments helped them learn and analyse scientific data. The students were much more confident in their ability to discuss, evaluate, teach and model science to others including their fellow students. The students further reported that they enjoyed working and studying in groups and valued diverse class time with very little lecture. They were also more interested in participating in discussion about science with friends, family, and the general public and learning more about science throughout their lives/careers. This is evidenced in the calculated F value of 11.026 which is far greater than the critical value of 2.21.

Table 4 showed no significant difference between the ANOVA analysis of the male and female students as the computed value of .063 is less the critical F value of 2.21. Although gaps in gender differences in mathematics and science achievement tests were observed in the 1980s and early 90s, recent evidence in both the U.S and Canada and as obtains in this study suggests that boys and girls perform about the same. This finding agrees with (TIMSS 1995) finding on mathematics and science study that showed virtually no difference between boys and girls in grades 3, 4, 7 and 8 in science and maths. Also no gender differences in average math and science performance were observed in Canadian

provinces in the Programme of International Student Assessment (PISA). The researcher is tempted to draw from this observation that gender differences in mathematics and science achievement are no longer important. It may then be safe, at this point, that gender differences in mathematics and science may now present a ‘monitoring’ issue, to ensure that no relapse occurs.

## CONCLUSION

This study would agree with other published studies showing that hands-on science teaching and learning increases the confidence in science of future secondary school students. The hands-on teaching students were more confident and interested in science and its relevance than a similar sample of students who learned similar materials in a conventional lecture class method. Since most of the hands-on activities were student led, in-class time was relaxing, enthusiastic, and interesting. Students in the experimental group were significantly more confident in their abilities to discuss scientific concepts, think critically about science, argue about scientific evidence, interpret tables and graphs, understand the math related to science, obtain scientific data, understand scientific research, pose scientific questions, work collaboratively on science and run simple experiments. These findings corroborate those of Doherty and Waldron (2008), where they found that hands-on learning is the only way students can directly observe and understand science. Students equally developed effective techniques for observing and testing everything around them, they learn the *what, how, when, and why* of things with which they interact. From this study, the researcher noticed that the students were eager to participate in the classroom activities and were surprised with their ability to understand science. The hands-on activities students generated thoughtful questions, worked with the material to develop understanding, and made conclusions about the information that they were presented. They ultimately made their learning meaningful, connected, relevant, and useful than those taught using the conventional lecture method.

## RECOMMENDATIONS

The researcher makes the following recommendations

1. Biology teachers should teach their students by using hands-on activities. However, cognisance needs to be taken of the need for lesson preparation time. As such, teachers will need more planning time and more instructional time than is usually allocated for them to integrate hands-on activities in their lessons.
2. Authors of Biology texts should try as much as possible to incorporate

hands-on activities in their books using locally made materials. This is important particularly considering that in developing countries the main resource for learning / teaching is usually the prescribed textbook, which are followed religiously by both teachers and learners. In this regard, a well written textbook (rich with exercises and hands-on activities) will prove to be an invaluable resource.

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# The effect of conceptual and procedural learning strategies on the study habits of Nigerian secondary school students in mathematics

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## ABSTRACT

This study examined the effect of varying learning strategies making use of procedural and conceptual learning strategies on secondary school students' study habits in mathematics. A total of 124 senior secondary school students, from Osun state in South-Western Nigeria divided into three groups were involved in this study. Two experimental groups were randomly assigned to the two learning strategies and the third group was the comparison group. The study adopted the non-equivalent pre-test, post test comparison group design. Intact classes were used, comprising science students only. The three groups were taught simultaneous linear equations. The study habits of students were assessed using a questionnaire. Both learning strategies yielded significant difference in students' study habits with the conceptual strategy having a higher score. The study concluded that students' study habits in mathematics could be improved using an innovative learning strategy.

**KEYWORDS:** Study habits, learning strategy, conceptual, procedural, achievement.

## INTRODUCTION

Research into study habits of students has been on-going for a long time. In the twentieth century, a number of studies reported some association between study habits and academic performance of students (Brown & Holtzman, 1955;



Chabazi, 1957; Diener, 1960; Ward, 1961). Hadwin and Winne (1996) defined a study habit as the selection and coordination of alternative study tactics in order to achieve a goal. Maree, Pretorius and Eiselen (2003) defined study habit as acquired yet consistent study methods aimed at effective learning. Some of the components of students' study habit that have been reported to have influence on academic achievement are studying alone, studying in a quiet environment, maintaining attention in lectures, preparing and keeping a time table of evening study, paying attention to details in textbooks, keeping methodical notes and allowing adequate time for the preparation of written work. It is postulated that the study processes used by a student during learning will be related to both the amount learned and the quality of his/her learning (Biggs, 1979). In mathematics, for instance, both the amount and the quality of learning a student attains are likely to have some role to play in determining the problem solving performance of such a student. Tuckman(1999), McCombs and Marzano(1990) reported that students' learning achievement depend on their attitude, motivation to succeed, and study habits or study skills that people employ to pursue the desired goal Since the knowledge and understanding of mathematics cannot be acquired passively (Bressaud, 1999), good study habits almost invariably include

- Solving non-routine problems
- Taking responsibility for ones learning
- Spending sufficient time studying mathematics
- Acquiring effective problem solving strategies.

Since problem solving ability is an integral determinant of students' achievement in mathematics, the study habit that leads to improved problem-solving ability could be the pivot for better achievement in mathematics. However, appropriate study habits may not be easy for students to develop. In the ideas of Kochlar (2000), students need to be guided in order to develop good study habits and adequate preparation to learn well – and therefore do well in examinations. A good study habit that leads to improved problem solving skills involves studying outside class time, commitment to understanding how and why a procedure works and reading for complete understanding by pausing to work through examples and asking oneself some critical questions. A study habit which promotes complete conceptual understanding, rather than memorisation during problem solving exercises, leaves room for the learner to understand the various choices that could be applicable in solving a particular problem. In addition, this enables one to be competent in handling problems, which have not been encountered previously since mathematics builds on itself, a problem

solver needs experience, and possession of this experience may take him/her to a more abstract problem solving level where the solution to a problem could be talked about without using mathematical notations.

Study habit has been reported to have significant influence on achievement of students in all school subjects. However, what is yet to be well explored is whether the study habits of students could be improved with the use of innovative teaching strategies and other carefully constructed / designed school work. In mathematics, for instance, an essential component of acquiring expertise in mathematical thought processes is problem solving. It is reasonable to assume that a person who wants to be a good problem-solver should develop good study habits. How much can it then be reasonably assumed that a student who is striving to improve problem-solving skills may also be inclined towards improved study habits? An attempt was made in this study to answer this question by making use of conceptual and procedural learning strategies to teach problem-solving skills to secondary school students and then finding out how much the study habits of students improved after treatment.

## THEORETICAL FRAMEWORK

The idea of conceptual and procedural knowledge dates back to 1949 when Ryle (1949) argued for the rejection of a particular philosophical perspective of Cartesian dualism. Cartesians argue for the duality of the mind and body that the mind and the body are distinct from one another. They believe that the mind is entirely responsible for thought and controls the body while the body “mindlessly” makes the mind’s thoughts come to action. Ryle disagreed with Cartesians and was in favour of uniting the mind and the body through the idea of intelligent action. He proposes that “knowing how” cannot be defined in terms of “knowing that”. Sheffler (1965) brings these ideas closer to what we now have by defining “knowing that” as knowledge of propositions of facts (conceptual knowledge) and “knowing how” as knowledge of procedures (procedural knowledge). In mathematics, these two forms of knowledge have two distinct goals of acquiring (i) knowledge of the content of mathematics and (ii) knowledge of the procedure of getting to the correct result of the mathematical process. Technically, these two goals may require different inputs from learners and as a result have implications on learners’ efforts in making the inputs. One of the efforts required by the learner is studying, and this usually culminates into a habit if consistently practiced. The focus of this study was therefore to find out how much the pursuit of either **conceptual** or **procedural** knowledge can influence how learners of mathematics study in order to attain their various goals.

The Conceptual Learning Strategy focuses on facilitating acquisition of mathematical knowledge as explainable concepts in terms of relationships between variables and not as knowledge of a body of rules or procedures or formulae that strictly have to be followed when solving mathematical problems which, is a major focus in the procedural learning strategy.

## **STATEMENT OF THE PROBLEM**

Students' academic growth is usually considered in totality rather than in isolation, following on specific subjects. When innovative ideas are conceived in an aspect of education, little attention is usually focused on how such innovations could benefit other aspects of students' learning. Studies have reported how improved study habits can raise students' level of academic achievement, but very little is known on how improved achievement in a subject could enhance the study habits of the students thereby potentially helping them in other subjects as well. Therefore, there is the question of how much students' study habits may be improved through training in problem-solving skills, using conceptual and procedural learning strategies.

## **PURPOSE OF THE STUDY**

The study was designed to find out if the study habits of students would improve when exposed to innovative learning strategies. Specifically, the purpose of this study was to:

- (a) find out if the study habits of students exposed to conceptual learning strategies (CLS) would improve after the treatment;
- (b) examine if the study habits of students exposed to procedural learning strategies (PLS) would improve after the treatment;
- (c) compare the relative improvement in study habits of students after exposure to the CLS and PLS, respectively.

## **RESEARCH HYPOTHESES**

In line with the above three purposes of this study, the following three statistical hypotheses were formulated:

1. There is no significant difference in the study habits of students taught problem- solving skills before and after the CLS intervention;
2. There is no significant difference in the study habits of students taught problem- solving skills before and after the PLS intervention; and

3. There is no significant difference in the study habits of students taught problem-solving skills using the CLS and PLS, respectively.

## RESEARCH METHODS

The various aspects of the research methods followed in this study are briefly summarised below under specific sub-headings.

### *Design, Population and Research Sample*

The study adopted a modified non-equivalent pre-test post-test comparison group design where three intact classes were purposively drawn from a population of Senior Secondary Class Two (SSII) in Osun State, Nigeria. The modification was the selection of science students into both the experimental and comparison groups. This was done based on the assumption that science students had similar characteristics in terms of attitude and readiness to the learning of mathematics. Therefore, science class selection would provide for uniformity of the three groups selected.

Three intact classes were drawn from three schools randomly selected from three local government area schools. Altogether, 124 students were involved in the study comprising 42 in Group 1 (CLS), 44 in Group 2 (PLS), and 38 in Group 3 (Comparison Group).

### *Interventions (Treatment Conditions)*

The three respective groups were taught the same aspects of simultaneous equations using the CLS, PLS and the Conventional Method. The materials used for the study included three instructional packages designed and validated for the teaching of CLS, PLS and the Conventional Method (CM). In the CLS group students were taught problem solving in the selected aspect of mathematics with emphasis on students' development of the content and techniques of solving problems in that aspect of mathematics. The teacher was to (i) emphasise mathematics as a relationship between variables and not as a body of rules to be memorised (ii) Teach students with diverse types of examples in which approaches used would differ, so that students would not have to memorise a particular procedure (iii) encourage students to think on their own and make constructive suggestions rather than the teacher always spoon-feeding students with correct ideas (iv) persuade students to be inquisitive and not just accept given ideas as they are. In the PLS group, the teacher was to teach students with the main focus on giving them an understanding of the process of getting the correct solution to a given problem, even if it involved students memorising the steps involved. A particular type of problem was to be treated severally so

that the process would become internalised in the minds of the students. The teacher was to be there for the students always to provide clues and assistance to students on any problem given. For the CM group, the teacher handled the class in his/her own conventional style, without any reference to any of the two earlier strategies. The teacher who handled the conventional group was asked to prepare the instructional package used for that group. The three instructional interventions ran for eight weeks, employing the services of three trained research assistants who were university graduate mathematics teachers.

### *Data Collection Instrument*

An instrument that assesses students' study habits; the Students' Study Habit in Mathematics Questionnaire (SSHMQ) was used for data collection. There were twenty items comprising this instrument – consisting of both positive and negative statements. The instrument was a five-point Likert scale with response options of Undecided, Never, Sometimes, Often and Always – adopted from Adeyemo (1986). The instrument has a reliability coefficient of 0.84 as well as established face and content validities. The SSHMQ was administered as both the pre- and posttest.

## **RESULTS AND DISCUSSION**

The results of the study are presented below under various sub-headings.

### *Pre-Test Hypothesis Testing*

The pre-test scores of the students on the SSHMQ were compared in the three groups using One Way Analysis of Variance (ANOVA). This was done to ascertain the initial equivalence of the three groups. A summary of the result of this analysis is presented in Table 1.

**Table 1: Summary Table of the statistical difference among the three groups on the SSHMQ at the onset of the study\_**

Source	Sum of Squares	df	Mean Square	F	Sig.	Result
Between	7.776 3031.668	2 121	3.888 25.055	0.155	0.856	p>0.05
Within	3039.444	123				

The result shown in Table1 indicates a non-significant difference in the study habits of students in the three groups. This result suggested equivalence of

the groups at the inception of the study, with regard to their study habits. The result provided the basis to assume that any differences subsequently observed in students’ study habits, after exposure to the respective learning strategies, could be due to the learning strategies.

**Hypothesis 1:** There is no significant improvement in the study habits of students taught problem-solving skills using the CLS.

This hypothesis aimed to examine the effectiveness of the CLS in improving students’ study habits. The pre- and post-test scores for this group of students were compared using the t-test statistic. The result of this analysis is presented in Table 2.

**Table 2: The t-test Summary Table of the difference in pre- and post-test study habit scores of students exposed to the CLS.**

	n	X	sd	df	t <sub>0</sub>	Sig.	Result
Pretest Scores	42	24.45	5.38	82	15.70	0.00	p<0.05
Posttest Scores	42	46.19	7.18				

Table 3 presents results showing a significant difference in the study habit scores of students before and after they were exposed to a problem-solving intervention using conceptual learning strategies  $X_2 = 46.19$ ,  $df = 82$ ,  $t_0 = 15.70$ ,  $p < 0.05$  ). This result shows that students’ study habits could be improved when they are exposed to learning strategies, such as the CLS.

**Hypothesis 2:** There is no significant improvement in the study habits of students taught problem-solving skills using the PLS.

This hypothesis examined whether or not there would be a significant difference in the study habits of students as a result of exposure to the PLS. Students’ study habit scores before and after exposure to the PLS were compared using the t-test statistic. The result of this analysis is presented in Table 3.

**Table 3: The t-test analysis of the pre- and post-test study habit scores of students exposed to the PLS.**

	n	X	sd	df	t <sub>0</sub>	Sig.	Result
Pre-test Scores	44	24.00	4.79	86	1.94	0.56	p>0.05
Posttest Scores	44	26.09	5.33				

The result in Table 3 shows a non-significant difference in pre- and post-test study habit scores of students taught following the PLS ( $X_1 = 24.00$ ,  $X_2 = 26.09$ ,  $df = 86$ ,  $t_0 = 1.94$ ,  $p > 0.05$ ). This result indicates a non-significant improvement in study habit scores of students after they were exposed to this approach, leading to the acceptance of the null hypothesis stated above.

### The Comparison Group

In the same vein, a statistical analysis of the difference in the pre-test and post-test study habit scores of students in the Comparison group, following conventional instruction was also carried out. The summary of this is shown in Table 4.

**Table 4: The t-test Summary results of the pre- and post- test study habit scores of students exposed to the CM.**

Group	n	X	sd	df	$t_0$	Sig.	Result
Pretest Scores	38	24.05	3.97	74	0.52	0.605	$p > 0.05$
Posttest Scores	38	24.58	4.82				

This result indicates that the conventional method did not improve students' study habit scores significantly.

**Hypothesis three:** There is no significant difference in the study habit gain scores of students taught problem-solving skills using the CLS versus those taught following the PLS.

This hypothesis tested the difference in the extent of improvement in study habits of students when they were taught using conceptual and procedural learning strategies, respectively. The hypothesis was tested by comparing the gain scores in study habits of students following the CLS with the gain scores of students in the PLS group. The t-test statistic was used for the analysis. This is because there was no significant difference in the pre-test and post test study habit scores of students taught with the conventional method. The result of this analysis is summarized in Table 5.



**Table 5: The t-test summary results of the study habit gain scores of students following the CLS versus the PLS.**

Group	n	X	sd	df	$t_0$	Sig.	Result
Gain Score in Conceptual Group	42	21.74	8.50	84	11.31	0.00	P<0.05
Gain Score in Procedural Group	44	2.39	7.30				

The result in Table 5 indicates a significant difference in the gain scores recorded by students in the CLS versus those in the PLS group ( $X_1 = 21.74$ ,  $X_2 = 2.39$ ,  $df = 84$ ,  $t_0 = 11.31$ ,  $p < 0.05$ ). This result shows that study habits of students were significantly improved with the use of the CLS, with regard to the teaching of problem solving-skills. As seen above, the improvement in study habits with the use of the PLS approach did not lead to statistically significant gains.

