An Investigation of the Form of HIV/AIDS and Reproductive Health Education (RHE) in South African Secondary Schools for the Deaf and the Factors Influencing Teacher Implementation Thereof

By

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Abstract

The HIV/AIDS pandemic is having a devastating effect on the South African population. Most affected are young people between 15 and 24. HIV/AIDS research has paid little attention to youth in the D/deaf population. Schools play an important role in the reproductive health of youth as they reach youth at a formative time in their development. Aim: To investigate the form of HIV/AIDS and RHE in South African secondary schools for the D/deaf, together with factors associated with teacher implementation thereof. Methodology: The sample was made up of 33 Life Orientation teachers from 16 secondary schools for the Deaf in 6 South African provinces. Quantitative methodology was used to obtain descriptive data and to determine any associations between demographic/ contextual variables and the study's theoretical framework (Theory of Planned Behaviour); qualitative data also aided in answering of the research question. Results: HIV/AIDS and RH education is being implemented at South African secondary schools for the D/deaf and LO teachers recognise the importance of HIV/AIDS and RHE for their D/deaf learners. Despite high coverage levels, a number of obstacles are hindering the optimum implementation of HIV/AIDS and RHE: 1) lack of learner assessment in the HIV/AIDS and RHE portion of the LO curriculum 2) unclear policy mandates regarding the weighting of HIV/AIDS and RHE in the LO curriculum 3) inadequate teacher proficiency in SASL 4) the use of a mainstream LO curriculum that was not specifically developed for Deaf learners 5) the moralistic viewpoints of certain teachers 6) problems with teacher access to suitable HIV/AIDS and RHE training. A number of significant associations between TPB constructs and demographic/contextual variables were also found. Recommendations for future interventions and research are delineated and limitations of the study are discussed.

Contents

Abstract 2
Declaration 6
Acknowledgments 7
List of Tables 8
Acronyms 9
CHAPTER ONE 10
INTRODUCTION 10
General Introduction 10
Definitions 11
Youth 11
Deafness 12
Sign Languages 13
Schools for the D/deaf 16
Outline 16
CHAPTER TWO 17
LITERATURE REVIEW 17
Disability and D/deafness Globally 17
D/deaf Youth and HIV/AIDS 18
Alcohol and drug use 19
Prevalence of sexual abuse among D/deaf youth 20
Homosexuality among D/deaf youth 21
HIV/AIDS knowledge and awareness 21
Sources of HIV/AIDS knowledge 23
Parental communication 24
Attitudes and beliefs regarding HIV/AIDS 25
Self-efficacy in relation to HIV/AIDS 25
Reproductive Health Education (RHE) Policy and Practice 26
HIV/AIDS and RH Education in Schools for the D/deaf 30
Internationally 30
South Africa 34
Theoretical Framework for the study 36
The Theory of Planned Behaviour 36
Conclusion 39

CHAPTER 3 41
RESEARCH METHODOLOGY 41
Introduction 41
Aims and Objectives 41
Hypotheses 42
Methodology 43
Research Design 43
Procedure and Sample 43
Data Analysis 53
Quantitative Analysis 53
Qualitative Analysis 56
Ethical Considerations 57
Conclusion 57
CHAPTER FOUR 58
RESULTS 58
Introduction 58
Revised Objectives 58
Demographic and Contextual Profile 59
Implementation of HIV/AIDS and RH education and the form such education takes 61
Theory of Planned Behaviour Constructs 62
Outcome Beliefs 62
Subjective Norms 66
Self-efficacy Scale 68
Self-efficacy subscales 69
School Climate Scale 73
School Climate Subscales 74
Achievement motivation 74
Summary of significant quantitative findings 86
Demographic/contextual findings 86
Outcome beliefs 87
Subjective norms 87
Self-efficacy 87
School climate 88
Qualitative Results 90

Recognition of the importance of HIV/AIDS and RHE for D/deaf youth 90
Inadequate SASL proficiency among teachers 91
Inadequate provision of HIV/AIDS and RHE programmes to D/deaf schools and inadequate teacher-training 92
Inadequate self-efficacy and knowledge to implement HIV/AIDS and RHE to D/deaf youth 93
Inadequate parental and community involvement in school-related matters 94
Concerns related to logistical issues 94
Summary of important qualitative findings 95
Conclusion 95
CHAPTER FIVE 96
DISCUSSION 96
Introduction 96
Demographic and Contextual Findings 96
Existence of a school HIV/AIDS policy 96
Implementation of HIV/AIDS and RH education 96
Examination of learners on the HIV/AIDS and RH aspect of LO curriculum 98
Sources of HIV/AIDS and RHE curriculum 98
HIV/AIDS and RH education training 99
Proportion of HIV/AIDS and RHE in the LO curriculum 100
Hearing status and SASL proficiency 100
Theory of Planned Behaviour Constructs 102
Outcome beliefs 102
Subjective Norms 102
Self-efficacy 103
School climate 105
Summary of Discussion 106
Recommendations 107
For future research 107
For future interventions 107
Limitations of the Study 108
References 110

Declaration

I declare that this dissertation is my own work. It is being submitted for the partial fulfillment of the degree Master of Social Science (Clinical Psychology) at the University of KwaZulu-Natal. It has not been submitted before for any other degree or examination at any other University.

…… …….

Elizabeth Cambanis Date

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List of Tables

Page

Table 1: Reliability of the 'outcome beliefs' scale 47
Table 2: Reliability of the 'subjective norms' scale 48
Table 3: Reliability of the 'self-efficacy' scale 50
Table 4: Reliability of the 'school climate' scale 54
Table 5: Demographic profile of participating schools 60
Table 6: Contextual profile of teachers 61
Table 7: Contextual profile of HIV/AIDS and RHE curriculum 61, 62
Table 8: Descriptive statistics for 'perceived importance' subscale 63
Table 9: Frequencies on items for 'perceived importance' subscale 63, 64
Table 10: Descriptive statistics for 'perceived feasibility' subscale 65
Table 11: Frequencies on items for 'perceived feasibility' subscale 65, 66
Table 12: Descriptive statistics for 'normative beliefs' subscale 66
Table 13: Frequencies on items for 'normative beliefs' subscale 67
Table 14: Descriptive statistics for 'motivation to comply' subscale 68
Table 15: Frequencies on items for 'motivation to comply' subscale 68
Table 16: Descriptive statistics for 'self-efficacy' scale 69
Table 17: Descriptive statistics for 'teaching strategies' subscale 70
Table 18: Frequencies on items for 'teaching strategies' subscale 70
Table 19: Descriptive statistics for 'adaptation of activities' subscale 71
Table 20: Frequencies on items for 'adaptation of activities' subscale 71
Table 21: Descriptive statistics for 'classroom management' subscale 72
Table 22: Frequencies on items for 'classroom management' subscale 73
Table 23: Descriptive statistics for 'talking about sexuality' subscale 73
Table 24: Frequencies on items for 'talking about sexuality' subscale 74
Table 25: Descriptive statistics for 'school climate' scale 74
Table 26: Descriptive statistics for 'achievement motivation' subscale 75
Table 27: Frequencies on items for 'achievement motivation' subscale 76
Table 28: Descriptive statistics for 'collaborative decision-making' subscale 76
Table 29: Frequencies on items for 'collaborative decision-making' subscale 77
Table 30: Descriptive statistics for 'equity and fairness' subscale 78
Table 31: Frequencies on items for 'equity and fairness' subscale 78
Table 32: Descriptive statistics for 'leadership' subscale 79
Table 33: Frequencies on items for 'leadership' subscale 79
Table 34: Descriptive statistics for 'order and discipline' subscale 80
Table 35: Frequencies on items for 'order and discipline' subscale 80, 81
Table 36: Descriptive statistics for 'parental involvement' subscale 81
Table 37: Frequencies on items for 'parental involvement' subscale 82
Table 38: Descriptive statistics for 'school buildings' subscale 82
Table 39: Frequencies on items for 'school buildings' subscale 83
Table 40: Descriptive statistics for 'school-community relations' subscale 84
Table 41: Frequencies on items for 'school-community relations' subscale 84
Table 42: Descriptives for 'staff dedication to student learning' subscale 85
Table 43: Frequencies for 'staff dedication to student learning' subscale 85
Table 44: Descriptive statistics for 'staff expectations' subscale 86
Table 45: Frequencies on items for 'staff expectations' subscale 86
Table 46: Summary of significant one-way analysis of variance tests 90
Table 47: Summary of significant *t*-tests 90