## DISCUSSION

The findings of this study have shown that students' study habits can be improved by exposure to well-designed, conceptually-based instructional strategies. The CLS was found to improve students' study habits when used to teach problem-solving skills and the improvement recorded was significantly better than that recorded with the use of the PLS. The essential features of the CLS involved students' development of competences in a number of skills – including the ability to: recognise, identify, explain, evaluate, judge, create, invent, compare and choose appropriate steps in solving mathematical problems which are all subject to how well a student studies. The opinion of Kochlar (2000) that students need to be guided well to develop good study habits, learn well and therefore perform well in examinations is buttressed by the findings of this study. This is because the requirements of conceptual learning strategies are that for students to do well in problem solving with emphasis on knowledge of the concept, students must be able to put in some extra efforts in the pursuit of mathematical knowledge, which amounts to the acquisition of concomitant profitable and transferable study habits. These habits include:

- Solving non-routine problems
- Taking responsibility for ones learning
- Spending sufficient time studying mathematics (Bressaud, 1999).

Furthermore, in the use of conceptual strategies, seriousness, concentration and commitment were required on the part of the learner so much so that while studying such dedication was expected of every student being taught using this strategy so as to succeed. Tuckman(1999) McCombs and Marzano (1990) have also reported that there is a relationship between work engagement and motivation to succeed. When mathematics is taught in a way that ensures that students understand the concept rather than memorising, they will be motivated and this may in turn influence their engagement in mathematics in terms how much time and effort they invest in the study of the subject.

By comparison, however, the ultimate goal of the PLS was to ensure that specific procedures required in working out a mathematical task as a routine procedure, were mastered and executed with much fluency. This type of learning could, therefore, only require students to memorise. As such, some students could find this not to be challenging, and somewhat boring. An appropriate study-habit is usually considered something that is needed to be acquired as a result of necessity on the part of every mathematics student in order to succeed.

## **CONCLUSION**

This study concludes that students' study habits in mathematics can be improved with the use of conceptually-based instructional strategies that is innovative and that makes students to perceive mathematics as a subject that can be understood rather than one which has to be memorised always. In Nigeria, many students detest mathematics mainly on the belief that studying mathematics requires one to memorise a lot of formulae, facts and procedures. As such, many think mathematics is not a subject for everybody. The findings of this study are, therefore, very important for illustrating that teaching for conceptual understanding, if well designed and implemented, can result in the cultivation and development of good study habits. These habits can, in turn, alleviate the burden of studying based on memorisation. Study habits which are based on conceptual understanding are empowering to the learner – and once learners realise that they can actually understand mathematics without recourse to undue memorisation of formulae and set procedures, they're likely to deepen their liking for the subject. Indeed, success breeds more success, while continued pain breeds resentment and reinforces the avoidance reaction.

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# New trends in research: a shift towards community engagement

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## ABSTRACT

In the past, research has been about discovery of innovations and expanding our knowledge base. Research results were considered to be objective and were influenced by side issues such as the context in which the research was done. There has also been a strong but erroneous belief that scientific research is essentially a-moral and a-political. This belief has in the past resulted in the violation of the rights of researched communities, most of whom were poor and illiterate. This paper describes a planned follow-up intervention to a case study that investigated the nature of plants sold by medicinal plant sellers in KwaZulu-Natal (South Africa): how such plants were used, their present availability and vulnerability. Sub-issues to be investigated will include the identification of those involved in this trade and an exploration of harvesting methods employed. This paper is set against the backdrop of recent developments in South Africa and which supports the sustainable development of poverty-stricken rural communities. Such efforts will also explore how indigenous knowledge can be used to enhance the development of indigenous communities. The researchers also report on partnerships with the communities selling medicinal plants, established with a view to embarking on conservation of threatened species. Informed participation of medicinal plant sellers is considered to be important so as to ensure that they understand their responsibility to conserve resources that form part of their livelihood.

**KEYWORDS:** Community development, indigenous knowledge, medicinal plants community engagement and conservation.

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## INTRODUCTION

Africans rely heavily on traditional medicine. This can be attributed to local availability, affordability, accessibility and local expertise among local communities (Maundu, Kariuki & Ejong-Matig, 1999). Various factors, including a high rate of unemployment, urbanisation, clearing of vegetation for agriculture and other land use and low levels of formal education have contributed to the high demand for medicinal plants. Together, these factors have resulted in the over-exploitation of medicinal plants by commercial gatherers who sell them for a living. Thousands of medicinal plants are harvested from communal areas in South Africa, thereby putting pressure on the species involved (Kalatwang & Düvel 2002). The main problem associated with the commercialisation of medicinal plants is unsustainable harvesting. This includes bulk collection of medicinal plants in the hope of gaining more profit. In some cases the commercial gatherers harvest the whole tree by ring-barking or uprooting, thereby causing low or zero regeneration of the medicinal plants in question. As a result, such plants are depleted to the extent that they become locally extinct or the genetic biodiversity of the plant species involved are eliminated.

## THEORETICAL FRAMEWORK

There are a number of principles that underpin the theoretical framework of this paper. The first principle relates to curriculum development in South Africa, is aimed at social transformation, which is necessary to address the legacy of apartheid which marginalised Black people and discriminated against them. Social transformation in education therefore aims at ensuring that the educational imbalances of the past are redressed and that equal opportunities are provided for all sections of our population. The principle of life-long learning is well recognised and acknowledged in this country. Jickling and Suave (2008), co-chairs of the 5<sup>th</sup> World Environmental Education Congress which was held in Montreal in 2008, state that environmental education contributes to the development of informed, enlightened and innovative citizens. These are citizens who are able to solve their local problems, use their resources sustainably and create peaceful and stable communities. In contrast, disturbing xenophobic attacks on foreigners have recently taken place in South Africa, which are not characteristic of stable communities living peacefully with one another.

The second principle concerns the role of indigenous knowledge in our society. This is a principle that highlights inclusiveness and that marks a major shift from the belief that only Western science contributes to a knowledge base that is credible. Many indigenous people have successfully managed the environment and encouraged sustainable ways of dealing with their environment.

Such ways of indigenous people have been looked down upon instead of being acknowledged and developed to contribute to diverse ways of effectively managing our fragile planet. Cobo (1987) complains that educated people do not understand the deeply spiritual and special relationship between indigenous peoples and their land as basic to their existence, which includes their beliefs, customs, traditions and culture.

A third pillar of the theoretical framework of this paper is the definition of environmental education (EE), which is stated as follows:

Environmental Education is the process of recognizing values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the interrelatedness among man, his culture and his biological surroundings. It is a life-long learning process that is graded at knowledge, understanding, skills and the fostering of values and attitudes towards the natural and man-made environment (IUCN, 1971).

The significance of the EE definition is the recognition of the interrelatedness among people, their culture and their physical environment. Irwin and Lotz-Sisitka (2000) that definition also refers to the fact that people hold values and attitudes which, *inter alia*, relate to the environment. That is why rural communities can be educated to develop positive attitudes toward their environment, and can be empowered to take a step further so as to use and manage natural resources responsibly. Mulemwa (2006) states that good quality science and technology education (and in the authors' view, good quality environmental education, as well) should equip learners not only with knowledge but also with attitudes and skills for a healthy lifestyle, social-economic survival, self-reliance and self-sustenance.

## **STATEMENT OF THE PROBLEM**

The results of a case study showed that the medicinal plant trade is dominated by poverty-stricken women. It was also discovered that harvesting methods as well as the practice of the medicinal plant trade were unsustainable. The issue raised by this paper is whether it would be both sustainable and ethical for the researcher to walk away from this situation. Temple, Story and Delaforce (2005), speaking on community engagement by universities in Australia, state that universities are increasingly playing (or ought to be playing) an integral role in their regions, thereby contributing to the sustainability, wellbeing and economic vitality of their communities while becoming catalysts for positive change and development.

There is a growing demand from the public for universities to cease being impractical ivory towers. This demand does not only appear on the national agenda of South Africa, but is an international issue of concern. The term ‘ivory tower’ designates a world or atmosphere where intellectuals engage in pursuits that are disconnected from the practical concerns of everyday life (<http://eA.wikipedia.org/wiki/Ivory.tower>). Universities need to explore opportunities for service and for the development of their communities and should also be catalysts for improvement in the poverty-stricken and marginalised communities in their midst. University engagement with communities can bring about new knowledge that is relevant to the needs of specific communities, thereby making learning relevant by enabling students to solve real-life problems. The University of Zululand’s mission statement includes the following clauses:

- To promote community engagement through mutually beneficial partnerships.
- To generate knowledge through publications, teaching and development, in partnership with the local and international communities.

In keeping with sentiments emanating from other universities, locally and internationally, the University of Zululand embraces the concept of community engagement so as to ensure their empowerment and development. Community engagement or development is supported by the Brisbane Declaration adopted by participants to the International Conference on Engaging Communities held at Brisbane, Australia, from 15 to 17 August 2005. Among issues adopted in the declaration were the following that are important in this context:

1. Acknowledgement of the universal interest and importance of a community engagement, founded in the inherent dignity of people values, rights and responsibilities of all people expressed in the Universal Declaration of Human Rights.
2. Underscoring that community engagement is essential to the achievement of the Millennium Declaration including the Millennium Goals of Development.
3. Affirms that effective community engagement generates better decisions delivering sustainable, economic, environmental, social and cultural benefits (<http://www.getinvolved>).

It is, therefore, clear that there is a convergence of thinking in different universities around issues of engaging in research that contributes to community development and empowerment.



## BACKGROUND TO THIS STUDY

The paper made use of the results of a case study of medicinal plant sellers involving 63 respondents selling different plant types at bus ranks in South Africa. The study explored the usage of medicinal plants, the parts of the plants that are used and the methods of plant harvesting. Personal data were collected by means of a questionnaire which sought information about those involved in the medicinal plant business, i.e. their sex, age and selling locations. Other data were collected through semi-structured interviews with the respondents.

Crucial to this paper, are the results of a study which showed that medicinal plant sellers were mainly elderly, poverty-stricken females. Of the 63 participants, 77% were women and only 23% male. It was also discovered that the plant selling methods of the respondents were crude and that they lacked business acumen. The respondents collected plants in bulk and their only concern was the potential profit. This is clearly an unsustainable practice driven by principles of commercialisation, as opposed to sustainable indigenous practices that avoid total destruction of the plants in question.

Those who advocate the recognition of indigenous knowledge (IK), realise that indigenous communities practised and promoted sustainable development. Gorjestani (2000) writing on indigenous knowledge for development, states that IK is a key element of the social capital of the poor and constitutes their main asset in their effort to gain control of their lives.

As the case study had revealed problems in the bulk harvesting of medicinal plants that threatened to drive certain plant species to extinction, a workshop was subsequently organised so as to allow the respondents to discuss the issue of sustainable harvesting of medicinal plants with the view to ensuring the sustainability of their business. The researchers involved two members of staff from the Department of Agriculture and Environmental Affairs (DAEA) in the workshop. It was interesting to note the excitement of participants when they saw the government officials. To the participants, the presence of these officials lent credibility to the meeting and they were therefore convinced that the workshop was significant. One of the government officials discussed the importance of communities taking care of their resources and making sure that these resources would be available, not only for the present, but for future generations as well. At the end of the workshop a joint committee consisting of medicinal plant sellers, researchers and the DAEA was formed. The committee undertook to ensure that future activities would be planned around the sustainable harvesting of medicinal plants. This partnership came at an opportune moment when the government also came to realise that communities needed

to become involved in the management of their resources. The South African Government now has a number of projects, such as community involvement in the rehabilitation of wetlands due to their importance in the maintenance of declining water supplies.

## **IMPLICATIONS OF THE CASE STUDY**

It would have been acceptable in a purely scientific research study for the researchers to have gathered information about the unsustainable practices of medicinal plant sellers, and to have left the issue there. However, new trends of thought about research have emerged, as captured by Crabb (2004) who, for example, states that the problems of poverty and the HIV/AIDS scourge have forced the Department of Science and Technology in South Africa to challenge scientists to adapt their research in order to address the country's social problems. Issues of sustainable development are prominent in making this planet a better world for everybody. Also, Agenda 21 – the sustainable development blueprint for the 21<sup>st</sup> Century, recognises in Chapter 36 that education, public awareness and training are critical aspects for sustainable development and that the participation and involvement of women, indigenous people and the scientific and technological communities are essential in its implementation (United Nations, 1992).

It is for the reasons discussed above that the researchers who investigated medicinal plant sellers are now involved with them in a partnership which seeks to cultivate medicinal plants as crops. The advantage to this approach is that the cultivation of medicinal plants as crops makes it easier to develop and improve strains of plant species, while reducing the need for wild collection (Ndawonde, Zobolo, Dlamini & Siebert, 2007). Wild collection exposes women to dangerous situations, e.g. rape and being attacked by wild animals. The researchers have developed a strong partnership with the respondents, to the extent that they now understand the consequences of unsustainable harvesting of medicinal plants. The respondents are willing to be the partners in the research. The information is mutually shared among the medicinal plant sellers and the researchers. For instance, while the other researcher is a facilitator and participant in the partnership, at the same time the researchers also learn from the medicinal plant sellers the indigenous ways of planting and managing crops, with the respondents as the instructors. Urmilla, Moodley, Traynor, Gausst & Chellan (2005) in addressing interdisciplinary/multidisciplinary research, state that the process of knowledge sharing and knowledge generation is increasingly taking place at the interface of traditional disciplines and approaches to scientific research, which is becoming more integrative. A

further crucial aspect of this type of research is that it encourages cooperation and collaboration of different stakeholders (Urmilla et al 2005). In the case of this study, the research stakeholders were the researchers, the medicinal plant sellers and the Provincial Department of Agriculture and Environmental Affairs of KwaZulu-Natal.

## **PROPOSED FOLLOW-UP STUDY**

This research project (in which the medicinal plant sellers are now collaborators with the researcher) has the following aims:

- Propagation of five selected medicinal plants at the University of Zululand medicinal plant nursery.
- Monitoring of the growth of the five selected medicinal plant species to determine the conditions in which they thrive.
- Determining the time in which the medicinal plants will be ready to be sold.
- Working with the medicinal plant sellers in order to cultivate the selected threatened medicinal plants at the University of Zululand's medicinal nursery.
- Assisting the medicinal plant sellers to cultivate the selected medicinal plants in communal gardens.

## **METHODS AND MATERIALS**

These are presented under a number of sub-headings below:

### *Questionnaire administration*

In the present research, a questionnaire will be used to establish the localities from which medicinal plants are harvested for subsequent sale at Mona Muthi market. The researchers will try to establish from plant traders whether the plants are collected from grasslands, wetlands or sub-tropical forests (or even from dune forests). Such information will help to establish whether the medicinal plants are xerophytes, hydrophytes or whether they can be grown in rocky places. This information will be considered in the preparation of a medicinal plant nursery. Information will be collected by means of structured or semi-structured interviews. This method of interviewing will be used because it enables the interviewer to establish rapport with the respondents while listening to them (Mugenda, 1996). The interview permits more complex questions than other methods of data collection since it is easier to probe further if there is something that the researcher wants to be sure of. The interviews will be conducted in IsiZulu and the information will be translated into English.

### *Ethical issues*

Information given in confidence will be kept confidential in order to protect the intellectual property of the respondents. As we know, indigenous knowledge is communal in nature and is not openly shared as in the case of scientific knowledge. Indigenous peoples usually consent to sharing their knowledge on an individual basis but not if it is to be commercialized, distorted, trivialized or otherwise debased (<http://www.siteresources.worldbank.org/INT/INKD-KNOWLEDGE/Research/generalguid.pdf>).

### *Propagation and cultivation of the medicinal plants*

The plants will be propagated by means of seeds and cuttings at three-month intervals in June, September and December. As many as 100 seeds and cuttings of the selected medicinal plants samples will be planted in pots to prepare them for transplantation. This will allow at least 25 seedlings to be cultivated in each time interval in the event that some of the seeds do not grow.

### *Communal demonstration garden*

A committee consisting of the researchers and the representatives of the medicinal plant sellers from areas close to the University of Zululand was formed in 2006. The duty of the committee is to oversee the establishment of the communal gardens in the localities of the participants. As soon as the researchers have successfully propagated selected medicinal plants (vegetatively), a workshop will be held during which the researchers will demonstrate necessary techniques to the committee members.

The garden will cover an area of 1000m<sup>2</sup>. The seedlings that are transplanted into the garden will not receive organic manure. There will also be no provision of shade in the garden. Plants will be watered for a short period, until they are established, and then they will be left to grow without irrigation. This method is supported by Hutchings and Crouch (1998), who believe that newly planted specimens should be carefully watered and tended until established, and then purposely be left to the elements. This is necessary because medicinal plants are known to convert primary metabolites such as starch and lipids into secondary metabolites (the medical component) when they are subjected to water stress.

In order to determine the marketable size of the medicinal plants, the following experiments will be performed in the garden. Seedlings will be weighed and their length and width will be measured before transplant.

*Growth experiments*

Plants will be divided into two groups, namely pot-grown and field-grown experiments. Each experiment will have the following treatment:

**Control 1:** Plants without manure but watered once a week

**Control 2:** Plants without manure but watered twice a week.

**Treatment 1:** Plants receiving manure and watered once a week.

**Treatment 2:** Plants receiving manure and watered twice a week.

**Treatment 3:** Plants receiving manure and not watered at all until they show symptoms of wilting.

Plants will be harvested at 30, 60 and 90 day intervals after transplanting. This will be done in order to determine in which planting season the medicinal plants have the best yield. There will be ten observations per treatment. The growth parameters that will be investigated include:

- (a) fresh weight of individual plant organs
- (b) dry weight (oven dried at 70°C to a constant weight)
- (c) plant height
- (d) branching pattern
- (e) number of bulbs/braches
- (f) leaf area index (determined using a leaf area meter)
- (g) chlorophyll content (determined using spectrophotometer)
- (h) Leaf water potential (determined by using a pressure bomb).

*Data analysis*

Measurements of tree densities, species diversity and richness of medicinal plants will be presented graphically. Numerical comparisons using graphs and tables on plant propagation, growth, yields and statistical inferences, such as the Statistical Package for Social Sciences (SPSS), will be used. Data on growth, morphology and physiology of medicinal plants will be analysed using a t-test as well as one-way ANOVA.

## COMMUNITY ENGAGEMENT

The main purpose for the inclusion of the communities in the propagation of medicinal plants is to correct past practices of exclusion of local communities in the process of decision making and general management of resources. There is a need to establish the principle of ownership of local resources by indigenous peoples so that the duty of preserving biodiversity does not become a duty of the government but a collaborative effort between government and local communities. Walker (2005) states that, historically, Australian education, just like South Africa in the apartheid days, excluded indigenous pedagogy through colonisation and assimilation leading to the cultural genocide of indigenous epistemologies. This is a powerful statement, but the good thing is that the world is beginning to realise the importance of recognising indigenous knowledge. Governments are also beginning to see the importance of involving communities in development issues because it is believed that sustainable communities make efficient use of natural resources, while promoting sustainable production, consumption, protection and improvement of biodiversity.

## CONCLUSION

The new trend in research is, therefore, a move toward multidisciplinary research characterised by the involvement of various stakeholders. Among the stakeholders are indigenous knowledge custodians. This type of research, therefore, acknowledges the world-views of different stakeholders and the fact that we can learn from one another irrespective of our cultures. Onwu and Mosimege (2004) in discussing IK, state that traditional indigenous knowledge developed through the close connectedness with the physical and social environment that people used to enjoy. Wolfensohn, the President of the World Bank as quoted by Gorjestani (2000), states that Indigenous knowledge *is* an integral part of the culture and history of a local community. We need to learn from local communities to enrich the development process. Basically, what this means is that there are competing perspectives and world views from which to understand and make sense of the world. Expanding information and the involvement of different stakeholders is the key to solving environmental problems, which include political and socio-economic problems.

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# An investigation into farm school parent governors' knowledge of school governance legislations

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## ABSTRACT

This study investigated farm school parent governors' knowledge of school governance legislations. An argument is presented that the understanding of the legal frameworks pertaining to school governance begins with the parent governors' understanding of the legislations that impact on school governance. Accordingly, this article reports on a study in which a quantitative approach was used to obtain information from farm school parent governors about their knowledge of school governance. On the basis of the findings, the article concludes that it is essential for farm school parent governors to be given necessary training so that they can have a working knowledge of the legislations that impact on school governance. This will enable them to perform effectively through the understanding of the legal processes and principles that determine the legality of their decisions.

**KEYWORDS:** Farm schools; legislation; parent governors; school governance.

## INTRODUCTION

Many states have established laws that govern education to include parents in the governance of schools (Potgieter, Mosoge & Mothaba, 1997: 44). The parent component in school governance is designed to bring about the democratisation of education, which encompasses the idea that the parents, as one of major stakeholders in schools, should be able to participate in the administration of the schools, which can be realised by the establishment of school governing bodies

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in which “. . . the number of parents must comprise one more than the total of other members of a governing body who have voting rights” (Republic South Africa, 1996c: 8). In 1996, the South African government introduced several reforms in the form of legislations and policies intended to democratise school governance. These reforms are catered for in the National Education Policy Act, the Education White Paper 2 and South African Schools Act (Catholic Institute of Education, 1997:11).

The fragmentation of the old South African education system along racial lines, entrenched the manner in which parent governors’ involvement in school governance existed. Under the apartheid regime, the participation of parents in school governance was limited and exclusive. The role of parents was limited to that of backbenchers and fundraisers only (Nzima, 2002: 43). Furthermore, parent governors were often appointed rather than elected. The present situation demands that all schools, including farm schools, must have democratically elected parent governors (Republic South Africa, 1996c:12). In this instance, parents, who previously had no legal authority on issues of school governance, are now legally required to be involved in the governance activities of schools. This involves policy-making, coordinating, controlling, and evaluation (Catholic Institute of Education, 1997:7) – duties that require competent and motivated parent governors. Taking into account the high rate of illiteracy and semi-literacy in farm school areas, this article aims to investigate the farm school parent governors’ knowledge of school governance legislations.

Gaganakis (1987:3) describes farm schools as schools that cater for Black children residing on White-owned farms. On the other hand, Nasson (2004: 1) in the similar vein trenchantly defines a farm school as a structure for formal school education in White agricultural areas located in the context of the farm and more precisely of the disciplinary social order, which farm life, produces. Ngwenya (1988: 1) adds that farm schools are schools for Black children on White-owned farms, jointly controlled by the farm owner and the Department of Education. The concept of farm schools is a joint venture of farm property owners and the Department of Education. According to Nasson (2004: 13), this system of schooling lies squarely within the wider institutional matrix of social forces and relationship in farm areas. Ngwenya (1988: 12) insists that this type of schooling is rooted in the structure of work discipline, social order and moral policing and in South Africa it was born into a situation of serious conflict and struggle between White farm owners and Black labourers (Graaff and Gordon, 1992: 211).

It should be noted that no particular attention to the training of farm school parent governors in school governance legislations is evident, yet farm school

parent governors are expected to make decisions which warrant their understanding of the legal principles and processes.

This article reports on a study in which quantitative methodology was used to obtain information from farm school parent governors about their understanding of the legislations and policies that have a founding impact on school governance. First, the background to the study is provided, next, an overview of parent governors' involvement in school governance and the genesis and the substance of the legislations and policies that impact on school governance are presented and the method of investigation and results are discussed. Finally, the implications of the findings are outlined.

## **BACKGROUND TO THE STUDY**

There are literally hundreds of books, journal articles, and stand-alone reports on the subject of parent involvement in education. These writings include research reports, expert opinions, theoretical papers, programme descriptions, and so forth (Epstein, 1995; Monadjem, 2003; Gokar, 2002 & Kogan, 1984). However, a cross-section of the field of education management reveals that very little research has been conducted on farm schools with regard to the farm school parent governors' knowledge of school governance legislations. Scientific studies on this research problem are not yet available. The dearth of literature on this research problem is itself an indication that research has to be done in order to provide more insight and improved approaches to this issue. This study seeks to fill this gap, and it is in this regard that the current research is deemed as an exploratory enterprise in South Africa specifically, and in the whole world generally. It is hoped that this study will make a great contribution to the improvement of school governance in farm schools.

The research studies have revealed that many governments have recognised the need for legislations to ensure that parents are intensively involved in school governance. This recognition is based on the realisation that parents have a right to play an active role in their children's education, and that parent governors may help alleviate some of the problems faced by learners (Monadjem, 2003:3). As Macbeth (1989:1) and Postma (1990:45) have observed, parents are first-line clients of the school and should be drawn into school activities not only in terms of auxiliary tasks, but also in the school management functions such as planning and organising, leading, controlling, and so forth.

## **AN OVERVIEW OF PARENT GOVERNORS' INVOLVEMENT IN SCHOOL GOVERNANCE**

Parent governors' involvement in school governance is undoubtedly one of the critical foci of education. This has become apparent with the establishment of education policies that emphasise parent involvement in school governance. For instance, Gasa (2000: 5) avers that parent governors are an integral part of school governance. States have a duty to improve and transform education in accordance with democratic values and principles. This means that the government is duty-bound to democratise school governance so that stakeholders such as parents are accommodated, therefore allowing them opportunity to make decisions about the way schools are governed. The most important duty of both the state and the parents is to provide the best possible education for all learners, and the best way to do this is by means of the formation of a partnership through the creation of governing bodies, where parents play a significant role (Catholic Institute of Education, 1997: 44).

Kogan (1984: 10) asserts that parent governors are part and parcel of the education system as they are part of the wider governing managerial structures through which there is a participation and representation of all social structures with an interest in education. On the same note, Macbeth (1989: 136) avers that the first duty of the parent governors is to represent the parent dimension of school governance. This notion is also emphasised by Potgieter et al. (1997: 23), as they assert that the parent governors represent the broad community spectrum such as the parents, private sector, the church, and so on. The general purpose of the parent governors as expressed by Potgieter et al. (1997: 24), is to perform management functions efficiently on behalf of the school for the benefit of the community. They are, therefore, placed in a position of trust towards the school and are expected to act in good faith to carry out all their duties and functions, and to be accountable for their actions. Parent governors need to understand their duties and should be able not only to interpret educational legislations and policies, but also to apply principles as contained in the legislations and policies to a particular situation.

## **SCHOOL GOVERNANCE LEGISLATIONS IN SOUTH AFRICA**

One of the prime examples of the constitutionalisation of South African education was the democratisation of school governance. The main aim of this section therefore is to focus on legislations enacted to democratise the governance of schools.

*National Education Policy Act: Act No. 27 of 1996*

The National Education Policy Act outlined the organisation, management, and governance of schools. It stipulated that education policies have to ensure broad public participation in the development of the education system and the representation of stakeholders in the governance of all aspects of the education system (Oosthuizen, 2004: 203). This Act for the first time provided for the need of parent involvement in school governance matters.

*Education White Paper 2: General Notice 130 of 1996*

The Education White Paper 2 aimed at transforming South Africa's pattern of school governance, since this was burdened with the legacy of the apartheid system. It aimed at doing so in accordance with standard democratic values and practices, and in line with the requirements of the Constitution (RSA, 1996b: 3). The document had limited but very significant objectives. It set out the policy of the government on the governance of schools, and the development of capacity for school leadership throughout the country. Furthermore, it aimed at providing an acceptable framework for the achievement of a truly democratic school governance system in a diverse society. The White Paper included a major role for parents in school governance, to be exercised in the spirit of a partnership between the state and a local community. Each public school would represent a partnership between the state and the local community. This concept was of fundamental value in reconciling the respective responsibilities of the government and the community. It was the basis for reconstructing the system of public education.

*The South African Schools Act: Act No 84 of 1996*

The essence of the South African Schools Act was to transform education away from the iniquitous policies of the past. Its main thrust was the normalisation of the South African education system; the advancement of the democratic transformation of the country; the combating of racism, sexism and all forms of unfair discrimination; the promotion of the rights of learners, educators and parents and most significantly, the involvement of parents in school governance (RSA, 1996c: 7).

Democratisation of school governance as stipulated in the South African Schools Act calls upon the parent governors to promote the best interests of the school, adopt a school constitution, develop the mission statement of the school, adopt a code of conduct for learners at the school, support the principal, educators and other staff of the school in the performance of their professional functions, recommend to the Head of Department the employment of educators

and non-educator staff at the school and determine the extra-mural curriculum of the school and the choice of subject options in terms of provincial curriculum policy (Republic of South Africa, 1996c: 10).

The following discussion focuses on other sections of the South African Schools Act that pertain to the school governance activities of the parent governors:

#### *Admission to public schools*

This section states that a public school must admit learners and serve their educational requirements without unfairly discriminating in any way. It further stipulates that learners may not be refused admission to a public school on the grounds that their parents are unable to pay the school fees (Republic of South Africa, 1996c: 13).

#### *Language policy of public schools*

Regarding the language policy, the school governing body is empowered to draft and adopt the language policy of the school, bearing in mind the fact that everyone has a right to receive education in an official language of his choice, where it is reasonably practically possible (Oosthuizen, 2004: 207).

#### *Freedom of conscience and religion at public schools*

This section of the Schools Act stipulates that religious observances may be conducted at a public school under rules issued by the governing body. Such observances must be conducted on an equitable basis and attendance at them by learners and members of staff is free and voluntary (Oosthuizen, 2004: 208).

#### *Suspension and expulsion from public school*

In terms of this Act, a governing body may suspend a learner from school. Oosthuizen (2004: 209) cautions that the learner must receive a lawful hearing before being suspended, and may not be suspended for more than a week. However, the period of suspension can exceed one week where it is recommended that the learner must be expelled and the governing body is awaiting the decision from the Department of Education. This section further stipulates that the expulsion of the learner may only be effected by the Department of Education, after the learner has been found guilty of serious misconduct at a fair hearing (RSA, 1996a: 23).

#### *Prohibition of corporal punishment*

In this section, it is explained that corporal punishment in schools is prohibited. The legislature banned corporal punishment to protect learners from abuse. The



section takes into consideration the importance of the child's right to dignity: Section 10 of the Constitution (RSA, 1996c: 11)

It is therefore important to mention that parent governors who may not be familiar with school governance legislations could be a liability to the school rather than asset in effective school governance.

## **RESEARCH OBJECTIVES**

The objectives of the study are the following:

To determine the effect of parent governors on school governance.

- To determine the essentiality of farm school parent governors' working knowledge of the school governance legislations.
- To present findings and recommendations which emanate from the study.
- To find a way in which parent governors can improve their performance in school governance.

## **METHOD OF INVESTIGATION**

This is presented under a number of headings as given below.

### *Research Design*

A survey to gather questionnaire-based data in a real-life setting was used in the study. The research design included the delimitation of the field of survey, the selection of respondents, the research instruments, a pilot study, the administration of the questionnaires, and the processing of data. The researcher used the cluster and simple random sampling method to select twenty farm school parent governors in each circuit in the Midlands Cluster. Since this cluster has 10 circuits, 200 parent governors were selected as respondents. This method was favoured for its simplicity, unbiased nature, and its closeness to fulfilling the major assumption of probability, namely that each element in the population stands an equal chance of being selected (McMillan & Schumacher, 2006: 210 & Kumar, 2005: 112).

### *Research Instrument*

A questionnaire was used to collect data, in line with the purpose of the study, the kind of information that was required and the available resources (Cohen & Manion, 2000; Ary, Jacobs & Razavieh, 2002). The researcher believed that this kind of survey would lead to some truths about farm school parent governors' knowledge of school governance legislations and it would provide

information on whether certain generalisations presented in the literature were also true for this population.

### Format of the Questionnaire

The questionnaire was divided into three sections, with each section focusing on the aims of the study. Section 1 dealt with the biographic and general information. This section provided the researcher with an understanding and knowledge of the respondents. Section 2 had closed questions focusing on the parent governors' knowledge of the legislations that impact on school governance. The respondents were asked to rate their responses according to the following scale: *Good, Average and Poor*.

Section 3 also had closed questions, focusing on the reflexive competence of the parent governors' working knowledge of the legislations that impact on the school governance. Questions in this section were operationalised using the four-point scale and the respondents were asked to rate their response according to the following scale: *Strongly Agree, Agree, Disagree and Strongly Disagree*.

### Administration of the Questionnaires

The researcher conducted a pilot study in five rural schools. These schools were part of the general population from which the sample was drawn, but not part of the sample itself. No inherent weaknesses were discovered in the questionnaire, so there was no need to modify it. In the main study, 200 schools were randomly selected and principals were requested to distribute the questionnaire to a parent governor whose literacy level was sufficient for him or her to complete it. It was felt that principals would be in a position to identify such parent governors.

The first sample population responses were 146 (73%) respondents. After the follow-ups, 24 respondents returned the completed questionnaires to make total responses of 170 (85 %) respondents. That represented a satisfying response.

### Data processing

After all the questionnaires had been received, the important task was then to reduce the mass of data obtained to a format suitable for analysis. The respondents' responses were coded and frequency distributions were generated.

## RESULTS AND DISCUSSIONS

The findings are presented and discussed under the various themes of the study.

### *General and Biographical Profile of the Respondents*

When the item of parent governors' qualifications was analysed, it was realised that all the respondents had fully completed the information regarding general and biographical data.

**Table 1 Educational background of farm school parent governors**

This table provided the researcher with knowledge of the educational background of farm school parent governors. A total population of 170 (n=170) responded.

<b>Education Qualification</b>	<b>N</b>	<b>%</b>
No Formal Schooling	110	65
Below grade 12	34	20
Above grade 12	26	15
<b>TOTAL</b>	<b>170</b>	<b>100</b>

Table 1 revealed that a high proportion of parent governors had no formal schooling. This shows that the education level of the population in the farm school areas is very low, with high percentages of functional illiteracy. The high illiteracy and semi-literacy rate of parent governors adversely affects school governance, as they cannot meaningfully participate in the school governance activities. This has also been noted by Monadjem (2003: 84), as she contends that parent illiteracy has been identified as one of the biggest barriers to parent involvement in school governance and could therefore be said that the education background of parent governors may be prohibitive from making significant contributions in school governance matters as some decisions on policy level need trained and competent people.

### *The farm school parent governors' knowledge of the school governance legislations*

Table 2 presents information related to the parent governors' knowledge of the legislations that impact on school governance. The respondents were asked to rate their responses according to the following scale: *Good, Average and Poor*.