Acronyms

ASL	American Sign Language
BCA	Basic Content Analysis
CABSA	Christian AIDS Bureau of Southern Africa
DeafSA	Deaf Federation of South Africa
DHS	Demographic Health Survey
DOE	Department of Education
DTV	Deaf TV
GALA	Gay and Lesbian Archives
GDE	Gauteng Department of Education
HOH	Hard-of-Hearing
HPCSA	Health Professions Council of South Africa
KAPB	Knowledge, Attitudes, Practices and Beliefs
LO	Life Orientation
NAD	National Association for the Deaf
NCS	National Curriculum Statement
NGO	Non Governmental Organisation
OAFCCD	Ontario Association for Families of Children with Communication Disorders
RH	Reproductive Health
RHE	Reproductive Health Education
SA	South Africa
SABC	South African Broadcasting Corporation
SASL	South African Sign Language
SEE	Signing Exact English
SLED	Sign Language Education and Development Programme
SPE	Signed Pidgin English
STD	Sexually Transmitted Disease
TPB	Theory of Planned Behaviour
WHO	World Health Organisation
WITS	University of the Witwatersrand

CHAPTER ONE

INTRODUCTION

General Introduction

The HIV/AIDS pandemic is having a devastating effect on the South African population, with 5.7 million living with HIV at the end of 2007 (UNAIDS, 2009). The impact of the pandemic on youth is particularly severe as the HIV rate is highest among young people between 15 and 24 years, and most new infections occur in adolescents or young adults (UNAIDS, 2009). This has sparked a plethora of studies on HIV/AIDS and South African youth, particularly among youth in impoverished and previously disadvantaged communities. However, South African research has paid little attention to adolescents in other marginalised groups, such as the young D/deaf population. There are currently no indicators of HIV prevalence amongst D/deaf youth. A South African national prevalence, incidence, behaviour and communication survey (2008) cites HIV prevalence amongst youth to be 8.7% with female and male rates at 13.9% and 3.8% respectively (Shisana, Rehle, Simbayi, Zuma et al., 2009); it is likely that prevalence amongst D/deaf youth is as high, if not higher. Reasons for high prevalence rates among D/deaf youth from both international and local literature include: higher rates of alcohol and drug abuse (The Alcohol and Drug Council of Middle Tennessee, 2009; Peinkofer, 1994); higher rates of sexual abuse and coercion (Duvall, 2005); low HIV/AIDS knowledge (Bisol, Sperb, Brewer, Kato et al., 2008; Cambanis & Meyer-Weitz, 2007; Odwesso, Henderson, Madhivanan, Van Rompay et al., 2004; Sawyer, Desmond & Joseph, 1996; Swartz, 1993); marginalisation of the D/deaf population with regards to HIV/AIDS campaigns (Bat-Chava, Martin & Koscow, 2005; Groce, 2003; Sawyer et al., 1996; Skuy, Laughton, Fridjhon & Dear,1995; Stevens, 1998; Tamaskar, Malia, Stern, Gorenflo et al., 2000; Trafton, 2006); inadequate parental communication (Job, 2004; Skuy et al., 1995); low understandings of risk (Cambanis & Meyer-Weitz, 2007; Luckner & Gonzales, 1993; Trafton, 2006; Woodroffe, Gorenflo, Meador & Zazove, 1998); and low self-efficacy to practice HIV-preventative behaviours (Bat-Chava et al., 2005; Cambanis & Meyer-Weitz, 2007; Peinkofer, 1994; Trafton, 2006).

Within the HIV/AIDS pandemic, schools have an important role to play. Indeed, schools reach a substantial number of young people at a particularly formative time in their

development, and thus have the potential to positively influence the reproductive health behaviour of youth (Siegel, DiClemente, Durbin, Krasnovsky et al., 1995; Tones & Green, 2004). Teachers play a critical role in the success of school-based HIV/AIDS and reproductive health education; however research in (hearing) schools both internationally and nationally has shown that teachers face multiple barriers in their effective dissemination of sexuality and HIV/AIDS education (Cherian, 2004; Gallant & Maticka-Tyndale, 2003; Mathews, Boon, Flisher & Schaalma, 2006; Peltzer, 2000; Peltzer & Promtussananon, 2003). These barriers include: lack of training; low knowledge levels; discomfort with RHE material; cultural and religious taboos surrounding RHE material; lack of community support; lack of materials and resources; low levels of self-efficacy; and curriculum overload. International studies conducted in schools for the D/deaf show that teachers of D/deaf youth have additional barriers to their effective dissemination of RHE, including: their inability to communicate in natural sign language; an inadequate understanding of D/deaf culture; and RHE materials that are unsuitable for D/deaf youth (Gannon, 1998; Getch, Branca, Fitz-Gerald & Fitz-Gerald, 2001). There is a paucity of South African literature on school-based HIV/AIDS and RH education for D/deaf youth. The Sign Language Education and Development (SLED) organisation has developed an HIV/AIDS and sexuality-based life-skills programme for D/deaf learners and has implemented workshops to teach educators how to implement this programme (Donnelly, n.d.; Maclons, n.d.); however, as yet there is no available research on whether teachers at schools for the D/deaf are in fact implementing the SLED programme- or indeed any other HIV/AIDS and RH curriculum- or on the factors influencing teachers' decisions to implement HIV/AIDS and RH education.

This aim of this study is thus to investigate the form of HIV/AIDS and reproductive health education in South African secondary schools for the D/deaf, together with the factors associated with teacher implementation thereof.

Definitions

Definitions of regularly used terms will be defined for the purpose of this study.

Youth

As per the United Nations (2003) definition, 'young people' or 'youth' is defined as persons between the ages of 15-24.

Deafness

To define deafness is not as straightforward as may be assumed. Much confusion exists with regards to terminology as there are in fact *numerous* terms relating to the concept of deafness (including, Deaf/deaf/hearing disabled/ hearing-impaired/ hard-of-hearing/ communication disabled). Moreover, the definitions of these terms and the way they are conceptualised may also differ from study to study. Generally, the medical model defines deafness based on the degree of hearing loss (ranging from mild to profound) and it is from this model that the terms 'communication disabled,' 'hearing disabled' and 'hearing-impaired' originated. Recently, the term 'hearing-impaired' was deemed to be the preferred terminology, largely because it was viewed as being politically correct; however, it is now regarded as a negative term that focuses on what individuals cannot do, and that establishes 'hearing' as the standard and anything different as substandard (NAD, 2006). Being a by-product of the medical model, the term hearing-impaired focuses on the audiological condition of not hearing and carries the definition of 'a full or partial decrease in the ability to detect or understand sounds' (OAFCCD, 2009). The term 'hard-of-hearing' has also previously been based on degree of hearing loss and has been used to describe people who possess a less-than-severe hearing loss (Punch, Creed & Hyde, 2006).

Recently, a different paradigm that views the deaf population as an ethnic/cultural/ linguistic minority has become dominant (Lane, 2005; Reagan, 2002; Skelton & Valentine, 2003). Within this cultural model of deafness, the definition of existing terminology has changed and new terms have been introduced such that terminology is now based not on degree of audiological difficulty, but on deaf individuals' primary mode of communication. Indeed, the word 'Deaf' as opposed to 'deaf' now signifies those individuals who are part of the Deaf *culture* (also known as the DEAF-WORLD) by virtue of having been deaf from birth or early childhood, and for whom sign language is their primary language. Individuals who are 'deaf' are those who lost their hearing much later in life and who do not use sign language as their primary language or at all (Reagan, 2006). In other words, the lowercase deaf is used when referring to the audiological condition of not hearing while the uppercase Deaf is used when referring to a particular group of Deaf people who share a language and a culture; the Deaf can thus be distinguished from those who have lost their hearing through illness, trauma or age because although these people share the condition of not hearing they do not have access to the knowledge, beliefs and practices that make up the culture of the Deaf community

(NAD, 2006). The term 'hard-of-hearing' (HOH) is often synonymous with the term 'deaf' as although HOH may be used to denote a person with mild-to-moderate hearing loss, it may also be used to denote a deaf person who does not have/want any cultural affiliation with the Deaf community (*ibid*). Hard-of-hearing/deaf individuals may participate in the social, cultural political and legal life of the community along with the culturally-Deaf or they may live their lives within the parameters of the 'hearing world'. Thus, in reality the dichotomy of 'Deaf' versus 'deaf' is in fact very complex and actually occurs on a continuum (Reagan, 2006).