**Table 2: Parent governors' knowledge of the school governance legislations**

Item		<b>Good</b>	<b>Average</b>	<b>Poor</b>	<b>Total</b>
National Education Policy Act	N	0	34	136	<b>170</b>
	%	0	20	80	<b>100</b>
Education White Paper 2	N	0	34	136	<b>170</b>
	%	0	20	80	<b>100</b>
South African Schools Act	N	0	68	102	<b>170</b>
	%	0	40	60	<b>100</b>
School Constitution	N	0	68	102	<b>170</b>
	%	0	40	60	<b>100</b>
Learners' Code of Conduct	N	0	68	102	<b>170</b>
	%	0	40	60	<b>100</b>
School's Budget	N	17	17	136	<b>170</b>
	%	10	10	80	<b>100</b>
School's Curriculum Framework	N	0	34	136	<b>170</b>
	%	0	20	80	<b>100</b>
School's Language Policy	N	0	34	136	<b>170</b>
	%	0	20	80	<b>100</b>

### The farm school parent governors' knowledge of the National Education Policy Act

Table 2 revealed that a high proportion of the respondents (80%) indicated their knowledge of the National Education Policy Act as poor. This Act outlines the organisation, management, and governance of schools and it provides for the need of parent involvement in school governance matters. The responsibilities implied by of the Act pose a mammoth task for the illiterate and semi-literate parent governors and they cannot be expected to perform school governance

tasks if their knowledge of this Act is poor. Intervention in the form of training workshops is inevitable.

The farm school parent governors' knowledge of the Education White Paper 2

Again, Table 2 revealed that a high proportion of the respondents (80%) indicated that their knowledge of the Education White Paper was poor. This document sets out the policy of the government on the governance of schools, and the development of capacity for school leadership and governance throughout the country. The envisaged outcomes of this document, among other things were to enable parent governors to determine the mission and character or ethos of their schools and recommend educators' appointments to the provincial department (RSA, 1996b: 30). Once again the responsibilities implied by this document pose a difficult task for the illiterate and semi-literate parent governors.

The farm school parent governors' knowledge of the South African Schools Act

More than half of the respondents (60%) as indicated in Table , reportedly had a poor knowledge of the South African Schools Act. This Act is the engine of school governance. It deals with the most important school governance matters. It is the de facto kingpin of parent governors' involvement in school governance as it contains the composition, duties, functions, rights and powers of parent governors. It is therefore ironic that the majority of parent governors reported to have a poor knowledge of the "engine power" of school governance. Monadjem (2003: 79) astutely points out that parent governors should transform schools into organizations that are participative. This transformation must encourage shared responsibility and a leadership style that cultivates and fosters an interactive working environment. It is therefore incumbent on the Department of Education to assist the parent governors to get to know as much as possible about the South African Schools Act and its implications for school governance.

The farm school parent governors' knowledge of the school constitution

The South African Schools Act mandates the school governing bodies to participate in the formulation and adoption of the school constitution. However, it is evident from Table 2, that a sizeable number of the parent governors (60%) indicated that their knowledge of the school constitution was poor. This is a cause for concern. Tsotetsi (2006: 196) asserts that some principals admitted to him that they used the expertise of the educators in the process of formulating

the school constitution and only took the constitution to the parent governors for ratification. These principals justified their behaviour by stating that most parent governors were not educated, and those that were, did not have the time or necessary skills to assist in the process.

The school constitution is very important. It consists of the school's mission statement, which sets out the school's vision, describing those values that the school has decided are important. It also comprises the school ethos, which is the underlying, deep structure of the school culture, the values that animate it and collectively constitute its way of life (Catholic Institute of education, 1997: 19). Without the constitution, the school does not have a leg to stand on. It is a legal requirement for all schools (Republic of South Africa, 1996c: 15).

#### The farm school parent governors' knowledge of the learners' code of conduct

The South African Schools Act demands that the school governing bodies draw up and adopt a code of conduct for learners, which must be respected by all learners and consists of school rules, sanctions and details of procedures that must be followed during disciplinary investigations. However, as it can be seen in Table 2, the parent governors in this study did not seem equipped to do so, as more than half of the respondents (60%) indicated that their knowledge of the learners' code of conduct was poor.

According to Potgieter et al. (1997:34), the purpose of the code of conduct for learners is to create well-organised and good schools where effective learning and teaching can take place, promote self-discipline, encourage good behaviour and regulate conduct. The code of conduct consists of school rules, sanctions and details of procedures that must be followed during disciplinary investigations

#### The farm school parent governors' knowledge of the school's budget

Table 2 further revealed that a high proportion of the respondents (80%) indicated that their knowledge of the school budget was poor. The Schools Act places the responsibility for the financial management of the school in the hands of the school governing body (Rossouw & Oosthuizen, 2005: 57). This means that the management of the school finances, as regulated by the South African Schools Act features is an important function of the parent governors. The parent governors are expected to draft and control the school budget. This suggests that the parent governors are required to possess financial competencies in order to execute their financial management duties. Since most parent governors are not capable of managing the school finances, most schools do

not have accountable and transparent financial management systems (Rossouw & Oosthuizen, 2005:58).

#### The farm school parent governors' knowledge of the school's curriculum framework

The farm school parent governors in this survey are reported to have very little knowledge of the curriculum framework at the school at which they serve. As can be seen from Table 2, a majority of the respondents (80%) indicated that their knowledge of the school's curriculum framework was poor. This implies that although the South African Schools Act, Section 21(1) (b) demands that parent governors should set the framework for the school's curriculum and also determine its extra-mural curriculum and choice of subject options in terms of provincial curriculum policy, nevertheless this was not happening among the schools surveyed. Seroto (2004: 56) argues that allowing parents to make decisions with regard to the curriculum will deprive educators of the right of exercising their professional judgment and that such an action can result in questionable and even harmful practices. This comment gives the impression that only the well-informed parent governors that are qualified to collaborate with educators in terms of decision-making with regard to structuring a framework for the school curriculum.

#### The farm school parent governors' knowledge of the school's language policy

It seems that the parent governors in this study have very little knowledge of the school language policy. As seen from Table 2, a high proportion of the respondents (80%) indicated that their knowledge of the school's language policy was poor. This implies that although the South African Schools Act, Section 21(1) (b) demands that parent governors choose the language to be used for teaching and learning, parent governors in this study did not participate in determining the school language policy.

#### The farm school parent governors' knowledge of the school's religious policy

All parent governors in this study were knowledgeable about the religious policy at the school at which they served. As can be seen from Table 2, they all (100%) indicated that their knowledge of the School's Religious Policy was good. South Africa is a multi-religious country with over 60% of the population claiming allegiance to Christianity. This policy, according to Tsoetsi (2005: 210), provides a framework for schools to determine their own religious



policies. Parent governors lay down the rules for religious observances at the school. These observances, according to Potgieter et al (1997: 56) are regular meetings such as school opening ceremonies, where, for example, scripture readings, prayer and religious singing take place. Freedom of religion is guaranteed in the constitution as Rossouw and Oosthuizen (2005: 20) observe that religious observances may be conducted at the state or state aided institutions, provided that those observances follow rules made by the appropriate public authorities, are conducted on an equitable bases, and attendance at them is free and voluntary. The religious policy needs to ensure that learners and staff with different convictions have an equal opportunity to attend religious observances according to their faith (RSA, 1996c: 4).

*The reflexive competence of the parent governors' knowledge of the legislations that impact on the school governance*

The statements in Table 3 were added to cross validate the responses summarised in Table 2. This was part of the triangulation strategy followed in this study.

**Table 3: The reflexive competence of the parent governors' knowledge of the legislations that impact on the school governance**

The statements in Table 3 were added to cross validate the responses summarised in Table 2. This was part of the triangulation strategy followed in this study.

Items		Strongly Agree	Agree	Disagree	Strongly Disagree	TOTAL
Learners whose parents fail to pay school fees must not be admitted to school	N	70	31	17	52	<b>170</b>
	%	41	18	10	31	<b>100</b>
Dagga smoking learners can be expelled from school by the parent governors	N	58	52	43	17	<b>170</b>
	%	34	31	25	10	<b>100</b>
Parent governors must decide the medium of instruction in the school	N	32	43	61	34	<b>170</b>
	%	19	25	36	20	<b>100</b>
Only the principal should use the cane / stick to punish troublesome learners	N	82	45	31	12	<b>170</b>
	%	48	27	18	7	<b>100</b>
All learners must attend religious morning assembly in school	N	88	58	24	0	<b>170</b>
	%	52	34	14	0	<b>100</b>

Learners whose parents fail to pay school fees must not be admitted to school

Table 3 revealed that more than half of the respondents (59%) indicated that they agreed with the statement that learners whose parents fail to pay school fees must not be admitted to school. This is expected of parent governors who indicated in Table 2 that their knowledge of the school admission policy is poor. The admission policy stipulates that the school must not discriminate against learners, who must be admitted even if their parents cannot pay school fees.

Dagga smoking learners can be expelled from school by the parent governors

As shown in Table 3, the majority of the respondents (65%) agreed that dagga smoking learners can be expelled from school by parent governors. The same respondents indicated in Table 2 that their knowledge of the South African Schools Act is poor. Section 9 of this Act discloses that the expulsion of the learner may only be affected by the Head of Department, after the learner has been found guilty of serious misconduct at a fair hearing (RSA, 1996c : 11 ).

Parent governors must decide the medium of instruction in the school

Table 3 also revealed that more than half of the respondents (56%) did not agree that parent governors must decide on the medium of instruction in the school. Again, such a response was expected, taking into account the fact that these respondents had indicated in Table 2 that their knowledge of the language policy was poor. The language policy demands that parent governors choose the language to be used for teaching and learning. The factors that play a role in deciding the language policy include the majority of learners who use that language and the ability of the educators to teach that particular language.

Only the principal should use the cane / stick to punish troublesome learners

On the use of corporal punishment by school principals, Table 3 further on revealed that a majority of the respondents (75%) agreed with the statement that only the principal could use the cane / stick to punish troublesome learners. This response is a cause for a worry as the South African Schools Act clearly states that no one is allowed to administer corporal punishment at a school on a learner (RSA, 1996:11). The School Act section takes into consideration the importance of the child's right to dignity (Potgieter, et al., 1997 : 39).

All learners must attend religious morning assembly in school

In conclusion, Table 3 showed that a majority of the respondents (86%) agreed that all learners must attend religious morning assembly in school. The strong support for this item indicates that parent governors are not aware of Section 15 of the South African Schools Act, which stipulates that the attendance of religious observances in a school is free and voluntary (Clarke, 2007 : 122).

## **SUMMARY OF THE FINDINGS**

The summary that follows highlights the salient issues that emerged from the study.

### *The farm school parent governors' educational background*

The empirical survey revealed that a high proportion of parent governors were illiterate and semi-literate. The high illiteracy rate of parent governors negatively affects school governance, as they cannot successfully play their part in school governance activities. Monadjem (2003, : 84) maintains that parent illiteracy has been identified by educators as one of the biggest barriers to parental involvement in school governance. Their educational background prohibits them from making significant contributions. The less educated the parent governors are, the more likely it is that they will be reluctant to become involved in school governance matters. Monadjem (2003, : 87) explains that the parent governors' clear understanding of the legislations and policies can enhance effective school governance, and since illiteracy is a national problem, the Department of Education should vigorously and urgently initiate literacy classes for farm school parent governors.

### *Farm school parent governors' knowledge of the legislations and policies that impact on school governance*

This study revealed that the majority of farm school parent governors had poor knowledge of the legislations and policies that impacted on school governance. These policies and pieces of legislation are the *de facto* kingpins of parental involvement in school governance as they contain the composition, duties, functions, rights and powers of parent governors.

In order for schools to be effective and well managed, the farm school parent governors need thorough training on the implementation of the precincts of the legislations and policies that impact on school governance - such as the National Education Policy Act, the Education White Paper 2, South African Schools Act, the school constitution, admission policy, language policy, re-

ligious policy, code of conduct for learners, and so forth. The importance of these legislations and policies cannot be overemphasised as they ensure that parent governors have more say in day-to-day school governance matters. It is therefore imperative that training programs for parent governors need to be initiated and that these should focus on interpreting and implementing the legislations and policies impacting on school governance, thereby guiding parent governors in matters related to their roles and responsibilities, policy making, vision building, school management and school development (Catholic Institute of Education, 1997 : 1). Farm school parent governors need to understand the significance and scope of their duties, and they should be able to interpret these legislations and apply principles as contained in the legislations to a particular situation. It is hoped that, after training, the parent governors will come to an understanding of a democratic approach to school governance.

## **CONCLUSION**

Parent governors should be playing a significant role in school governance activities. They are responsible for the formulation, development, implementation and review of school policies. This responsibility includes development of the school admission policy in consultation with the Department of Education. It also includes promotion of the best interests of the school, while striving to ensure the school's development through the provision of quality education for all learners, adoption of a school constitution and the development of the appropriate mission statement. Parent governors are therefore indispensable assets and resources in the successful formulation and implementation of school policies. According to Heystek and Louw (1999: 21), the role of parent governors in schools should be recognized as that of important decision makers. However, in most cases they lack the knowledge and the training to do so. It is essential for them to be given the necessary training, which should include the opportunity to acquire the necessary knowledge so they would be in a position to participate meaningfully in the school governance activities.

In conclusion, it should be mentioned that the parent governors themselves must be committed to attend the training sessions, and convenient times for training should be chosen. Since most farm school parent governors are farm labourers, training sessions during the weekdays would be impracticable. Sundays could be better suited for their training. The timing of the commencement of the training sessions is also very important and should take place just after parent governors have been elected and are about to start with their governance functions. Lastly, it is recommended that the training manuals should be made available in vernacular language, as most parent governors can neither

read nor understand English. On top of that, the facilitator should conduct the training in vernacular so that the parent governors could reap the maximum benefit from it.

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# The anti-bias curriculum in selected early childhood programmes in South Africa

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## ABSTRACT

This study reports findings of an analysis of three early childhood education 'centres' with regard to principles of an anti-bias curriculum. This investigation took the form of mini case studies involving three institutions – one primary school in Pretoria, and two in KwaZulu Natal. The instrument used for data collection was an adaptation of the Anti-Defamation League (ADL) checklist on *Creating an Anti-Bias Learning Environment*. In terms of the major findings, a look at the daily programmes of the three schools visited showed that in each school, the teachers demonstrated awareness towards issues of diversity in terms of race, religion, culture, gender and disability. In all the three institutions, age did not come up voluntarily as a factor of possible bias or discrimination. There was also a demonstrated awareness of the need to have cultural diversity, in terms of the range of instructional materials used. However, the range of materials on display did not demonstrate adequate representation of the possible cultural diversity within the South African context. In each case, there was a definite need for greater effort – and the extent to which this manifested in the curriculum materials used, as a way of improving the respective curricula of the participating 'centres' with regard to promoting anti-bias, is discussed.

**KEYWORDS:** Early Childhood Development; Education; Curriculum; Anti-Bias.

## INTRODUCTION

Although many forms of bias have been identified and mentioned, this paper focuses specifically on six forms of anti-bias, namely culture, religion, race,

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gender, disability and age. Wikipedia (2008: 1) defines bias as “a tendency or preference towards a particular perspective, ideology or result”. Other synonyms of **bias** include prejudice, partiality, unfairness, favouritism and predisposition. In particular, **prejudice** has come out quite frequently in literature as a word used as a substitute for **bias**. A. Woolfolk (2007: 172) explains that “the word prejudice is closely related to the word prejudge”. Woolfolk then defines *prejudice* as “a rigid and irrational generalization – a prejudgment – about an entire category of people”. The important thing to note is that “prejudice can be positive or negative; that is, you can have positive as well as negative irrational beliefs about a group [usually] based on race, ethnicity, religion, politics, geographic location, language, sexual orientation, gender, or appearance” (Woolfolk, 2007: 172).

In practice, someone is said to be biased when s/he holds a certain point of view on a subject but fails to acknowledge it and be neutral, resulting in an uneven dispensation of judgment – consciously or unconsciously (Wikipedia, 2008: 3). Wikipedia further contends, “bias may have the effect of leading one to accept or deny the truth of a claim, not on the basis of the strength of the arguments presented in support of the claim but merely on account of the person’s own preconceived ideas”.

**Anti-Bias**, is the antonym of Bias. As such, **anti-bias** refers to the state of impartiality, fairness – and the absence or lack of prejudice, favouritism, predispositions, and others in human interactions. Accordingly, Anti-Bias Werkstatt (not dates [n.d.]: 2) sees anti-bias “as a fundamental attitude and life-long process” that addresses all forms of discrimination – operating both at individual and societal levels. To the Anti-Bias Werkstatt, therefore, anti-bias “aims to bring into consciousness various forms and dimensions of prejudice and discrimination, and to develop (alternative) possibilities of behaviour on that level”.

Wikipedia (2008: 1-2) identifies a number of forms of bias, including the following:

- Class: favouring one social class.
- Commercial: advertising in favour of certain interests.
- Cognitive: holding a position that a particular group cognitively superior / inferior.
- Ethnicity: favouring a particular group on account of ethnicity.
- Racism: holding positive / negative thoughts / feelings about a particular group.

- Political: favouring the views of a particular political group (especially for journalists).
- Religious: holding a view that one's own religion is better than any other; or looking down / harbouring negative thoughts / feelings about people belonging to other religions.
- Islamophobia: a fear of people of the Islamic faith.
- Sexism (Gender): prejudices based on the sex / gender of a person
- Anti-semitism: having negative thoughts / feelings about Jews.
- Xenophobia: dislike of foreigners.
- Ageism: favouring / disfavouring people of a certain age group.
- Supremacism: belief that a certain group is superior / inferior in some way.
- Rankism: favouring people of certain ranks.
- Disability: holding negative perceptions about people with physical limitations.

It's quite clear from the above list, which is by no means exhaustive, that bias manifests in many ways, suggesting that the anti-bias movement has many ills to contend with, in its quest to redress all forms of bias.

## CONCEPTUAL FRAMEWORK

Anti-Bias Werkstatt (n.d.: 1) traces the antecedents of the *anti-bias approach* to the 1980's with the work of Louise Derman-Sparks and Carol Brunson-Philips in the USA, where it was mainly used in the field of elementary and primary education. As Anti-Bias Werkstatt observes:

The approach has undergone some intensive further development after the end of the Apartheid system in South Africa, where it was being adapted for youth and adult education. It was not until the beginning of the 1990s that the approach reached Germany via an exchange of South African and German experts ... Now Anti-Bias in Germany is used in elementary education and in schools as well as in the field of adult education (Anti-Bias Werkstatt, n.d.: 1).

According to Wikipedia (2008: 1) "the anti-bias movement was born out of the multiculturalism movement". Hence, within the context of multicultural education, anti-bias education is seen as "one response to the increasing diversity of the school population as well as to the growing demand for equity for all groups" (Woolfolk, 2007: 163).

In advancing this point further, A.M. Gordon and K.W. Browne (2004: 197) make the following point:

This important movement promotes the concept that all children are born equal and are worthy of our respect; it challenges teachers to examine beliefs, attitudes, and actions that might deny any child that unconditional respect. Some teachers may be forced into further soul searching and reflection before they can untangle their anxiety and attitudes about their prejudices.

However, according to Anti-Bias Werkstatt (n.d.: 1), the Anti-Bias approach “assumes that everyone has prejudices”, and bases this contention:

... on the consideration that prejudices and discriminations are not individual misjudgements, but institutionalized in society as ideologies, which are learned by the individuals. Correspondingly, the behaviour based on those prejudices can be un-learned, and institutionalized; oppressive ideologies can be discovered, questioned, and analyzed.

Gordon and Browne (2004: 197) add their voices to this view and observe as follows:

The anti-bias approach affords teachers a tremendous opportunity to confront their own anxieties and biases; work with parents of various religions and ethnic minority groups to learn some of their cultural norms and practices; work with parents of children with disabilities to learn more about how to improve each child’s school experience; enrich the curriculum; represent accurately the broad ethnic makeup of this nation [United States]; influence the development of attitudes and values of young children towards the reality of the human condition; prevent irreparable harm to children’s concept of themselves; and promote greater global understanding.

The operationalisation of the anti-bias approach manifests in following an appropriate curriculum. According to Wikipedia (2008: 1):

The anti-bias curriculum, predominately in early education, is an active/activist approach that proponents claim challenges forms of prejudice such as racism, sexism, ableism/disablism, ageism, homophobia, and other –isms. Anti-bias curriculum has a strong relationship to multiculturalism curriculum and its implementation; the most notable difference between these two theories and practices is the age of the intended audience.

In this regard, the anti-bias curriculum is seen as a whole philosophy on its own, *albeit* with its own unique inherent tensions and challenges. Wikipedia (2008: 5) states this point as follows:

Anti-bias curriculum embraces an educational philosophy as well as specific techniques and content. It is value based: Differences are good: oppressive ideas and behaviours are not. It sets up a creative tension between respecting differences and not accepting unfair beliefs and acts. It asks teachers and children to confront troublesome issues rather than covering them up”.

Diversity is one word that comes up repeatedly on the topic ‘anti-bias’. However, there are different views on what exactly constitutes diversity. As E.L. Paluck (2006: 581) points out:

Some [programs] focus on traditionally recognized group cleavages like race, ethnicity, gender, disability, religion, and sexual orientation, while others expand the meaning of diversity to include ability, philosophical or political views, working style, and so forth.

Whatever she sees as the great benefits of diversity training, Paluck (2006: 591), nonetheless, laments that “diversity training is a widespread prejudice reduction and inclusion promotion intervention in the real world that has received too little attention from intergroup relations researchers.”

If it may be said, however, diversity training is one way the anti-bias movement seeks to address the various ways in which prejudice rears its ugly head. In many places, such as the United States, where sensitivity to issues of anti-bias has risen to the public debate platform, diversity training has become “a catchall title that encompasses many types of activities, from lectures to movies to role-plays” (Paluck, 2006: 581).

Paluck differentiates between two approaches to diversity training: *Instructional* versus *Experiential* approaches:

Instructional methods of diversity training supply information and raise awareness of the problems associated with misunderstanding or mishandling diversity, or conversely, the benefits of “diversity friendly” [behaviors] and policies ... [while] Experiential methods of training take a personalized and participatory approach to building skills that promote harmonious and productive interaction across group lines. Participants in these trainings may travel to [neighborhoods] of a different economic or ethnic background than their own, [practice] communication techniques, or observe one another’s style of intergroup interaction” (Paluck, 2006: 581).

Which of these two approaches is used, however, Paluck (2006: 581) contends that “most diversity trainings are based on implicit assumptions about the value of overcoming ignorance, expressing one’s hidden assumptions, or feeling empathy for an oppressed group or individual”. She adds that “fewer trainings are explicitly based on established theories about prejudice reduction or social inclusion”.

## **THE PROBLEM**

As stated above, in the United States, sensitivity to issues of anti-bias has risen to the public debate platform, resulting in diversity training becoming “a

catchall title that encompasses many types of activities, from lectures to movies to role-plays” (Paluck, 2006: 581). In their study involving six to seven year olds, P. Connolly and K. Hosken (2006: 108 & 122) found that although their programme elicited “the effect of notably increasing the children’s ability to recognize instances of exclusion and to understand how being excluded makes someone feel ... taking racial differences as an example, it was found that there was no evidence of any change in the children’s racial attitudes”. This finding has very serious implications for a country such as South Africa, which has only recently emerged from decades of systemic racial segregation, as well as institutionalised racism and discrimination. In this regard, the need for diversity training in order to remove all forms of bias cannot be over-emphasized. The above finding indicates that racial bias could be a very deep-rooted form of prejudice needing a very explicit and deliberate form of intervention. The school system, particularly at an early age could be a strategic place to start with such training which would not only build awareness around issues of anti-bias, but actually begin to build a new generation of bias-free South Africans. A lot may already be happening in this regard, but a literature search has revealed an apparent dearth of studies on the principle of ‘anti-bias’ curricula in South Africa, specifically with regard to early childhood education.

At the classroom level, South Africa’s response to its divided past appears to lie in ‘inclusive’ education, whereby various race groups which were previously catered for separately – as well as persons of varying abilities / disabilities, are brought together onto the same platform to experience learning side by side. This results in integration in a number of ways and, certainly, this cannot be without its own challenges on the part of teachers, learners and parents. As J. Naidoo (1996: 11) points out, integration “requires major changes of deep-seated attitudes and behaviour patterns among learners and teachers”.

In addition, the Bill of Rights (section 29[1] of South Africa’s constitution) provides for the right of everyone to basic education “as an immediate right unqualified by any limitation to progressive realisation” (Lake & Pendlebury, 2009: 19). However, for the most part, ‘access’ has amounted only to a learner being admitted to a learning institution, without minding much about what the learning experience such a learner receives. In this regard, a distinction has been made between ‘formal’ (or institutional) versus ‘epistemological’ access to education (Morrow, 2007). This distinction is important in that although admission to an institution is a necessary indicator of the transformation that the country wishes to see, it does not (in by itself) constitute a sufficient measure of the relevance and quality of education received by a given learner.

## RESEARCH QUESTION

This study set out to answer the following research question:

In what ways have the Early Childhood Development Centres in South Africa embraced the principles of an anti-bias curriculum?

To me, the answer to this question stood to shed light on the very core of the South African response to many decades (actually, centuries) of cultural / racial disharmony and to some extent hatred. Certainly, given the country's history, one gets the sense that the importance of sensitising children as early as possible during their journey through the school system on matters of anti-bias with regard to race, gender, culture, religion, ethnicity and age, amongst many others, should form the very foundation of the country's recovery programme. For the educator, this amounts to a major challenge in considering how the needs of children from all these diverse circumstances could be met.

## METHODOLOGY

The methods of investigation followed in this study are presented below under different sub-headings:

### *Design and Participants*

This investigation took the form of mini case studies involving three institutions – one in Pretoria, Gauteng and two in KwaZulu Natal. The three “schools” that were visited were: (a) a privately owned Early Childhood Development Centre (combined Crèche and Pre-School) located in Richards Bay, KwaZulu Natal; (b) a Reception Year class at a primary school (Pretoria); and (b) a Reception Year class at a primary school, located in Richards Bay, KwaZulu Natal. The primary school in Richards Bay was a former Model C school; whereas the school in Pretoria is a largely privately funded institution with some government subsidy.

With regard to the two institutions in Richards Bay, the racial composition of learners was approximately 50% White, 35% African and 15% Indian; whereas for the school in Pretoria, the racial composition was an equal split between White and African. This profile of the “schools” visited gave me a good exposure to issues of diversity as reflected in the requirements of this assignment.

### *Instrumentation*

The instrument used for data collection was an adaptation of the Anti-Defamation League (ADL) checklist on *Creating an Anti-Bias Learning Environment*. The various issues measured in this checklist are shown as part of the presentation of the results.

## RESULTS AND DISCUSSION

These are presented in two major parts. First, general remarks are made which address the common threads that emerged from the observations and conversations made with the educators in the three institutions visited. This is then followed by a presentation of findings per institution visited.

### *General Remarks*

A look at the daily programmes of the three “schools” visited showed that although the way they planned their daily activities was done to suit their unique circumstances, their overall activities were largely similar. These included timetable slots for free play, taking the register, creating work, music/singing, outside play, language skills / story time, snacks and juice, - as well as health breaks in between. In addition, the Reception years also had timetable slots for what they referred to as ‘moral lessons, life skills, birthdays, maths concepts, weather, context discussions and vocabulary’.

In each school, the teachers demonstrated awareness towards issues of diversity in terms of race, religion, culture, gender and disability. In all the three institutions, age did not come up voluntarily as a factor of possible bias or discrimination.

Concerning the types of instructional materials used, there was also a demonstrated awareness of the need to be representative of the diversity of children in class. However, save for School 1 (i.e. the Early Childhood Development Centre), the range of materials displayed did not demonstrate adequate representation of the possible cultural diversity within the South African context. In each case, there was a definite need for greater effort. The extent to which this manifested itself in the curriculum materials used is discussed below.

Table I shows the performance of the three schools on the various criteria.

**Table I: The schools’ performance on the Anti-Bias checklist**

Item Description	School 1	School 2	School 3
1. Does the classroom have images of people from diverse backgrounds (e.g. diverse cultures and religions, and people of different ages)?	✓	✓	x
2. Does the classroom have images that counter existing stereotypes (e.g. African medical doctor instead of a lazy African ‘garden boy’ sleeping on duty)?	✓	x	x



3.	Does the classroom have images of diverse people dressed in modern attire and engaged in activities, as opposed to ancient or ceremonial dress?	✓	x	x
4.	Does the classroom have images of people with a range of different abilities and body types engaged in a variety of activities?	✓	✓	x
5.	Does the classroom have images of many different kinds of family compositions (e.g. single parents) and socioeconomic groups?	x	✓	✓
6.	Does the classroom have images that demonstrate the geographic diversity of family dwellings, neighbourhoods, and communities (e.g. urban, rural)?	x	✓	✓
7.	Does the classroom have images that counter gender stereotypes (e.g. women engineers, male cooks)?	x	x	x
8.	Does the school have images of people from diverse backgrounds interacting with one another?	✓	✓	✓
9.	Do learning materials and other curricular resources include content and illustrations that reflect the experiences of people from diverse backgrounds?	x	x	x
10.	Does the school provide opportunities for all learners and educators to participate in anti-bias education programmes that promote awareness of personal biases and provide opportunities to develop skills to challenge bias?	x	✓	✓
11.	Does the curriculum promote understanding of diverse perspectives, including the values, attitudes and behaviours that support cultural pluralism?	✓	✓	✓
12.	Do the teaching strategies reflect a variety of learning styles?	✓	✓	✓
13.	Do the educators provide equal opportunities and maintain high expectations for all learners?	✓	✓	✓
14.	Do school policies and procedures foster positive interactions among educators, learners and parents?	✓	✓	✓
15.	Does the school foster the learning of other languages, including sign language, as a legitimate means of communication?	✓	✓	✓
16.	16.0 Does the curriculum help learners to develop life skills needed for effective citizenship?	✓	✓	✓

### School 1: The Early Childhood Development Centre (*Crèche and Pre-Primary*)

Table I shows the ratings regarding the performance of the Centre on the various measures. Overall, this Centre was run very well, however, there were five areas of concern, namely:

- lacks images of many different kinds of family compositions and socio-economic groups
- absence of images that demonstrated the geographic diversity of family dwellings, neighbourhoods and communities
- absence of images that counter gender stereotypes
- apparent lack of opportunities for all students and staff to participate in anti-bias education programmes that promote awareness of personal biases and provide opportunities to develop skills to challenge bias
- the learning materials and other curricular resources used not including content and illustrations that reflect the experiences of people from diverse backgrounds.

### School 2: The Reception Year of the Primary School in Richards Bay

The table shows the ratings of the Reception Year at the primary school in Richards Bay. The school is also doing fairly well – but did not satisfy four of the sixteen criteria comprising the checklist. The areas needing improvement were:

- not having images that counter existing stereotypes, particularly those related to African people
- lack of images that reflect a diversity of people engaged in everyday dress and activities
- absence of images that counter gender stereotypes
- the learning materials and other curricular resources used not including content and illustrations that reflect the experiences of people from diverse backgrounds.

It might be the case that commercially available materials depicting certain positive images (of Africans and those gender-related) may not be available. Nonetheless, these can be drawn by the teachers and learners, and then pinned up on the walls of the classroom. It is therefore, hoped that sooner rather than later, such material will be made available.

### School 3: The Reception Year of the Primary School Providing Inclusive Education – Pretoria

The ratings related to this school appear in the third column of Table I. According to the table, this school did not do well on six of the sixteen criteria. This suggests that there is much more room for improvement with regard to this school on anti-bias matters compared to the other two schools. Having said this, however, it is important to report that this school is doing a lot with regard to anti-bias related to students with both learning and physical disabilities. This is the strategic niche of this school; a niche that makes it unique. Perhaps it is because of this emphasis that it has tended to neglect the other areas of anti-bias.

The other point about this school was that it was very proud to project itself as a Christian school. Although not much information was collected regarding the school's status regarding religious tolerance, this is a fertile area of investigation for the future.

The six areas needing attention were:

- The physical environment not containing images of people from diverse backgrounds (for example, diverse cultures and religions, and people of different ages).
- The physical environment not including images that counter existing stereotypes.
- The physical environment not including images of diverse people engaged in everyday dress and activities.
- The physical environment not including images of people with a range of different abilities and body types engaged in a variety of activities.
- The physical environment not including images that counter gender stereotypes.
- The learning materials and other curricular resources used not including content and illustrations that reflect the experiences of people from diverse backgrounds.

In order to deal with the various issues related to anti-bias, it would be advisable to 'speak through pictures', so to say. For the young children this is very important in shaping their world views, while at the same time the educators get an opportunity to confront their own biases.

## SUGGESTIONS FOR IMPROVEMENT

### *The Use of Diverse Images and Learning Materials / Curricular Resources Drawn from Diverse Backgrounds*

The use of diverse images as well as learning materials / curricular resources drawn from diverse backgrounds were the biggest challenges for all the three institutions. J.A. Banks (2006: 608) points out that “an important aim of schools should be to provide students with experiences and materials that will help them to develop positive attitudes and [behaviors] towards individuals from different racial, ethnic, language, and social-class groups”. Regarding the aims of early childhood education, L. Brooker (2006: 117) posits that “one of the goals of early education ... may be viewed as offering children a wider range of opportunities for development than is available in their homes.”

Such diversity of materials could include some aspects of Arts and Culture, such as music, dances and plays. According to Banks (2008: 609) “research indicates that curriculum interventions such as plays, folk dances, music, and role-playing can also have positive effects on the racial attitudes of students in elementary schools”. As such, “early childhood practitioners are challenged by the task of providing culturally relevant education in a multicultural society” (Nagayama & Gilliard, 2006: 143).