This study recognises that the terminology used in D/deaf research has changed over time and that the terminology used in the past may not carry the same meaning today. It also recognises that research conducted with the D/deaf community does not always operationalise terms used so as to allow for a generalised understanding. So, in order to allow for enhanced understanding and easier reading, this study will use the term 'D/deaf' when referring to deaf/Deaf individuals in the literature review and discussion chapters as it is believed that such a term sufficiently encapsulates the diversity of the population. Because of the continuing change in terminology and definitions, it is believed that this study's replacement of terms such as hard-of-hearing and hearing-impaired, as they are found in the literature, will not diminish research studies' findings or arguments in any way but will instead reduce any confusion that may result from the use of too many different terms. As the questionnaire investigated the hearing statuses of teachers using the options 'Deaf', 'hard-of hearing' and 'hearing', the results section will thus use these terms as opposed to D/deaf. However, the remainder of the study will use the term D/deaf.

Sign Languages

It is necessary to discuss the nature and variety of sign languages in existence as terms such as 'signing', 'signed language' and 'sign language' are vague and ambiguous in nature and lead to a great deal of confusion about the different kinds of gestural/visual communication systems used by D/deaf people. To provide some clarity, one can divide the D/deaf population into three groups where each group uses a specific type of sign language depending on whether they are Deaf or deaf; the type of sign language used will also depend on the social and cultural context and the particular purpose of the communication. In elucidating the different types of sign language, an example will be used to better clarify the differences between them.

1) 'Oralists' are deaf people who are able to speak and who may or may not utilise a sign language. Within this group are Pure Oralists that will not use any type of sign language, Conservative Oralists who will use sign language only when necessary and Liberal Oralists who will combine their voice and their ability to sign (Duvall, 2005b). If Oralists do sign, they will use Signing Exact English (SEE) (*ibid*), a type of manual sign code. Manual sign codes are artificially constructed systems that attempt to represent the spoken language in a signed mode. Manual sign codes are widely used in educational settings, especially with young children, as they are believed to provide more meaningful access to the spoken language than oral methods might achieve (Regan, 2002). However, the Deaf community regard manual sign codes and SEE as a denial of their culture and of the linguistic status of natural sign languages; these codes are also frustrating and confusing for Deaf individuals to use. (DEAFSA, 2006).
   [In SEE, the sentence 'I am going to the store' would be signed exactly as hearing people would say it.]

2) 'Signers' are D/deaf individuals who may be lip readers and who use predominantly contact sign languages such as Signed Pidgin English (SPE). SPE consists of dropping words that are not needed such as 'and', 'is', 'a', 'to', with the English format still maintained (Duvall, 2005b). Contact sign languages thus combine elements from both a natural sign language and elements (in a manual/gestural form) from a spoken language (Reagan, 2002). SPE is the most common form of sign language used in communicative interactions between hearing and D/deaf people; the vast variety of hearing people who sign utilise some variety of contact sign language as do D/deaf people in most of their contacts with the hearing world (*ibid*). Contact sign languages constitute a fairly extensive continuum of actual signing practices and elements, ranging from strong ties to the natural sign language all the way to strong ties to the spoken language. The advantage of contact sign language is its ease of acquisition, as it is far easier for a hearing person to become reasonably competent in contact sign language than in natural sign language (*ibid*).
   [In SPE the sentence 'I am going to the store' would be signed: 'I go store' (Duvall, 2005b)].

3) 'Low verbal' or 'non verbal' individuals are considered culturally Deaf and will utilise their natural sign language (Duvall, 2005b). Natural sign languages are those used in Deaf communities in communicative interactions between and among Deaf people themselves and would include American Sign Language, British Sign Language, South African Sign Language and so forth (Reagan, 2002). These languages have emerged and evolved naturally and are immensely complicated linguistically (*ibid*).

[In natural sign language, the sentence 'I am going to the store' would be signed 'store, me, go' as the subject or object is placed first, followed by sequence of events; if a time element is present then that would be placed first (Duvall, 2005b)].

There has been an explosion of linguistic, psycholinguistic and sociolinguistic research dealing with American Sign Language (ASL) and other natural sign languages such that much more is known about the nature and workings of natural sign languages than was known previously. In summarising the research base, Hoffmeister (1990) explains:

> ASL is structured very differently from English as it is based on visual/manual properties in contrast to the auditory/spoken properties of English. ASL is able to convey the same meanings, information and complexities as English…ASL is able to codify agents, actions, objects, locations, subjects, verbs, aspects, tense and modality, just as English does. ASL is therefore capable of stating all the information expressed in English and of doing this within the same conceptual frame (p. 81)

This growing body of research, together with the activism work done by D/deaf representative groups has led to a call for natural sign languages to be recognised as legitimate linguistic systems and for them to be accorded the same status as other languages. International documents, including the Salamanca Statement (1994) and the World Federation of the Deaf (1995), together with local documents such as the South African Constitution (1996), the Integrated National Disability Strategy (1997) and the Education White Paper (2001) indicate clearly that natural sign languages (such as SASL) are to be considered the first language of choice for the D/deaf population and that they are to be the official language of teaching and learning in D/deaf schools (DeafSA, 2006). However, in spite of copious policies and legislations, the status of natural sign languages remain, for the most part, unchanged (*ibid*).

Schools for the D/deaf

In this study, the term 'secondary school for the D/deaf' is used to denote a secondary school which teaches D/deaf learners, notwithstanding the terminology used by the schools themselves (for example, 'School for Disabled Children', 'School for Deaf Children', Sentrum vir Gehoorgestremdes', 'School for the Hearing-Impaired, 'Skool vir the Dowe').

Outline

In this introductory chapter, the context of this study was introduced together with the motivation and aim of the study. Definitions of important terms were also elucidated.

In the second chapter, the relevant literature regarding HIV/AIDS and RH education and D/deaf youth is explored and discussed and emphasis is placed on the factors increasing this population's HIV/AIDS risk. Existing policy regarding school-based RHE and the role of teachers in RHE (internationally and locally) is also highlighted and available literature is discussed. The theoretical framework used for the study is also set out.

The third chapter outlines the research methodology of the study, both the quantitative and qualitative methods used. As such, the chapter details the specific aims, hypotheses, research questions, sampling methods, data collection and data analysis used in the study. The chapter also details the specific methods of qualitative analysis used. Ethical considerations are also discussed.

In the fourth chapter, the results of the statistical analyses are presented. The chapter includes demographic and descriptive statistics, as well as chi-square analyses and t-tests. The results of the qualitative analysis are also presented, with main themes elucidated. Quotes pertaining to each theme are also explicated.

The fifth and final chapter discusses the quantitative and qualitative findings in relation to the available literature. The results are compared with previous studies where possible. In this chapter, the limitations of the study are also examined. Concluding remarks are noted, ending with implications for interventions and recommendations for future research.