From the school curriculum point of view, there are a number of important reasons why, not only sensitivity but deliberate actions need to be made to overtly address all forms of bias and prejudice. One such reason is that children form impressions and make assumptions around many things as they grow up – including those related to bias, prejudice and discrimination. It is therefore critically important that teachers must be aware of these prejudices, elements of bias and discrimination. As Brooker (2006: 117) points out, “it is generally accepted that children acquire, or construct, many important aspects of their identity and dispositions through their earliest experiences in their home environment ... and that these identities are structured by the beliefs and practices of family members.”

On her part, L. Derman-Sparks (1993/4: 67) makes an important point about the importance of having a sense of children’s understanding of diversity in her observation that:

children do not come to pre-school, child care [centers] or elementary school as ‘blank slates on the topic of diversity. Facing and understanding what underlies their thoughts and feelings are key to empowering children to resist bias.

Quoting a number of sources, Derman-Sparks (1993/4: 67-68) makes some very important and critical points regarding children's perceptions as they grow up – and the ages at which some of these perceptions begin to manifest:

- infants notice skin colour differences in people from as early as six months
- children not only notice, but begin to ask questions and conjure up their own hypotheses about certain differences and similarities about peoples they come across
- between 2½ and 3½ years of age, children become aware of, and begin to absorb, socially prevailing negative stereotypes, feelings and ideas about people – including themselves
- throughout early childhood, children continue to construct and elaborate on their ideas about their own and other people's identities – and their feelings about differences that they see amongst people
- racism may teach children moral double standards, which result in “general ethical erosion” and “a form of hypocrisy”, whereby primary school-age children may say “words that sound like acceptance of diversity, while acting in ways that demonstrate the opposite”
- children may begin to construct a false sense of identity based on their notion of what goes with their skin colour (superiority or inferiority). In particular, those who construct a sense of superiority on the basis of their skin colour may become devastated later when they realise that their skin colour does not determine what they expected to happen
- children may also begin to develop fears about people who are different from themselves – and do not cultivate the social skills that are necessary to interact with people of other races
- great damage could result from experiences of racism, sexism and classism in relation to children's development. Derman-Sparks refers such a hostile environment as “psychologically toxic” to a young child.

These views are supported by Connolly and Hosken (2006: 107) who also point out that “there now exists a substantial body of evidence indicating that children by the age of three are capable of recognizing physical and cultural differences and developing negative attitudes on the basis of these”.

Wikipedia (2008: 4-5) also concurs with this view and expresses the point as follows:

Children are aware [from when they're] very young that [color], language, gender, and physical ability differences are connected with privilege and power. They learn by observing the differences and similarities among people and by

absorbing the spoken and unspoken messages about those differences. Racism, sexism, and handicappism have a profound influence on their developing sense of self and others.

Brooker (2006: 118) makes this point in the following words:

On entry to educational settings, children are able to identify the socially acceptable behaviour and expectations for male and females and for different ethnic groups in their own society, as presented through the media as well as through their own daily experiences of roles and relationships.

For our part as parents, Derman-Sparks posits that “how we answer children’s questions and respond to their ideas is crucial to their level of comfort when learning about diversity” (Derman-Sparks, 1993/4: 67). Sadly, however, most parents tend to respond in dismissive ways when children ask what they consider to be sensitive questions. The usual way, according to Derman-Sparks is to tell to children: “it’s not polite to ask ...”, “I’ll tell you later” or “It doesn’t matter”. In some cases, parents even lie to children in order to avoid the embarrassment of dealing with certain issues. Increasingly, however, most children are exposed to many situations that may build their biases and attitudes in certain ways – including, although not limited to: the parents, themselves, “extended family members, neighbours, teachers, friends, TV, children’s books, movies (Derman-Sparks, 1993/4: 68).

Overall, it’s quite frightening that some researchers believe that after the age of nine, “racial attitudes tend to stay constant unless the child experiences a life-changing event” (Derman-Sparks, 1993/4: 68).

The anti-bias curriculum places its roots in notions of biased curricula. Clearly, from the non-representative nature of the materials and other curricular resources used in the instruction, as well as the biased nature of the images used (or not used), as the case was with the above findings, one could talk about biased curricula in the three institutions. A biased curriculum is seen as oppressive on the part of the people that such a curriculum ignores or neglects. To sum up all these points, Wikipedia (2008: 1) has the following to say:

Anti-bias curriculum advocates claim that varying degrees of layers of oppression exist in educational institutions. Advocates claim that biased curricula perpetuate oppression through socialization, and have a negative impact on interpersonal networking and acquisition of skills and knowledge. The anti-bias approach urges educators to be aware of these social limitations and to eliminate them. The anti-bias approach is intended to teach children about acceptance, tolerance and respect; to critically analyze what are taught; and

that there are connections between ethnicity, gender, religion, and social class, and power, privilege, prestige, and opportunity.

Going back to the issue of epistemological access, S. Pendlebury (2009: 24-25) makes an important point in stating that meaningful access to schooling is achieved “only when schools ensure epistemological access, and support children’s systematic learning of basic skills, knowledge, values and practices, and do so in a manner that respects children’s dignity and background.” Certainly, if essential elements in the child’s background are ignored, sidelined or remain unknown to the teacher – and are therefore not made part of planned mainstream instruction, epistemological access is denied the child. Materials that are displayed in class are just as important as those appearing in the prescribed learning materials. In this regard, “teaching for epistemological access is about carefully designed learning programmes and materials that enable children gradually to develop competencies that cannot be learned in an instant, and that go beyond the informal learning that goes on daily at home” (Pendlebury, 2009: 25).

Within the aegis of an inclusive education environment, with regard to instruction meant for learners of diverse backgrounds, educators need to pay attention to the extent to which the instructional materials they use are epistemologically accessible. Failure to do so may amount to some form of unfair discrimination – which will be at variance with the South African Schools Act (Act 84 of 1996).

In this regard, Banks (2006: 612-613) contends that in view of the demographic changes and global migration taking place around the world, it has become “essential” for teachers to:

1. restructure their curriculum and teaching so that students from different ethnic, racial, language, and social-class groups will have equal opportunities to learn;
2. implement prejudice-reduction strategies that are effective for different individuals and different racial/ethnic groups; and
3. promote social inclusion, in addition to prejudice reduction, so that both teaching practices and school climates foster relationships that build across differences so that all students will develop the knowledge, attitudes, and skills needed to function as effective citizens in our diverse, complex, and troubled world.”

As such, the importance of using instructional materials that are culturally inclusive, as well as presenting images of people in a way that addresses societal prejudices cannot be overemphasized.



## CONCLUSION

Gordon and Browne (2004: 196) point out that “personal beliefs concerning race, culture, gender, handicaps, and economic status may affect teachers’ teaching in many ways without knowing”. They go further and observe that prejudices about children and parents are usually based on long-held beliefs, considering that “somehow, personal histories are filled with biases”. According to these authors, teachers sometimes have their own biases – particularly with regard to “children who are messy, who have [odors], whose clothes are too big or too small, who eat strange food etc”. These things could bother the teacher who fails to examine her personal beliefs and biases timeously. Indeed, as Pendlebury (2009: 26) points out, “teachers’ classroom practices play a crucial role in helping or hindering children’s learning.” As such, an appropriately conscientious teacher is one who displays “a positive self-concept and a willingness to be open to new experiences” (Gordon & Browne, 2004: 196).

Clearly, in the case of the three institutions visited as part of this study, sensitivity about this matter appears to be low. It is important for all the three institutions, as supported by the above literature, that they pay particular attention to these matters. It should, however, not be forgotten that they were all found to be having a number of strengths. It is equally important to commend them on these strengths, and use them as building blocks to redress the limitations that have been identified.

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# Community participation: A factor in preschool teacher motivation and adequacy of the physical learning environment

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## ABSTRACT

This study investigated the modes and levels of community participation in Early Childhood Development (ECD) Centres or preschools. These are centres that contemporary communities use to secure children's rights to conditions of living necessary for holistic development. Since previous research findings in Kenyan preschools had revealed low teacher motivation and poor physical environments, this study examined the association between community participation and both teacher motivation and the adequacy of physical learning environments. Further, in order to suggest strategies of improving existing social and physical environments, factors that influence community participation were also explored. The study was carried out in 40 preschools in Thika District of Central province in Kenya. Data were collected from 221 preschool community members, 46 teachers and 15 committees. Ex-post-facto research design was used in the study. For data analysis, the SPSS and relevant quantitative data analysis techniques were used. The study found that the motivation levels of more than half of the participating teachers were low. The teachers were found to have been de-motivated by diverse factors. Further, the study established that 63% of community members' participation in ECD centres was low. The study recommended key strategies to motivate teachers and also to enhance community participation.

**KEYWORDS:** ECD, Pre-schools, community participation, factors.

## BACKGROUND

Contemporary changes in society such as urbanisation, introduction of the money economy and the multiplicity of the roles of mothers have necessitated the use of Early Childhood Development (ECD) centres as alternatives to traditional childcare systems. Since these centres cater for children who are in the most critical developmental stage, they are expected to provide adequate and appropriate care. This is necessary in order to ensure children's holistic development and avoid negative effects of growth deficiencies that may be difficult to reverse (Pipes & Trahms, 1993). The need for adequate and appropriate care is appreciated globally (UNCRC, 1989), regionally (OAU African Charter on the Rights and Welfare of the Child, 1990) and even in individual countries. Consequently, in its Master Plan on Education and Training for the period 1997-2010 (Republic of Kenya, 1998), the Government of Kenya (GoK) planned to put emphasis on developing the capacity of families and communities to actively participate in ECD programmes. This was to facilitate the achievement of its objective of developing an integrated nurture of children's affective, cognitive and physical attributes.

According to Brofendrenner (1986/1989), children's microsystems (among which are ECD Centres) are made up of the personal qualities of people therein including teachers, caregivers and peers; as well as the quality of the physical environment to which the child is exposed. Consequently, one of the ways in which communities need to actively participate, is in the provision of the necessary inputs that motivate teachers and promote the quality of physical environments. The inputs that communities can impact on, in the Kenyan schools, consist of what Herzberg, Mausner and Snyderman (1959) termed 'hygiene' or 'job context' factors or needs. They include physical working conditions, salaries, benefits, job security, and interpersonal relations. Indeed studies done in Kenya have consistently found teacher satisfiers to comprise hygiene factors (Karagu, 1980; Ngaroga, 1985; Gatheru, 1987; Waithaka, 2003). Thus, as Herzberg and Snyderman (1959: 115) appreciate:

In jobs that offer little chances of responsibility and achievement and little opportunity for self-actualization (*as is the case in preschool teaching*), hygiene factors are exceptionally important.... and that, the fewer the opportunities for the motivators to appear, the greater must be the hygiene offered to make the work tolerable.

Motivating teachers is important because as Read, Gardner and Mahler (1993: 41) assert, "evidence abounds that the teacher is the most important single factor in determining what a school experience will be like for children". Research (Howes, Smith & Clanlinsky 1995; Love, Ryre & Faddis, 1992; and Essa,

2003) has also demonstrated that motivated preschool teachers become warm, sensitive, nurturing, responsive, and encouraging to children. Such teachers also become less negative in disciplinary techniques. As a result, the children they handle develop positive emotional adjustments and enhanced cognitive, language and social skills. They also display fewer behavioural problems and become socially competent. Ultimately, the amount of adult interaction with children becomes greater and more beneficial, and children have friendlier interactions with peers.

Unfortunately, research in Kenya's ECD centres reveals that the existing teachers' working conditions are poor and, therefore, unlikely to promote the teacher and child outcomes afore described. Most ECD teachers work in what Herzberg (1959) described as *unhealthy psychological work environments*. Their conditions include unclear terms of service (Makoti, 2005), low irregular salary – averaging Ksh.2000 (about 27 US Dollars) per month, heavy workload and a lack of necessary facilities, equipment and materials (Ngome, 2002; Makoti, 2005). Research further shows inadequate physical environments in preschools, including those within primary school compounds where their lower primary counterparts are superior in terms of availability and appropriateness of facilities (MOEST, 1999). According to Ngome (2002) the physical working conditions in most public centres are characterised by windowless, rough mud walled and floored classrooms, and others that are iron-sheet walled and roofed. Worse still, most of these classrooms are also congested (Gakii, 2003; Ng'asike, 2004).

## STATEMENT OF THE PROBLEM

The afore-going research findings suggest that the level of motivation of Kenyan ECD teachers is too low to support children's holistic development. The situation also suggests low community participation in the provision of the necessary teacher motivation inputs. The apparent low community participation existed in spite of communities' awareness that it was their role to provide the necessary inputs for the centres (KIE, 1992), and their evident provision of better resources in primary schools (MOEST, 1999).

This investigation was motivated by studies on quality child care, which showed a positive relationship between inputs (group size, the child to adult ratios, characteristics of staff including terms and conditions of service, and the physical environment), and institutional dynamics that yield positive outcomes. The studies revealed that, when the inputs are adequate, the dynamics (including teacher motivation) are positive and the outcomes beneficial and vice versa (Dahlberg, Moss & Pence, 2001; Florida Child Care Quality Improvement

Study, cited by Howes, Smith, & Galinky, 1995). Literature also demonstrates that large child-teacher ratios, low remuneration and poor physical working conditions have negative effects on teachers, and by extension on children (Howes, Smith & Galinky 1995; Ofoegbu, 2004; Buckley, Schneider & Sheng, 2004). The Identified benefits of developmentally appropriate environments on children include reduced absenteeism, repetition of school grades and dropout rates; high scores on cognitive, reading and mathematics tests; greater thinking and attention skills as well as fewer behavioural problems. Children were also less likely to suffer from mental illness and behaviour disorders or require special education. Additionally, they are more likely to graduate from high school and college and to earn higher salaries when employed – thereby becoming less dependent on state welfare. Further, for each dollar invested in appropriate early childhood learning programmes, taxpayers reportedly save 4-7 US dollars in later years (Buckley, Schneider & Sheng, 2004; Heschong Mahond Group, 1999, cited in Buckley *et al*, 2004; National PTA, 2002).

Unfortunately, the situation in Kenya appears far from being ideal in facilitating teacher motivation and creating an adequate physical environment that would lead to the realisation of the benefits found to accrue to quality early childhood education in other countries. The teachers seem de-motivated by poor terms and conditions of service, low salaries, low status, poor or lack of retirement benefits, low chances of promotion, lack of knowledge on career progression, heavy workload and poor working environments (Ngome, 2002; Waithaka, 2003; Makoti, 2004). In addition, most of them work in what Ngome (2002) terms “work unfriendly conditions” characterised by congested semi-permanent facilities that are not fenced; with inadequate learning materials and equipment; and lacking in, or having inappropriate, desks and chairs. Consequently, teachers resort to activities such as hawking foodstuffs, selling second hand clothes and farming, to supplement their income. In effect, the number of hours spent in some ECD centres has fallen and the rate of teacher attrition is high – much to the disadvantage of the children. Hence, this study sought to address these issues by investigating the existing modes and levels of community participation, their relationship to the preschool environments and the factors influencing community participation.

More specifically, the main focus of this study was therefore to investigate factors accounting for the apparent low community participation in ECD in Kenya. The situation required intervention to enable preschool teachers to be effective in their work, and to realise the benefits found to accrue to quality early childhood education in other countries. As such, this study focused on identified factors affecting community participation that have not been studied

in Kenyan preschools, including community members' educational level, age, gender and rural-urban settings.

## RESEARCH OBJECTIVES

The objectives of the study were to:

- i. Establish the existing modes and levels of community participation in preschools.
- ii. Determine the suitability of preschool environments and preschool teachers' motivation levels.
- iii. Explore preschool teachers' motivators and de-motivators.
- iv. Assess the extent to which community participation influenced preschool teacher motivation and the physical learning environment.
- v. Investigate the factors that influenced community participation in preschools.
- vi. Recommend ways in which community members may enhance participation.

## CONCEPTUAL FRAMEWORK

The ultimate goal of any ECD programme is children's holistic development. Children need to be nurtured in order to grow into well-balanced, responsible and productive social beings. This requires that they be cared for and educated in friendly environments, both at home and in ECD centres.

To create and maintain the necessary child-friendly environment in these centres requires that community members participate effectively. The extent to which each member participates may be influenced by his or her age, gender, marital status or educational level. It may also be affected by the preschool sponsorship and its geographical context (rural or urban setting). These factors may have varying influences on the type of participation a member is involved in, such as decision-making, collaborating, volunteering and communicating.

Signatories to the UNCRC (1989) and the African Charter on the Rights and Welfare of the Child (OAU, 1990) recognise the right of every child to a standard of living adequate for his or her physical, mental, spiritual, moral and social development. The Charter assigns to parents and others responsible for the child the duty to secure, within their abilities and financial capacities, conditions of living necessary for the child's development.