CHAPTER TWO

LITERATURE REVIEW

Disability and D/deafness Globally

It is estimated that between 10% and 12% of the worldwide population lives with a disability (Mont, 2007). No statistics are available regarding the number of D/deaf individuals worldwide, but 2005 estimates by the World Health Organisation estimates that 278 million people have moderate to profound hearing loss in both ears (WHO, 2006). Estimated prevalence rates of both disability and D/deafness are unlikely to be accurate representations of true global prevalence as definitions of terminology differ from study to study, along with the methodologies used. In recent years, a paradigm shift in the United States, Europe, Australia and South Africa has resulted in a move from the medical model of D/deafness to a socio-cultural model. This cultural model of D/deafness regards the D/deaf not as disabled but rather as an ethnic/cultural/linguistic minority and thus rejects medical attempts (including cochlear implants, hearing aids and speech therapy) to hold the D/deaf population to the norms of the hearing world (Aarons & Akach, 2002; Lane, 2005; Reagan, 2006; Skelton & Valentine, 2003). Bat-Chava (2005) explains the D/deaf population to be a minority community in that they share a language as well as organisational networks, values and norms. According to Priestly (2006) this social model of disability is far more empowering, as instead of viewing deafness as a deficit to be treated or eliminated by the medical world, it recognises that any disability accompanying an impairment does not in fact stem from the impairment itself, but from a 'disabling society' where discrimination and prejudice make it extremely difficult for disabled individuals to meet their needs. Research conducted in South Africa to test a disability schedule for the 2011 census (Schneider & Couper, 2007) showed that the majority of D/deaf individuals do not see themselves as disabled and do not identify with the disability movement. Instead, D/deaf individuals report that it is society that disables them by limiting their access to important resources, such as interpreters. In the afore-mentioned study, D/deaf participants would only define themselves as disabled in situations where such a label would allow them to obtain greater access to resources-such as government grants allocated for the disabled.

This new approach to understanding disability has also led to new ways of classifying disability. For example, the Communication Disability Model (developed by Hartley & Wirz, 2002) is intended to be used as an alternative to the impairment-focused framework based on the medical model. Instead of reducing communication disability to a bio-medical classification, it argues that contextual factors (such as social and environmental constraints and their impact on the individual's impairment) are an inseparable part of a communication disability, and that communication disability results from a breakdown between an individual and his/her environment. Moreover, the World Health Organisation has developed the International Classification of Functioning, Disability and Health (ICF), which acknowledges the importance of both internal personal factors (dimensions of body function and structure) and external environmental factors (physical, social, attitudinal factors) in understanding disability (Schneider & Hartley, 2006). There is also a greater recognition of the relationship between disability and poverty, and the need to thus integrate social and economic development in order to improve the quality of life amongst disabled populations (Turmusani, 2006). According to Mont (2004), current disability policy has two main goals: income security for the disabled and the complete integration of disabled people into social and economic life, thus allowing disabled people to participate in the economy and in society.

D/deaf Youth and HIV/AIDS

Available statistics on the prevalence of disability in South Africa are neither comprehensive nor accurate, with estimates varying from about 5% or 6% (Community Agency for Social Enquiry, 1997; Statistics South Africa, 2001b) to 12% (Disabled People South Africa, 1996). Complications also exist in estimating the prevalence of D/deafness in SA due to the fact that different studies use different terminology and different definitions. Indeed, reported estimates on the number of D/deaf South Africans are unclear, ranging from 451 196 (Statistics SA, 2001) to one and a half million (DEAFSA, 2007) to four million (SA Yearbook, 1998). Inaccuracies are also reportedly a result of: the stigma attached to identifying oneself as disabled; the fact that many D/deaf people do not identify themselves as disabled; and the fact that large numbers of D/deaf individuals have never taken part in census surveys (DeafSA, 2006; DeafSA, 2007). In the midst of this confusion regarding prevalence, it is posited that 28% of individuals living with a hearing disability are youth below the age of 19 (Statistics South Africa, 2001a). The HIV/AIDS pandemic is having a devastating effect on the South African population, as South Africa is home to the world's

largest population of people living with HIV (5.7 million) (UNAIDS, 2009). The impact of the epidemic on youth is particularly severe as the HIV incidence rate is highest among young people between 15 and 24 years, and most new infections occur in adolescents or young adults (UNAIDS, 2009). The prevalence of HIV/AIDS among the D/deaf population, and indeed among D/deaf youth, is not known. It is commonly assumed that individuals with physical, sensory or intellectual disabilities are not at high risk for HIV infection as they are *incorrectly* believed to be sexually inactive, unlikely to use drugs or alcohol and at less risk of violence or rape than their non-disabled peers (Blumberg & Dickey, 2003). Job (2004) and Gannon (1998) also speak of the erroneous asexual stereotype of the D/deaf. The danger in these misconceptions is shown by the small US study conducted by Van Biema (2004), which found that the HIV rate among D/deaf participants was in fact double that of the hearing participants. Moreover, Oswole and Olapedo's (2000) Nigerian study on D/deaf youth found that more than 25% of D/deaf participants were sexually active, with sexual debut ranging from 10 to 22 years old; condom use during sexual intercourse was also found to be low. There are currently no indicators of HIV prevalence amongst D/deaf youth, but in South Africa a national HIV prevalence, incidence, behaviour and communication survey (2008) cites HIV prevalence amongst youth overall to be 8.6% (Shisana et al., 2009);it is likely that prevalence amongst D/deaf youth is as high, if not higher.

Alcohol and drug use

No South African research is available on the use of alcohol and drugs among D/deaf youth and only limited international studies have been conducted. According to UNICEF (1999) the disability status among adolescents compounds many of the risks related to HIV transmission. For example, as disabled youth are often excluded from social activities they are less adept at setting boundaries and experience a lower sense of self-worth; this often compromises their ability to refuse when pressured to have sex or to try drugs. The Alcohol and Drug Council of Middle Tennessee (2009) reports that 1 out of 7 D/deaf individuals may become dependent on alcohol or drugs, in comparison to 1 out of 10 hearing people. A review conducted by Peinkofer (1994) cites substance abuse among the D/deaf population to be nearly 40% higher than among hearing populations.

This is extremely worrying as substance abuse is strongly correlated with high-risk sexual behaviour and thus with HIV risk (Le Beau, Fox, Becker & Mufune, 2001; Mufune, 2003; Ostrow, Van Raden, Fox, Kingsley et al., 1990). Indeed, a study conducted among Namibian

youth found that drinking alcohol increased the probability of youth having taken one or more sexual risks by 35% (UNICEF, 2006). Alcohol and other substances have direct causal effects on adolescents' sexual behaviour and condom use by lowering their inhibitions, impairing their judgment about possible risks and making them less sensitive to the concerns of partners (Stueve & O'Donnell, 2005). The use of intravenous drugs is also of course a principal route of HIV transmission (Van Dyk, 2005), although the main route of transmission in South Africa is through sexual means (UNAIDS, 2008).

Prevalence of sexual abuse among D/deaf youth

There is little recent international research on the prevalence of sexual abuse among D/deaf youth. A 1986 study by Brookhouser, Sullivan, Scanlan and Garbarino reported high rates of sexual abuse among D/deaf children. Their findings were supported by a 1987 review conducted by Sullivan, Vernon and Scanlan which suggested that 54% of D/deaf boys and 50% of D/deaf girls are abused as children and that the rate of sexual abuse is double for girls and five times as high for boys who are D/deaf. A more recent study conducted by Kvam (2003) concluded that D/deaf children have a 2-3 times greater risk of sexual abuse than hearing children; indeed, D/deaf females aged 18-65 who lost their hearing before the age of 9 reported sexual abuse (with contact) before the age of 18 years more than twice as often as hearing females, and D/deaf males more than three times as often as hearing males. Due to their communication difficulties D/deaf youth are often seen as easy targets (Duvall, 2005); a 'depersonalisation' may also be present as school employees regard D/deaf children to be less humane (*ibid*). Duvall's (2005) review identified abusers as: 26% family members, both extended and immediate; 42% friends and family friends; 32% acquaintances and transport drivers. High incidences of rape and sexual assault exacerbate the HIV/AIDS epidemic as the disparate power balances that characterise such an interaction do not allow for the negotiation of safer sex. Also, situations where boys experience forced sex at the hands of male perpetrators are particularly dangerous as the anal-rectal area is easily torn during intercourse (Van Dyk, 2005) allowing for easier HIV transmission. A number of studies have also shown a link between a history of sexual abuse in childhood and subsequent HIV-related risk behaviour (Gore-Felton & Koopman, 2002; Kalichman, Gore-Felton, Benotsch, Cage et al.., 2004).