Governments, on their part, are charged with the responsibility of ensuring the development of institutions responsible for providing care of children, and to

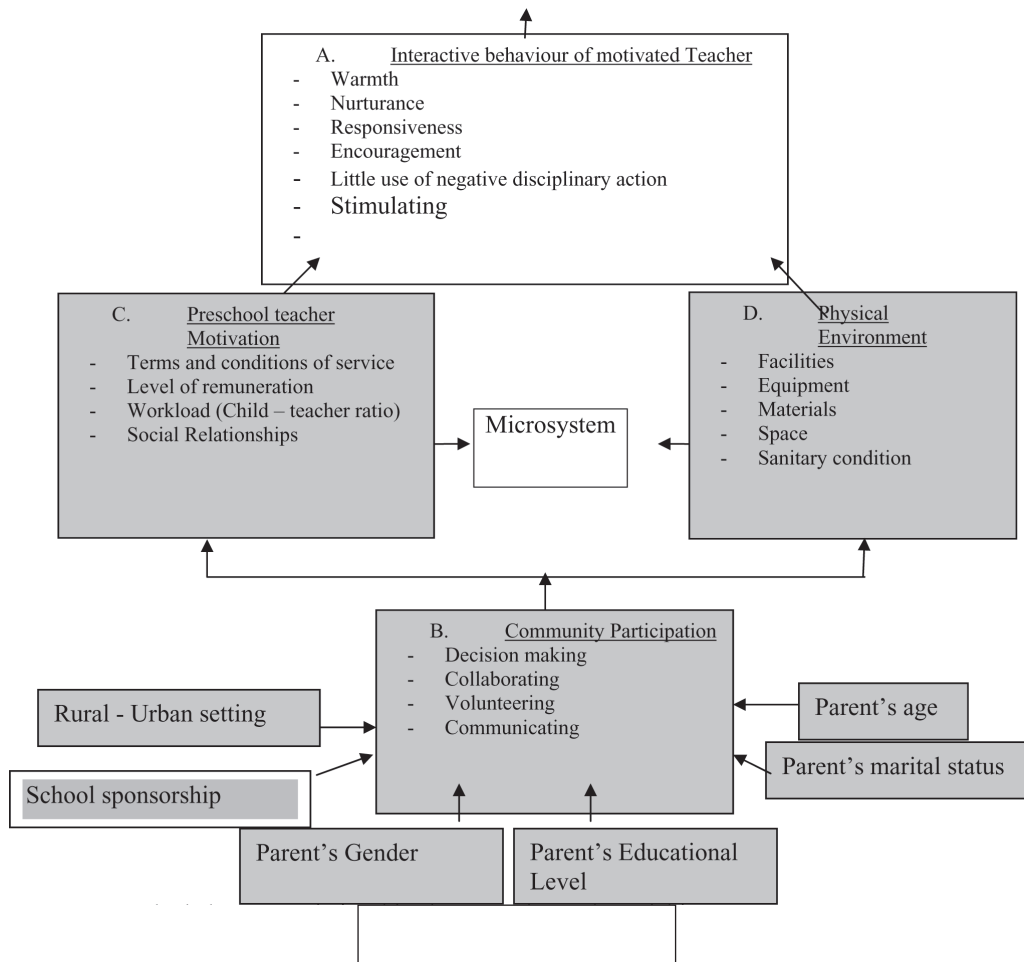


ensure that such institutions conform to the standards established by competent authorities, particularly in the number and suitability of their staff, but only within their means and national conditions. Where Government means are insufficient to support adequate, trained and motivated teachers, the community has to shoulder the responsibility, as well as provide the appropriate physical environment.

Consistently, Bronfenbrenner (1986) advocates that the physical facilities, equipment and materials present in the environment in which children live, and the interpersonal relationships of the persons with whom they interact, influence children's development. Consequently, according to Epstein (1995), communities need to participate by collaborating, volunteering, communicating and decision-making in order to influence the quality of the environment that children experience in preschools. Ideally, such participation should be aimed at satisfying the individual's need for self-actualisation in his / her work (Herzberg, 1959). However, since this need is difficult to satisfy, in institutions such as ECD centres, reducing dissatisfaction through improving the physical working conditions, salaries, job security and interpersonal relations is thought to be exceptionally important. The relationship between the level and mode of participation and reduction of dissatisfaction needs to be examined in order to establish whether or not enhancing community participation would provide the needed solution to the unsatisfactory preschool microsystems.

The type and level of participation in ECD programmes dictates the psychosocial environment in which a child learns. One of the most important influences on this psychosocial environment is the level of preschool teacher motivation. Community participation should, therefore, be geared towards motivating teachers and providing a child friendly environment. Satisfying teachers' hygiene needs, including favourable terms and conditions of service, a manageable workload, 'good' remuneration as well as providing an adequate physical working environment is expected to result in motivating them. This, in turn, is likely to result in teachers becoming effective in stimulating and nurturing children, responding sensitively to their needs, encouraging them and using few negative disciplinary actions. Consequently, teachers would achieve the ultimate psychosocial development goals in children: the development of high cognitive and language skills, positive emotional adjustment and social competence. The relationships between these variables are illustrated in Figure 1.

COMMUNITY PARTICIPATION: A FACTOR IN PRESCHOOL TEACHER MOTIVATION AND ADEQUACY OF THE PHYSICAL LEARNING ENVIRONMENT



**Key:** Shaded area - Relationships between the study variables.  
Unshaded area - Expected teacher and child outcomes not included this study

**Figure 1: Conceptual Frame-work: Influences of Community Participation**

## METHODOLOGY

The methodology followed in this study is briefly sketched below under various sub-headings which include research design, study locale, target population, sampling technique and sample size, research instruments and data analysis techniques.

### Research Design

The study employed an *ex-post-facto* research design, yielding mainly descriptive data. The variables studied were at two levels as shown in Table 1.

**Table 1: Study Variables**

<b>Level</b>	<b>Independent Variable</b>	<b>Dependent Variable</b>
1	<b>Subject:</b> Age, Gender, Marital status Academic level <b>Contextual:</b> Rural-urban setting Sponsorship	Community participation
2	<b>Modes of Participation:</b> Decision-making, Collaborating Volunteering, Communicating	Teacher motivation
		Preschool physical environment

As shown in the table, the first level comprised six independent demographic (subject and contextual) variables. The subject variables included individual member's age, gender, academic level of education and marital status. The contextual variables consisted of school sponsorship and rural-urban settings. The dependent variable for this level was the 'total' community participation in preschools.

In the second level, the four modes of community participation, that is, Decision-making, Collaborating, Volunteering and Communicating made the independent variables. The dependent variables were the levels of teacher motivation, as well as the physical environments.

### *Study Locale*

The research was carried out in Thika District of Central Province, Kenya. The district was chosen because it encompassed the following characteristics:

1. Large geographical area.
2. High population, *albeit* unevenly distributed.
3. Pre-schools of the four categories of sponsorship: public, private, Local authority (LA) and faith led, or Religious Organizations (RO).
4. Varied economic potential and ecological zones, that is, Thika municipality, Ruiru and Juja zones with diverse residential areas ranging from upper

middle class to informal settlements, high potential rural areas – comprising Kariara and Kigoro zones, moderately low agricultural potential zone of Mitubiri and the semi-arid zones of Kakuzi and Ithanga.

### *Target Population*

The target population for the study consisted of all preschools in the district, their teachers, communities and committees. According to the records, the district had a total of 764 preschools of which 390 were found in the identified participating zones. Out of the 390 pre-schools, communities sponsored 99, private individuals 189, Local Authorities 36 and Religious Organizations 66. The samples from this population and sampling techniques are discussed in the section below.

### *Sampling Techniques and Sample Size*

Stratified random sampling with purposive selection of the strata and simple random sampling using the lottery technique were employed in the study. This was to ensure representation of all desired categories of strata; socio-economic potential (high and low zones), the geographical context (rural and urban), and the preschool sponsorship. Using these methods, a total of 40 preschools, 46 teachers, 240 community members and 14 committees were sampled. One committee was later added during data collection when plantation preschools distinguished themselves as a unique category. The number of sampled pre-schools per zone and category were as illustrated in Table 2.

**Table 2: Number of sampled preschools per zone and category**

<b>Zone</b>	<b>Public</b>	<b>Private</b>	<b>L.A</b>	<b>R.O.</b>	<b>Total Number of schools</b>
Kariara	1	1	1	–	3
Kigoro	1	1	1	–	3
Thika municipality	2	7	–	2	11
Ruiru	2	6	–	1	9
Ithanga	1	–	1	1	3
Kakuzi	1	1	–	1	3
Mitubiri	1	2	–	–	3
Juja	2	2	–	1	5
Total	11	20	3	6	40

### *Research Instruments*

The data were collected using four instruments: Preschool Teachers' Motivation Questionnaire, Preschool Community Participation Members' Interview Schedule, Preschool Committee' Focus Group Discussion Guide (FGDG) and the Preschool Physical Environment Check List. All the instruments were constructed by the researchers. To check for consistency in their content, the split-half test of reliability was carried out. The relevant instruments analyzed for this purpose were administered on 20 community members and five teachers. Scores from even numbered items were correlated against scores obtained from odd numbered items. Data collected in the pilot study were analysed using Spearman's Correlation Coefficient at the significance level of  $\alpha = 0.05$ . The instruments were found to be reliable.

To ensure validity, expertise of two peers who were familiar with the study area were sought. These were asked to check whether the items in the instruments were viable to collect the intended data. Additionally, the researchers conducted all the Focus Group Discussions and the community interviews in person in order to ensure systematic validity. The administration of the other research instruments was done using trained research assistants. The data collected were analysed as discussed in the following section.

### **DATA ANALYSIS**

Quantitative data elicited through the use of the community members' interview schedule, the physical environment checklist and the teachers' questionnaire were analysed using the Statistical Package for Social Sciences (SPSS). Qualitative information collected from the interview schedule and the FGDG was summarised according to similarities and common themes, and was used to explain and complement the quantitative information.

In each of the four modes of community participation: decision-making, collaborating, volunteering, and communicating (a total of 14 items) were measured using a four-point Likert scale. Using the scores for the four modes of participation, the mean  $z$ -score and frequencies were worked out. This statistic is a standard score with a mean of zero (0) and a standard deviation of one (1). The mean  $z$ -score was, therefore, used in order to enable comparisons on levels of community participation, since it provided the same mean for all the modes of participation. Using this statistic, a raw score above the mean attains a positive  $z$ -score and that below the mean a negative  $z$ -score (Orodho, 2004). The level for each mode was thus classified as either high or low, based on this mean. Consequently, high participation constituted scores above the mean  $z$ -score and low participation scores below it.

The **suitability of preschool physical environments** was determined by the availability, adequacy and safety of facilities, equipment and materials. The observation checklist used, elicited categorical data whereby *Not Applicable* scored zero (0), *No* scored one (1) and *yes* two (2). To get the average suitability of the environment the scores for the different aspects were summed up and the *z*-score of the totals obtained. Any score above the mean *z*-score was taken as high, denoting a suitable environment, while those below were considered low and, therefore, unsuitable.

The level of preschool teacher motivation was measured using a six-point Likert scale. This scale was used to rate 19 motivation variables adapted from Herzberg's study. Teachers' level of motivation was obtained by calculating the mean *z*-score. As in the suitability of preschool physical environment, scores above the mean were considered high and those below it low. Cross tabulation of the level of community participation against the suitability of preschool physical environment as well as the level of preschool teacher motivation was done in order to establish their relationships.

Chi-Square was then used to test for any significant association between community participation and the suitability of preschool physical environment, and between community participation and preschool teacher motivation at the same significance level of  $\alpha = 0.05$ . Chi-Square was also used to establish whether there was a significant difference in community participation on the basis of the members' subject and contextual variables at the same  $\alpha = 0.05$  level of significance.

## **SUMMARY OF RESULTS AND RECOMMENDATIONS**

The level of community participation was generally low and varied across the four modes as illustrated in Table 3.

**Table 3: Modes and Levels of Community Participation**

Mode of Participation	Level of Participation			
	High		Low	
	Frequency	Percent	Frequency	Percent
Volunteering	90	40.7	131	59.3
Communicating	88	39.8	133	60.2
Collaborating	83	37.6	138	62.4
Decision-making	64	29.0	157	71.0
<b>Total</b>	<b>325</b>	<b>36.8</b>	<b>559</b>	<b>63.2</b>

It is evident from Table 3 that volunteering was the most common mode of participation. The most frequent forms of volunteering however consisted of attending meetings and participating in workshops that were not strongly backed by collaborative activities that would create space for the necessary inputs. The second most frequent mode of participation, communicating, comprised mainly one-to-one conferences whose main agenda was children's performance and not improvement of either teacher motivation factors or the physical environments. There was also teacher-parent/guardian correspondence through homework books which was limited to private schools, perhaps due to low literacy levels of most parents in the other sponsorships.

Participation in the collaborating mode was very low, particularly in fund raising activities and organising centralised feeding programmes. In addition, while most parents paid fees, the amounts paid were very low and therefore inadequate to support suitable microsystems. Inconsistently, community members were aware of the existing inadequacies in the microsystems but failed to address them due to over reliance on the low fees. Further, it was found that participation in decision-making was almost nonexistent due to the belief that school management was to take the sole responsibility. An enquiry on the causes of the low levels of participation revealed that except on matters related to discipline, community members participated mostly in activities to which they were invited, and the invitations were too few and far in between.

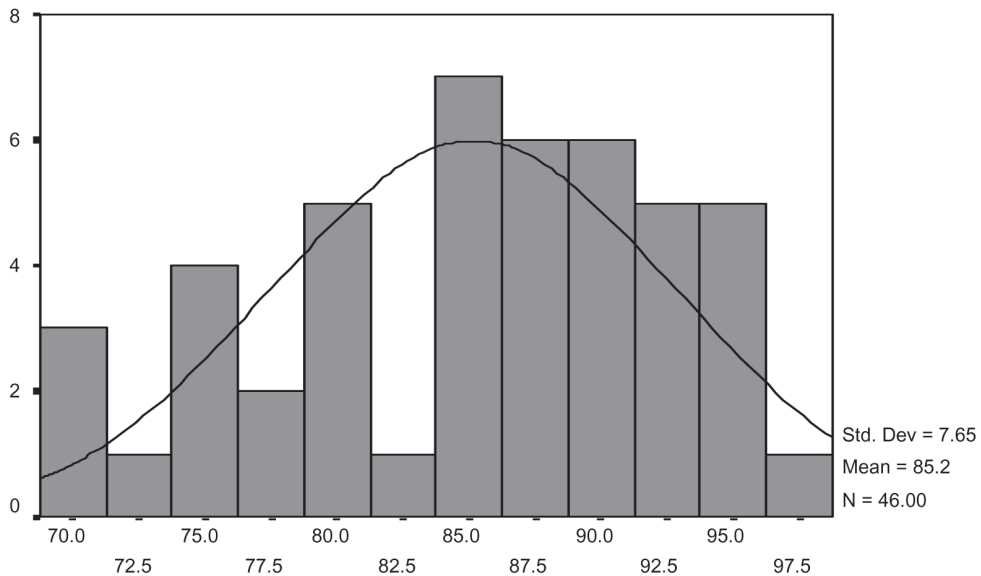
Consequently it was established that the suitability of the physical environment of more than half of the preschools was below average. Further, in most schools the facilities, equipment and materials available, although adequate in quantities, were limited in variety and not safe as shown in Table 4.



**Table 4: Suitability of the Physical Environment**

Criteria of suitability of the environment	Levels of suitability of facilities, equipments and materials			
	High (Suitable)		Low (Unsuitable)	
	Frequency	(%)	Frequency	(%)
Availability	17	42.5	23	57.5
Adequacy	27	67.5	13	32.5
Safety	18	45.0	22	55.0
Aggregate Suitability	<b>18</b>	<b>45</b>	<b>22</b>	<b>55</b>

In addition, more than half (52.2%) of the preschool teachers recorded low levels of motivation. As the graph below illustrates, the motivation levels of the majority of the teachers fell below the mean score of 85.2 (see Figure 2).



Teacher's Motivation Scores

Key: x-axis: mean scores; y-axis: motivation levels

**Figure 2: The motivation levels of the majority of the teachers**

These low motivation levels may have contributed to the 54.56% rate of teacher attrition (Ngome, 2002) that characterised preschools and the negative consequent child development associated with such high teacher turn over. The study found the major teacher de-motivators to consist of delayed and irregular salaries, poor learning environments, heavy demands at work and lack of clear conditions and terms of service. The motivators on the other hand

were classified into two categories. The major category comprised of good interpersonal relationships; good physical and social environments; timely payment of salaries, including during school holidays; and free housing for those in plantation and firm schools. Minor motivators comprised factors such as good management; personal convenience such as being near home; fringe benefits like being fed within the school feeding programme, and manageable numbers of children in class.

In summary, the levels of community participation, those of preschool physical environment and teacher motivation were low. The chi-Square tests of association between the level of community participation and both the suitability of preschool physical environments and teacher motivation, however, were not statistically significant, that is, 0.919 and 0.484, respectively, at  $\alpha = 0.05$  level of significance. These results suggested that the levels of community participation were not significantly related to either the suitability of preschool physical environments or teacher motivation that impact on children's learning and development. By extension, therefore, the findings implied that community participation was not related to children's development. This is contrary to earlier studies that had documented that both community involvement and the quality of preschool facilities have an impact on the health and development of children (Pelegriano, Schorott & Straschnoy 1983, cited in Ringley, 2001; Young, 1995; Flynn, 1996; Buckley, Schneider & Shang, 2004; Love, Ryer & Fiddis, cited in World, 2002).