There is no available data on the prevalence of sexual abuse among South African D/deaf youth. However, studies show extremely high rates of sexual assault against all South African

youth; indeed, in 2000 alone, 21 427 cases of sexual assault of youth below 17 years of age were reported to the police (Shilumani, 2004). It is likely that the rates of sexual abuse of D/deaf youth are at as high or higher.

Homosexuality among D/deaf youth

Very little information is known about prevalence of homosexuality among the D/deaf population. A study conducted by Cambridge (1997) reported that homosexual and bisexual identities among disabled populations appear at rates comparable to those in the general population. According to Determan, Kordus and DeCarlo (1999) D/deaf men who have sex with men face an additional risk of HIV infection because they face discrimination and stigma not only as a result of their hearing status but also their sexual orientation. This increased social vulnerability may make disclosure extremely difficult, resulting in anonymous sexual encounters. D/deaf men who have sex with men thus have an even higher HIV risk, as research shows that sex with anonymous partners is more likely to be high-risk sex (Aynalem, Smith, Bernis, Taylor et al., 2006). The fact that many D/deaf men have hearing partners means it can be extremely difficult for them to communicate their health-related needs and to negotiate safer sex (Peinkofer, 1994).

HIV/AIDS knowledge and awareness

Several studies have indicated that D/deaf youth have less sexual knowledge than their hearing peers (Bisol et al., 2008; Odwesso et al., 2004; Sawyer et al., 1996; Swartz, 1993). International KAPB (knowledge, attitudes, practices and beliefs) studies conducted among D/deaf youth shows that they also have significant gaps when it comes to HIV/AIDS knowledge. Tamaskar et al. (2000) found that D/deaf American college students scored significantly lower than their hearing peers on the HIV/AIDS Knowledge Index. Woodroffe et al. (1998) also reported numerous misconceptions that the D/deaf have when it comes to transmission and prevention; for example, many participants reported that HIV can be transmitted by masturbation and that using public toilets, kissing infected people on the cheek, and visiting HIV/AIDS patients can increase one's chances of contracting the virus. A pilot survey of HIV/AIDS knowledge among a D/deaf population in Swaziland (Groce, Yousafazi, Dlamini, Zalud et al., 2006) also showed how this population was more likely to believe that HIV could be transmitted through the air and through hugging, and that HIV could in fact be prevented by eating healthy foods and not sharing utensils with an HIV

positive person. Furthermore, Woodroffe et al. (1998) showed that D/deaf persons were less likely to indicate that having numerous sexual partners is high risk sexual behaviour and were more likely to believe that they did not need to change their sexual behaviour due to the HIV/AIDS pandemic. Such misinformation and lack of knowledge is even more problematic given that the D/deaf are more likely to learn new information from each other than from formal sources (Kennedy & Bulcholz, 1995). Indeed, Wodroffe et al. (1998) reports that the D/deaf are in fact seven times more likely to receive information about HIV/AIDS from their friends than their hearing counterparts are.

There is a paucity of research on HIV/AIDS and the D/deaf in South Africa. A study conducted by Skuy et al. (1995) compared the level of HIV/AIDS knowledge between hearing participants and D/deaf participants. Their study echoed the findings of research done outside South Africa, as they found that the hearing group had a higher level of HIV/AIDS knowledge than the D/deaf group and that the D/deaf had numerous misconceptions surrounding HIV/AIDS, particularly regarding modes of transmission. Like studies outside of South Africa, Skuy et al.'s (1995) study also highlighted the fact that information about sexual matters is gained primarily from the D/deaf adolescents' peer group. The findings of a KAPB study conducted among three schools for the D/deaf in the Johannesburg/ Tshwane regions (Cambanis & Meyer-Weitz, 2007) similarly found D/deaf participants to have very low knowledge about what HIV/AIDS actually is, how it is transmitted, and how it can be prevented. For example, a large majority (81.8%) believed that there is a cure for HIV/AIDS; also, 58% believed that HIV can be spread through coughing/sneezing and 43% did not know that HIV can be prevented by the use of condoms during sexual intercourse.

The low levels of HIV/AIDS knowledge found amongst D/deaf youth is in direct contrast to the knowledge levels found among hearing-able South African youth. For example, a national survey of (hearing) 15 to 24 year olds conducted in 2003 reported that the participants had a high general knowledge about HIV/AIDS (Pettifor, Rees, Steffeson, Hlongwa-Madikizela et al., 2004). Similarly, research conducted by Simbayi, Kalichman, Jooste, Cherry et al. (2005) with (hearing) youth in a black township located in Cape Town also found that knowledge about HIV/AIDS transmission was generally high. High knowledge levels among hearing youth have also been reported in studies conducted by The Kaiser Family Foundation/SABC (2007) and the Reproductive Health Research Unit of WITS (2003).

Sources of HIV/AIDS knowledge

Historically

Globally, D/deaf populations have had very little access to HIV/AIDS awareness campaigns and prevention interventions as these campaigns have taken a number of forms that fail to disseminate much-needed information to the D/deaf (Bat-Chava et al., 2005; Groce, 2003; Sawyer et al., 1996; Skuy et al., 1995; Stevens, 1998; Tamaskar et al., 2000; Trafton, 2006). In South Africa, little attention has been paid to D/deaf youth and HIV campaigns have failed to adequately target or include them. Indeed, radio campaigns such as 'Vuleka' have been a popular form of HIV/AIDS awareness campaigns in SA; however radio campaigns cannot be accessed by D/deaf youth, as pointed out by Bat-Chava et al. (2005), Groce, (2003), Joseph et al. (1995), and Skuy et al. (1995). Television has also been an ineffective medium for delivering HIV/AIDS information to the D/deaf as only 30% of English can be lip read, or even less if the speaker is facing away (Skuy et al., 1995), and no South African campaigns, including LoveLife, Soul City, Tsha Tsha, Vukani or Komanani, have used sign language interpreters. Other media sources such as books, pamphlets and posters have also been extremely inadequate for the D/deaf populations as sign language is not simply a visual form of English but actually has a grammar and syntax quite unlike English, or indeed any other spoken language. This means that D/deaf youth -particularly those born D/deaf or who lost their hearing before the age of three- will have an extremely low reading proficiency (Bat-Chava et al., 2005; Tamaskar et al., 2000; Trafton, 2006); it is for this reason that close-captioned television is also an ineffective means to disseminate information to the D/deaf. Moreover, the HIV/AIDS campaigns in South Africa have seldom been clear and have used a number of idioms, expressions and innuendos surrounding sex and sexuality- for example found in the LoveLife campaign directed specifically towards youth (Thomas, 2000). Without access to the innuendos surrounding sexuality or an understanding of abstract terms, the meaning of media materials is often lost on D/deaf youth (Job, 2004).

Currently

South Africa is only now beginning to take notice of the HIV-related needs of the D/deaf population. For example, in 2008 Deaf TV (DTV), in recognising that D/deaf secondary school students lack HIV/AIDS information, decided to use HIV/AIDS as the theme for 'Zwakala', their national school poetry and drama competition. In preparation for the competition, each secondary school was sent a DVD with basic HIV/AIDS information

communicated in sign language and the students had to design plays based on the information. However, there is no available research as to the impact the 'Zwakala' competition had on the pupils as it was an art competition as opposed to a theory-based intervention. Also, the HIV/AIDS theme was only a year-long theme which was not continued into 2009 (L. van Niekerk, personal communication, 30 January, 2009). In November 2009, the first sign language (SASL) HIV/AIDS campaign, created by Brothers for Life, was broadcast on South African television sets. The campaign is said to be aimed at reaching D/deaf people with vital information about how to protect themselves from HIV; the silent one-minute advertisement features a member of DeafSA who uses sign language to communicate the dangers of having unprotected sex with multiple and overlapping partners (CABSA, 2009). As yet there is no available research evaluating this campaign.

Parental communication

Job (2004) has shown that there is a high degree of reluctance on the part of parents to provide their D/deaf children or adolescents with sex education. This disinclination stems from a number of factors, including the fact that discussions around sex, embarrassing under typical circumstances are made even more uncomfortable due to the graphic nature of the sexual signs needed to communicate relevant information to their D/deaf children. According to Skuy et al. (1995) the inability of parents to communicate effectively to their D/deaf children about sex and HIV/AIDS also has a lot to do with the fact that approximately 90% of D/deaf children are born to hearing parents, of which only 20% can use sign language, resulting in a massive communication barrier between parent and child. Parents of D/deaf children, like parents of hearing children (Delius & Glaser, 2001) also believe that talking about sex with their children will lead to sexual experimentation (Job, 2004). Moreover, parents of D/deaf children are also often of the belief that the responsibility of sex education lies with the school (Job, 2004). The minimal communication between parents and their D/deaf children regarding reproductive health is worrisome as international research shows that parent-child communication about sexual topics is implicated (together with low family conflict and parental supervision) in delayed sexual debut, fewer pregnancies, fewer sexual partners, more responsible sexual behaviour, greater efforts to avoid AIDS, and increased contraceptive use and knowledge about HIV/AIDS and birth control (McKay, Chasse, Paikoff, McKinney et al., 2004).

Attitudes and beliefs regarding HIV/AIDS

Numerous international studies have shown that D/deaf youth mistakenly believe that they are not at risk for HIV/AIDS; thus the value of safer sexual practices may not be recognised and the intention to practice safer sex may resultantly be diminished. In Trafton's study (2006) D/deaf participants were shown to regard HIV/AIDS as a 'hearing-person's disease'. Luckner and Gonzales' (1993) study of D/deaf teenagers found that approximately 46% of D/deaf participants believed that all gay people have AIDS and that only gay people can get AIDS, meaning that heterosexual D/deaf adolescents may have dangerous misconceptions about their so-called lack of vulnerability to the virus. Woodroffe et al. (1998) also showed that 62% of D/deaf respondents believed that married people are unable to contract HIV/AIDS, demonstrating again a flawed understanding of vulnerability. Skuy et al.'s (1995) South African study also showed numerous misperceptions that D/deaf youth have about who is in fact susceptible to contract HIV/AIDS. Stereotypical views regarding homosexuals as the only high-risk group for contacting HIV/AIDS were also expressed here; furthermore, the D/deaf participants did not see themselves as an at-risk group at all. A study by Cambanis and Meyer-Weitz (2007) also found that D/deaf adolescents have little understanding about their own HIV risk, as the majority indicated that they did not know if people like them get HIV/AIDS or if people their age get HIV/AIDS; furthermore, the majority did not know whether or not they were worried about contracting HIV/AIDS.

Self-efficacy in relation to HIV/AIDS

HIV/AIDS knowledge is not sufficient to ensure the adoption of safer sexual behaviour (Eaton & Flisher, 2000). The adoption of health-enhancing behaviour is also dependent on the confidence that individuals have in carrying out the intended behaviour and on the skills a person possesses (and those skills they believe themselves to possess) to overcome obstacles in performing the intended behaviour (Ajzen & Madden, 1986). When it comes to taking control of their own health, the D/deaf community have been shown to have extremely low levels of self-efficacy, which might impair their ability to practice HIV-preventative behaviours, or to take proper care of themselves if HIV positive. Various studies have reported on the communication problems that D/deaf people experience with health practitioners and their feeling of being stigmatised by these practitioners to the extent that they do not feel confident in discussing topics such as contraception, STDs and sexuality with health care providers. This ultimately limits their access to health information and medical

care, including HIV voluntary counselling and testing services (Bat-Chava et al., 2005; Groce, 2003; Tamaskar et al.., 2000; Trafton, 2006). In such settings, communication problems often result in D/deaf individuals having to communicate through their hearing friends or relatives. This means that their privacy and confidentiality is at risk and that they will possibly be less truthful about their engagement in any unsafe sexual behaviour, which will have serious consequences for their health (Bat-Chava et al., 2005; Trafton, 2006). Indeed, in a study cited by Bat-Chava et al. (2005) D/deaf students reported that they would not get an HIV test due to lack of confidentiality and privacy.

Communication problems can also diminish a D/deaf individual's self-efficacy in the context of sexual intercourse itself. For example, in a situation where a D/deaf individual is engaged in a sexual act with a hearing person, power dynamics can shift in favour of the hearing partner; indeed, D/deaf individuals risk miscommunication about their wants or needs and their self-efficacy in implementing safer sexual behaviours may consequently be minimal (Peinkofer, 1994). In such a situation, contextual factors can diminish the D/deaf person's behavioural control, undermining his/her intention to practice safer sex.

Reproductive Health Education (RHE) Policy and Practice

The reproductive health of youth is one of the most important individual, social and economic challenges facing countries in Sub-Saharan Africa (Schaalma & Kaaya, 2008). Schools have an important role to play in the reproductive health of youth, as schools reach a substantial number of young people at a particularly formative time in their development. Schools thus have the potential to positively influence the reproductive health behaviour of youth and, as such, have been recognised as an important setting for health education (Siegel et al., 1995; Tones & Green, 2004). According to WHO (in Tones & Green, 2004) the 'health promoting school' is one that aims to achieve healthy lifestyles for the total school population, by developing a supportive environment that encourages the promotion of health. This 'health promoting school' has three chief elements a) health education is taught through the formal curriculum b) the school ethos and environment complements the formal curriculum c) the relationship between the home, school and the surrounding community and services are conducive to the health promotion messages taught in the formal curriculum.

Health education itself has been formally defined as any combination of planned learning experiences that a) provide individuals, groups and communities with the opportunity to

acquire information and skills to make quality health decisions and that b) are based on sound theories (Joint Committee on Terminology, 2001). In accordance with Green and Kreuter (1999) health education is a systematically planned activity that can be distinguished from incidental learning. In health education, it is also vitally important that the multiple determinants of behaviour are matched with multiple learning experiences, that is, multiple educational interventions (*ibid*). Indeed, research has shown that health education should include the following three broad areas a) health knowledge to develop awareness and understanding of key issues b) life skills to develop skills and competencies c) social education to raise consciousness about the social determinants of health. It is also imperative that the ethos and environment complement what is taught in health education and that links with parents and the wider community are cultivated (*ibid*).

In South Africa, educational transformation in 1998 brought about Outcomes-based Education (OBE), a new curriculum (Curriculum 2005), and a new learning area/subject called Life Orientation. In 2000, the Curriculum 2005 was revised and is now referred to as the National Curriculum Statement (NCS). According to the National Curriculum Statements for Grades R-9 (DOE, 2003a) and Grades 10-12 (DOE, 2003b), Life Orientation is intended to equip learners for meaningful and successful living in a rapidly changing society and to facilitate individual growth so as to allow learners to contribute towards the creation of a democratic society, a productive economy and an improved quality of life in the community. Learning areas in LO are delineated as follows 1) health promotion: nutrition, diseases including HIV/AIDS and STDs, safety, violence, abuse and environmental health 2) social development: human rights, social relationships and diverse cultures/religions 3) personal development: life skills development, emotional development, self-concept formation and self-empowerment 4) physical development and movement: perceptual motor development, games and sports, physical growth and development, recreation and play 5) orientation to the world of work (senior phase only): career and information gathering, planning skills, self-knowledge, general work, further study and work ethics. In the NCS for Grades R-9 (DOE, 2003a), it is specified that 15% of the LO curriculum must be used to teach health promotion to Grades 8 and 9; however, the NCS for Grades 10-12 (DOE, 2003b) does not specify any recommended weightings for focus areas. Despite this confusion, what *is* clear is that what had previously been known as HIV/AIDS and life skills education was integrated into the LO curriculum since its inception in 1998.