The findings also seem to contradict literature that shows community participation to have positive implications on preschool microsystems (Zigler & Stevenson, 1993; Howes, Smith & Galinsky, 1995). The contradiction might, however, only have been apparent since teachers' motivation reportedly depended on good interpersonal relationships, good working conditions and timely payment of salaries. These teacher motivators relate to their work context that is shaped by community members. It may, therefore, be argued that, the lack of a significant relationship between participation and teacher motivation was due to the extremely low levels of participation. Thus, raising community participation may facilitate better measurements thereby hopefully improving preschool environments and raising teacher motivation. In order to raise participation, it is important to identify the factors that influence it essential

#### *Identified Factors Enhancing Community Participation in Preschools*

One of the important factors found to influence community participation was the rural-urban setting, with rural areas registering higher levels of community participation in ECD centres. This concurs with Wawire (2006) whose

findings revealed that Nairobi District (urban), had better levels of physical facilities, play equipment, teacher- pupil ratios, learning materials, nutrition and sanitation compared to those of Machakos District (rural). Waweru (1982) also found the disparity in the quality and quantity of primary school facilities to be based on rural-urban settings. There was also a significant association between preschool sponsorship and community participation. In this respect, community members of private schools had the highest levels of participation followed by those of public schools. Those in ECD centres affiliated to religious organisations and plantations came third while Local Authorities had the lowest levels. This was in consistence with Waithaka (2003) in her study of preschool teacher job satisfaction by type of school sponsorship in Thika Municipality, Kenya. On the other hand, parents' gender, education level, marital status and age, did not influence community participation contrary to what is indicated in the conceptual Framework. However, this study identified other factors that facilitated participation which included parental commitment or feeling obliged to contribute to their children's learning, sense of ownership towards the school, friendliness of teachers and managers, invitation or being given opportunities to participate, proximity to the school, ability to pay and unity among parents.

#### *Factors Hindering Community Participation in Preschools*

The reasons that community members gave for not participating actively included lack of encouragement/ invitation/opportunity from school management and teachers. There was also a lack of awareness on the need and the areas in which they were required to participate. Those who cited vital economic commitments as a hindrance to their participation said that they could not afford to leave their businesses or miss out on their casual work since they lived from hand to mouth. The initiation of Free Primary Education was also reported to have contributed to low participation. In this regard, parents argued that since the government was taking care of older children at the primary school level, it should do the same for the young ones in ECD centres.

## **CONCLUSION**

This study established that, there was minimal community participation in the four modes relevant to preschools vis-à-vis volunteering, communicating, collaborating and decision-making. The levels of participation in the different modes decreased progressively in the order in which they are presented here. Additionally, levels of preschool Microsystems (physical environment and teacher motivation) were below average and, therefore, may be inadequate for the holistic development of children. Although the levels of community partici-

pation were not significantly related to those of the preschool Microsystems, the factors that teachers identified both as motivators and de-motivators require community action. The teacher motivators consisted of: good interpersonal relationships, good physical environments, salary paid on time and during school holidays and housing. De-motivators on the other hand comprised of: delayed and irregular salary, poor learning environment, heavy demands at work and lack of clear conditions and terms of service. Thus, enhancing community participation in preschool is still necessary in order to motivate teachers and improve the physical working and learning environment.

## **STUDY RECOMMENDATIONS**

Based on these findings the researchers wish to make the following recommendations:

- Communities be sensitised on the value of preschools and the need to participate in their development and running. In this respect, community opinion leaders need to be targeted first since they have an influence on other community members.
- Preschool teachers and management also need to involve community members in their activities such as open days, prize giving days, and material-development days. They could also involve them as resource persons.
- Community members should impress upon preschools on the nature of their work and other social commitments to enable them plan for activities when a majority can avail themselves.
- Scheduling meetings for weekends may be one of the options that they may recommend in order to raise community participation levels.
- Policy makers need to design strategies to empower women economically in order to strengthen their decision-making and collaborative abilities since they were the majority among the people who participated in preschool activities.
- The section of the Kenya ECD Policy Framework relating to preschool management should also provide for basic school management training/induction of newly elected and nominated members into the ECD centre committees, in order to enable them play their roles effectively.
- Finally, the government and local communities should motivate teachers further by establishing friendly relationships with them, improving on their remuneration, demonstrating appreciation for their work and ensuring that the preschools' physical environments are conducive to work.

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# Notes, comments and illustrations

## Learning more about Braille

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“If anyone invents a new system of printing for the blind, shoot him on the spot” (Irwin, 1955/1970: 47)

### INTRODUCTION

Most sighted people are generally unaware of the plight of persons with visual impairment, and the instruments they have to use to get by, day by day. This paper is an attempt to bring about increased awareness of this very important topic, with specific reference to Braille. In order to do this, there is need to sensitize and create awareness of the human community about persons with visual impairment and their communication skills such as Braille so as enable them to discover, develop and to tap their potentials, for, disability is not inability. It is envisaged that increased awareness amongst sighted people will play the role of rallying support for visually impaired persons in the various forms of their lives – thereby assisting them realise their dreams. Indeed, the writer posits that increased awareness will in turn lead to social advocacy, educational provision, political and religious inclusion and economic improvement of visually impaired persons. To this end, this paper firstly briefly presents the

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background regarding the historical treatment of persons with visual impairment, before going on to the development of Braille; the Braille code, Braille transcription, Braille embossing technology and Braille challenges in education institutions, such as primary and secondary schools.

## **VISUALLY IMPAIRED PERSONS IN HISTORICAL PERSPECTIVE**

Irwin's personal conviction quoted above is most likely a view of someone who was visually impaired and who had experienced the literary satisfaction of Braille as a medium of communication and learning. Evidently, the quotation bears witness to the success of Braille against its dark background. As Rex, Koenig, Wormsley and Baker (1995: 150) observe, "until Braille was developed in the early 1800s by Louis Braille, a young student at LL. Institute Nationale des Jeunes Evugos in Paris, there was no effective way for people who were visually impaired to become literate".

Casting one's eye along the path, in history, that has been travelled by visually impaired people is both sobering and scandalous. The brief description below bears testimony to this statement.

### *Extermination Phase*

There was a time in history when it was common practice when visually impaired people were ostracized, neglected or even given to be killed (Ndurumo, 1993). They were seen as a hopeless case of poor health, having no potential to contribute anything of any value to the community's welfare and warfare.

### *Ward Status Phase*

The Ward Status Phase fell under the Judaic and early Christian error during which time care and compassion for persons who were visually impaired began to be advocated through religious healing and social awakening. Persons with visual impairment demanded recognition and regard as members of the human race who also had basic needs of physical, medical, intellectual and spiritual nature. Accordingly, asylums and other similar shelters were established for them to meet, particularly, their socio-economic needs. In these early days of societal awakening, however, literacy was the least concern for people who were blind or visually impaired (Rex *et al*, 1995).

### *The Self Emancipation Phase*

This phase became prevalent in the 17<sup>th</sup> and 18<sup>th</sup> centuries, just after the Renaissance, during which time some visually impaired individuals – mainly through

their own initiatives, distinguished themselves as musicians, teachers, lawyers, interpreters, engineers and philosophers (Farrel, 1995). By so-doing, they had won their dignity as complete human beings; they had demonstrated that, given opportunity, persons with visual impairment, could achieve as much as sighted people, and became assimilated into the wider society. Most of them had learned to read by the use of cut out letters and to write by pricking letters on a piece of paper held in position on a frame. Consequently, this practice made it clear that people who were visually impaired were capable of being educated and that their intellectual abilities were intact, despite their loss of vision (Farrel, 1995).

### *Special Schools Phase*

Special schools sprang up in Europe, America and Africa in the 19<sup>th</sup> and 20<sup>th</sup> centuries, in that order. As things happened, it was at one of these special schools in France that Louis Braille (1809 – 1852) developed the Braille code. This was a breakthrough for the education of persons with visual impairment – an invention that has, since then, withstood the test of time. Among many things, Braille has significantly simplified the communication skills of writing and reading for visually impaired learners – thereby enabling them to learn and compete effectively with their sighted counter-parts. In addition, Braille has made it possible for visually impaired learners to be integrated and included in regular schools, provided such schools are adequately resourced and equipped.

## **THE BRAILLE CODE**

Braille is a system in which characters, or raised dots, are portrayed graphically by presenting them in units called cells. Braille, named after its designer Louis Braille, is a system developed from a raised 12-dot code, developed initially by Charles Barbier, as “night writing” to be used by soldiers during the war. However, in 1829, Braille, a 15 year old pupil adapted the 12-dot code into a 6-dot cell system. Accordingly, each cell contains one to six numeral dots. A full cell has two vertical columns of three dots each, as follows:



As a medium of communication, Braille occupies a larger space than print. Hence, the designer used 63 configurations / contractions in the following manner:

***Alphabet letters:*** (French 25)

***Ancient marks:*** (French 15)

***Addition of letters:*** W- 1

***Punctuation marks:*** 10

***Mathematical signs:*** 2

Using these configurations, Braille was able to write music, numbers, signs as well as other objects by 1834.

### *Standard English Braille*

As a system of writing and reading, Braille was gradually accepted in England, America and Canada but with significant variations: Braille grade one (full spelling), Braille grade one and half (half contractions), and Braille grade two (fully contracted) which was mostly used in Britain.

Through the efforts of persons who were visually impaired, an agreement known as treaty of London was signed in 1932 to make revised British grade two the medium of reading and writing for people who were visually impaired. It is this standard English Braille grade two that has become the standard literary code for English speaking countries. Since 1932, however, a few new signs and rule changes have been added to the code – particularly those made in 1980, 1987 and 1991. Consequently, current Braille configurations in standard English Braille are rendered thus:

***Alphabet letters:*** 26

***Ancient mark:*** 1

***Punctuation marks:*** 20

***Mathematical signs:*** 10

***Special composition signs:*** 10

#### **Whole word signs**

***One-cell*** 43

***Two-cell*** 33

#### **Part-word signs**

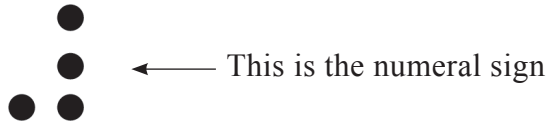
***One-cell*** 23

***Two-cell*** 14

***Short form words*** 76

***The total is*** 256

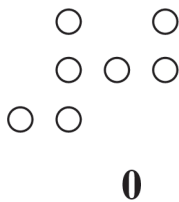
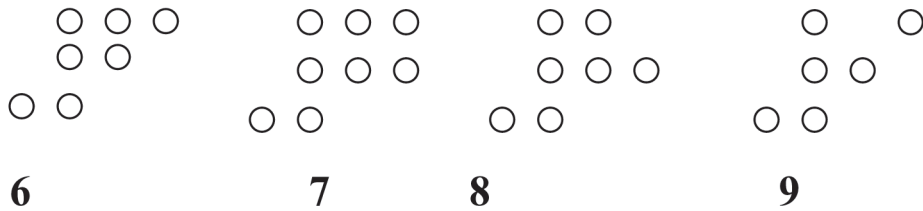
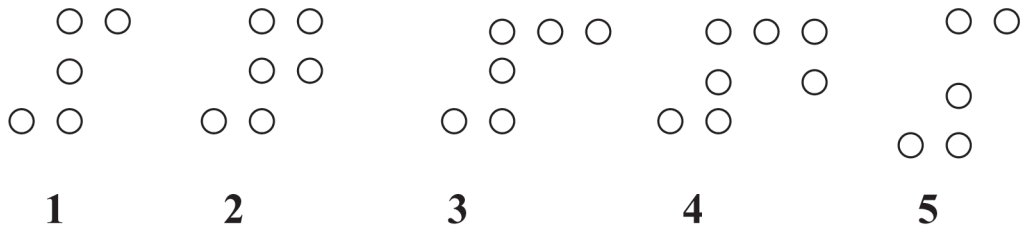
Letters a to j constitute numbers in accordance with their alphabetical order. Thus, a equals one whereas j equals zero provided that each numerical expression is preceded by the number sign.



Below are the alphabets both in Braille and print.

<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>
● ○	○ ●	○ ●	● ○	● ○	● ●	● ●
● ●	● ○	● ●	○ ○	● ○	○ ○	○ ●
○ ○	○ ○	○ ○	● ○	● ○	● ○	● ○
<b>H</b>	<b>I</b>	<b>J</b>	<b>K</b>	<b>L</b>	<b>M</b>	<b>N</b>
● ●	● ●	● ○	○ ●	○ ●	● ○	● ○
● ○	● ●	● ●	● ○	● ●	○ ○	● ○
● ○	● ○	● ○	● ○	● ○	● ●	● ●
<b>P</b>	<b>Q</b>	<b>R</b>	<b>S</b>	<b>T</b>	<b>U</b>	<b>V</b>
● ●	● ●	● ●	● ○	● ○	● ○	○ ●
○ ○	○ ●	○ ●	○ ●	○ ●	○ ●	○ ●
● ●	● ●	● ●	● ●	● ●	● ●	● ●
<b>X</b>	<b>Y</b>	<b>Z</b>				

The following are numbers in their Braille and print forms



All letters, digits and symbols of print may be portrayed in Braille using various configurations of dots in any language. Hence, it is possible to make literal transcription of Braille to print, and *vice versa*. To this end, any language may develop its Braille code through a recognised Braille authority, be it local, national or international.

From standard English Braille various Braille codes have been developed, e.g. music Braille, Mathematics Braille, Science Braille, Nemeth Braille, computer science, Kiswahili Braille, and others. However, it is worth noting that configurations in one code / format do not necessarily have the same meanings in other codes. Thus, teachers who may know literary Braille in one language may or may not know the various other codes and notations even in the same language unless taught. In the same line of thought, wrong addition of a single dot or its omission in a Braille letter may result in a significant deference in meaning. Nonetheless, Braille is an effective system for conveying a writer's message to an audience through a language in which it is developed.

## CHALLENGES

Although read by touch, Braille challenges should never be exaggerated as a communication skill. In the 1960s and 1970s, studies were carried out to compare print and Braille writing and reading, and concluded that there were countless similarities in teaching children who are visually impaired and children with normal vision to read and to write, and in the way they learned (Nolan & Kederis, 1969; Kusajima, 1974; Hampshire, 1975; Rex *et al*, 1995). It is these similarities that in subsequent years have justified integrating and including learners who read Braille in the same classroom with those who read print. In this regard, the classroom teachers are, themselves, faced with the challenge of acquiring functional literacy by learning Braille, like their students who are visually impaired. Indeed, teachers' Braille proficiency would enable them to adapt the literacy instructions for the visually impaired accordingly, taking its unique aspects into account. There cannot be effective communication between teachers and learners in a language that is only known by the learners.

As Braille cuts across the school curriculum, each special educator should be trained to teach literacy; be competent in reading and writing the Braille code; and be able to incorporate Braille instructions and learning into the learners' reading and writing skills (Nzoka, 2008). This is achievable through interest, motivation and regular practice in reading and writing Braille on the part of both teacher and learner. However, in practice, one observes that many trained teachers "leave" Braille at their training institutions and go to school only with print.

It may be noted further that, in Kenya, Braille in primary and secondary schools is an instructional method rather than a subject, as it is in tertiary institutions. Formal learning in the classroom requires that the learner is adequately resourced, orientated and equipped. For instance, the Perkins Braille model has proved to be quite efficient, portable and durable. It also writes from left to right similar to writing in print.

Another point is that it is not enough for any country just to have special schools, integrated units, special departments in colleges and universities. It is necessary that each country must have Braille authorities work in conjunction with the educational institutions and languages within the country or region. The functions of such Braille authority would include:

- Maintaining Braille standards.
- Regulating Braille teaching
- Carrying Braille research



- Determining various language Braille codes and acting as print reference in all matters related to Braille literature and use.

The Kiswahili Braille draft currently used in East Africa, for instance, requires urgent review for it is quite inadequate as Kiswahili grade two.

## CONCLUSION

This paper has briefly traced the historical plight of persons with visual impairment – covering the periods when many suffered extermination; how others being forced into institutions or compelled to beg for their existence; and how social and religious attitudes towards persons with visual impairment changed, mainly as a direct result of the self-actualisation of the visually impaired persons themselves in social and economic terms – once given opportunities and allowed the necessary space. The attendant awareness and insight into the abilities and capabilities of visually impaired persons resulted in them finally being acknowledged as human, educable and economically productive. The paper has also introduced the reader to the development and subsequent acceptance of a single tactile reading and writing system (Braille) that visually impaired persons could use successfully for their literals to be truly realised – as well as how technological advances have enabled persons with visual impairment to access information and Braille products from print through computer embossers and internet without much effort. In this regard, the writer believes that this paper has succeeded in achieving its objectives.

However, there are some people who feel that Braille is no longer needed even in our schools; that it can be replaced by the new equipment that translates directly from print into speech or automatically produces Braille. The point to make in countering this view is that much as technology is beneficial in many ways, it does not absolutely allow or compensate for what persons with visual impairment require, and can still achieve through Braille – in particular, the ability and pleasure of reading and writing adequately and privately; directly communication with Braille products on paper and scholarly interpreting the information provided. As Rex *et al* (1995: 24) posit: “Braille is literacy for people who are blind”.

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