By 2001, 90% of South African schools offered life skills programmes as part of the Life Orientation (LO) curriculum (Population Council/Horizons, 2003a). However, a systematic review of school-based HIV prevention programmes found that these programmes have not achieved their aim of modifying sexual behaviours (Mukoma & Flisher, 2008). A comparison between the programmes at different schools was reportedly difficult due to the considerable diversity of the programmes (*ibid*). Nevertheless, the review found that overall there were positive effects on knowledge, attitudes and amount of communication about sexuality. Despite these few positive effects, the review also found that there were negative, few or no effects on perceptions of susceptibility to infection, self-efficacy, behavioural intentions (to use condoms) and behavioural outcomes (with regards to number of partners, HIV-testing and condom use) (*ibid*). Similarly, a study conducted in KwaZulu-Natal with 5500 learners also found that although life skills programmes had led to an increase in knowledge, there was in fact minimal effect on the learners' sexual behaviours. Indeed, despite the fact that the youth had both increased confidence to use condoms and an increased level of actual condom use, there was no evidence that the youth are delaying sexual debut or reducing their number of partners as a part of life skills education (Population Council/Horizons, 2003a). Moreover, a KwaZulu-Natal based study amongst 22 schools found that there were only significant differences between the intervention and control group on the basis of knowledge; indeed, no effects were found on safer sexual practices (condom use, sexual intercourse) or on measures of psychosocial determinants of these practices (attitude and self-efficacy) (James, Reddy, Ruiter, McCauley et al., 2006). A study conducted by Gallant and Maticka-Tyndale (2003) on school- based HIV prevention programmes for African youth also found that knowledge and attitudes are easiest to change but that behaviour change is much more challenging.

It has been found that the positive effects of life skills programmes have much to do with the school climate in which they are implemented. Those programmes that are fully implemented have more positive effects overall than those that are only partially implemented (James et al., 2006). In South Africa, there is in fact great diversity in the implementation of the life skills curriculum (James et al., 2006; Mukoma & Flisher, 2008), which will in turn impact programme outcomes. In many cases, it is impossible to determine the degree to which programmes are implemented as most programmes are not monitored (Gallant & Maticka-Tyndale, 2003). Boler and Aggleton (2004) argue that for life skills programmes to be successful, they need to take place in a context where participatory teaching techniques (as opposed to didactic) are used and where teachers are in turn comfortable using such

participatory techniques; where there is a high degree of buy-in from the school and teachers themselves; and where the school environment is such that the rights and opinions of learners are taken seriously. In line with this, Boler and Aggleton (2004) argue that in contexts of poverty and resource shortages, it is easy for life skills programming to fail. It is such a context that unfortunately characterises many schools in South Africa. Moreover, in South Africa, sexual violence and rape of both schoolgirls and schoolboys, often by teachers themselves, is a marked feature of the schooling experience (Chisholm, 2004; Gallant & Maticka-Tyndale, 2003). Recognition that certain contexts can hinder the outcome of HIV/AIDS interventions (Aggleton & Campbell, 2000; Bhana, 2007, Campbell & MacPhail, 2002; Loewenson, 2007; Tawil, Verster & O Reilley, 1995; Weiss, Whelan & Gupta, 2000) demands that life-skills programmes pay greater attention to the broader social contexts in which young people live, as these can hinder behaviour change and undermine well-intentioned programmes.

Research shows that life skills programmes are more effective when conducted with primary school learners as opposed to secondary school learners; indeed, these programmes seem better able to instill safer sexual norms and safer sexual intentions among younger youth (Klepp, Ndeki, Leshabari, Hannan et al., 1997; Shuey, Babishangire, Omiat & Bagarukayo, 1999; James et al., 2006). This is in line with research findings showing that interventions introduced at a younger age, before individuals engage in high-risk behaviours, are more successful than those attempting to modify already established behaviours (Gaskins, Beard & Wang, 2002**;** Gillian, Eke, Aymer & O' Neil, 2001; Maypole, Schonfeld, O'Hare, Showalter et al., 1998). Arguments for starting sexuality education at a younger age includes the fact that many young people experience sexual debut before secondary school; indeed Demographic and Health Survey data (Chandan, Bhana & Richter, 2007) indicates that in many of the countries studied, over 25% of girls and 25% of boys have had sexual intercourse before the age of 15. Where early sexual initiation is the result of coerced sex, the provision of sexuality education could help young adolescents better protect themselves from coercive sexual relations (*ibid*). Late childhood and early adolescence is also a formative period where attitudes about gender norms and power relations start to be expressed in intimate personal relationships and introducing sexuality education at an early age can prompt critical thinking about sexuality and gendered relationships (*ibid*). Furthermore, many adolescents in developing countries, particularly girls and adolescents from poor families, do not reach secondary school where most reproductive health education is first offered; there is

thus a risk that such vulnerable groups will leave school never having received comprehensive reproductive health education (Rosgow & Habeland, 2005).

The role of teachers in disseminating HIV/AIDS information is critical for the success of school-based reproductive health education. Thus, for a programme to be faithfully implemented, teachers must be properly trained for and committed to the programme (Gallant & Maticka-Tyndale, 2003). Research conducted in hearing schools has found that approximately 90% of these schools have teachers that are trained to conduct life skills programmes (Brown et al., 2003). The literature shows contradictory findings regarding teachers' knowledge, attitudes and levels of comfort in teaching HIV/AIDS and reproductive health education. For example, a study conducted by Peltzer (2000) in the Limpopo province found that black teachers lacked adequate HIV/AIDS knowledge, while a study conducted by Peltzer and Promtussananon (2003) with 150 schools across South Africa found that teachers have good HIV/AIDS knowledge levels. Moreover, while some research shows teachers to have moderate levels of comfort around teaching HIV/AIDS and reproductive health education (Peltzer & Promtussananon, 2003), other research shows that many teachers feel extremely uncomfortable in discussing HIV/AIDS with learners due to cultural taboos regarding intergenerational communication around sex and religious beliefs around sex before marriage (Cherian, 2004; Gallant & Maticka-Tyndale, 2003) . Obstacles to teacher implementation of HIV/AIDS and RH education include a lack of community support (Gallant & Maticka-Tyndale, 2003; Peltzer & Promtussananon, 2003), a lack of materials and resources (Peltzer & Promtussananon, 2003), and curriculum overload (Gallant & Maticka-Tyndale, 2003). Mathews, Boon, Flisher and Schaalma (2006) found that teachers' decisions to implement HIV/AIDS education was strongly related to their sense of self-efficacy, and that high levels of self-efficacy to conduct HIV/AIDS education were related to having been trained in HIV/AIDS education.

HIV/AIDS and RH Education in Schools for the D/deaf

Internationally

According to Baker-Duncan, Dancer, Gentry, Highly et al. (1997), there was minimal HIV/AIDS and reproductive health education in American D/deaf schools in the 1990's. An American study conducted with 76 D/deaf schools across the country provides more insight into reproductive health education in D/deaf schools at this time; indeed, Getch et al. (1998)

found that although there had been an increase in sex education in D/deaf schools, 13% of schools still had no established health education curriculum by 1998. The authors argued that although the topic of HIV/AIDS was included in those schools which had sex education curricula, D/deaf students were still not receiving all the information needed as in 50% of schools, sexuality and HIV/AIDS education was not a class in itself but was instead subsumed into an existing class (*ibid*). Additional problems included a heavy reliance upon written texts and workbooks- resources inappropriate for D/deaf learners (*ibid*). This American study highlighted a critical need for education materials that would be more suitable for D/deaf learners and a need for the creation of separate reproductive health classes and curricula. Aside from these American studies, there is no available literature elucidating the state of HIV/AIDS and RH education in schools for the D/deaf internationally. In Sub-Saharan Africa, most countries have left the education of D/deaf children to private missionaries, charities, or other nongovernmental organisations (Kiyaga & Moores, 2003) and it is can be hypothesised that without a school context, HIV/AIDS and RH education is disregarded; however, as yet there is no available research regarding the status of HIV/AIDS and RH education in these countries.

Despite the paucity of research elucidating the current state of HIV/AIDS education in D/deaf schools internationally, it is clear that reproductive health education in these schools remains inadequate; indeed, there are some American studies seeking to explain how the weaknesses of RHE in D/deaf schools should be resolved. The first important aspect highlighted by numerous studies is the necessity of including visual materials such as pictures, films, photographs, graphics, drawings, overhead projector presentations and highly tactile objects (Getch et al., 2001; Winningham, Gore-Felton, Galletly, Seal et al., 2008). Indeed, due to the low literacy levels among D/deaf youth (Bat-Chava et al., 2005; Tamaskar et al., 2000; Trafton, 2006) visual materials constitute an extremely important teaching mode. Getch et al. (2001) add that when visual resources such as movies or films are used they should rightly feature D/deaf persons, so as to allow for an increased understanding by D/deaf youth of their HIV risk. Also emphasised is the fact that materials and resources should be constantly updated so as keep them fresh and interesting (*ibid*).

For reproductive health education to meet the needs of the D/deaf learner it is also imperative that these classes are conducted in sign language (Gannon, 1998; Getch et al., 2001). However, this standard can be difficult to achieve; indeed, an American study (Simms &

Thuman, 2007) has shown that the majority of teachers at D/deaf schools are in fact hearing and do not possess the competence to teach in natural sign language. In general, teachers of the D/deaf in Africa are also hearing and lack appropriate training and certification in sign language (Kiyaga & Moores, 2003). This phenomenon is a result of the 'oralism' paradigm that continues to plague D/deaf schools, which posits that the use of sign language in the classroom prevents D/deaf learners from learning English as their primary language and from integrating into the hearing community (Simms & Thuman, 2007). This belief is proved to be problematic as research consistently shows that D/deaf students with a strong foundation in natural sign language (ie. who learnt sign language at a young age from their D/deaf parents) academically outperform D/deaf learners who do not possess sign language as their primary language (Drasgow, 1998). That learners are not taught HIV/AIDS and RH education in sign language is problematic as the transfer of correct and comprehensive HIV/AIDS information can in fact only take place when educators ensure that the learners can fully understand what is being said (Gannon, 1998). It is thus essential that sex education teachers are not only fluent in sign language, but that they also know both formal sexual signs and the slang sexual signs likely to be used by learners (Gannon, 1998; Getch et al., 2001). Indeed, anecdotal evidence suggests that even for those teachers fluent in sign language, vocabulary related to sexual terminology is often limited or non-existent (Getch et al., 2001).

It is also imperative that reproductive health educators are trained in the dissemination of HIV/AIDS and RH education. Training of teachers at D/deaf schools is particularly pertinent due to the communication barriers that hinder D/deaf learners from gaining important information from parents and other spheres (Getch et al., 2001). Getch et al. (2001) argue that it is imperative for university teacher-training programmes to equip RHE teachers at schools for the D/deaf with training, current resources and continued support. However, an American study has found levels of training to be rather low; indeed, Getch and Gabriel (1998) found that only 64% of sexuality education teachers at schools for the D/deaf had received some formal training. More current estimates on the levels of teacher training are not available; there are also no available estimates for countries outside the U.S.

In addition to sign language skills and RHE training, Fitzgerald & Fitzgerald (1978) elucidated other fundamental competencies that sex education teachers at schools for the D/deaf need to possess in order for sex education to be successful: for example, they must be receptive, enthused and comfortable to teach in this area, as high levels of discomfort can

hinder the programme; they must be at ease with their sexuality and with the sexuality of others; they must be knowledgeable about human development and sexuality issues; and they must possess an understanding and appreciation of the D/deaf culture and its concomitant challenges. Although their article is not recent, it is likely that these factors remain relevant today. A study by Getch et al. (2001) conducted in the U.S. found that some teachers in D/deaf schools feel uncomfortable with their role as sexuality educator because of their lack of training in teacher preparation programmes and because of their fear of public recrimination.

In addition to the necessary teacher characteristics, research also shows that certain intervention characteristics influence the success of an RHE programme for D/deaf youth. For example, it has been found that an important aspect in reproductive health education for the D/deaf is the concept of storytelling. Indeed, both Gannon (1998) and Winningham et al. (2008) emphasise how the sharing of personal stories by HIV-positive D/deaf individuals can address low levels of perceived susceptibility in the D/deaf community, as these personal accounts bring the seriousness of the situation to a realistic and personal level. Closely related to this concept of storytelling is the important aspect of role-modelling, mentioned by both Gannon (1998) and Getch et al. (2001). It is argued that D/deaf learners seldom encounter D/deaf individuals and adults outside of school, meaning it can thus be extremely difficult for D/deaf youth to find role-models to identify with. This is problematic as in the context of HIV/AIDS education role-models constitute a crucial factor in the encouragement of safer sexual behaviour (*ibid*). Indeed, providing role-models to D/deaf youth who are frequently isolated from their families and the general population reportedly allows for them to witness experiences, including both platonic and romantic relationships, decision-making, conflict-resolution, and many other interpersonal skills associated with sexuality (Gannon, 1998; Getch et al., 2001). Role models who are D/deaf can also offer affirmation of D/deafness and the sexuality of individuals who are D/deaf (*ibid*). The incorporation of role-models in the HIV/AIDS and RH education of D/deaf learners is actually in line with the concept of 'positive sexuality' (otherwise known as 'comprehensive sexuality education'), which posits that sexuality is a natural and healthy aspect of human development. Indeed, positive sexuality reflects a view of sexuality that extends beyond sexual acts, pregnancy and disease prevention, to the fostering of attitudes, values, communication, decision-making and interpersonal skills required for reciprocal and satisfying sexual development and expression (Chandan et al., 2007). In contrast to more conventional sex education curricula, it seeks to

provide children and adolescents with unbiased, comprehensive, and age-appropriate understandings of sexuality so that they can experience their sexuality safely, responsibly and positively (*ibid*). It is argued that comprehensive sexuality education is the way forward for HIV/AIDS and RH education in South Africa (Chandan et al., 2007); it is likely that this holds for the education of D/deaf youth as well.

South Africa

South Africa is one of the few Sub-Saharan African countries where schools for the D/deaf are government supported and regulated; indeed, most of the Sub-Saharan region has left the education of their D/deaf youth to private missionaries, charitable organisations or other nongovernmental organisations (Kiyaga & Moores, 2003). In fact, South Africa (along with Kenya and Nigeria) is one of the leading countries in Sub-Saharan Africa in the provision of high school educational opportunities for D/deaf learners (*ibid*). Nevertheless, schools for the D/deaf in South Africa are still wholly inadequate as the current education system excludes D/deaf learners from equal education opportunities. Indeed, the majority of teachers in South African schools for the D/deaf are hearing and, as yet, no mandate has been set by the Department of Education to enforce the training of these teachers in South African Sign Language (DeafSA, 2006). As a result, the majority of teachers have no proficiency in SASL and communicate with learners using either spoken language or manual sign codes (Signing Exact English). This is an infringement of the international Salamanca Statement of 1994 which emphasises that D/deaf individuals should have access to education in their national sign language. This 'oralism' paradigm results in the majority of D/deaf learners leaving school functionally illiterate and excluded both from tertiary education and from many employment opportunities (DeafSA, 2006). Indeed, most of the D/deaf population who are employed in South Africa, work as labourers. Studies also show that the average level of education among the D/deaf population is Grade 7 and that only 20% of the total D/deaf workforce has completed Grade 12. With regards to tertiary education, D/deaf students form only 0.035% of the total number of South African university students (VOCTIDSA, n.d.).

Given the state of the educational system in South African schools for the D/deaf, it is likely that HIV/AIDS and RH education is also inadequate in these schools. The language barrier between teachers and their learners may be a crucial factor hindering positive outcomes of HIV/AIDS and RH education. These are certainly possibilities, however, little is known about the state of HIV/AIDS and RH education in South African schools for the D/deaf as

there has been little research conducted. Indeed, it is not known how many South African schools for the D/deaf implement HIV/AIDS and RH education; it is also not known what form HIV/AIDS and RH education takes in those schools that do have an HIV/AIDS and RH curriculum, or how effective that education has been in improving the knowledge and life skills of D/deaf learners.

To date, research conducted in the field of HIV/AIDS and RH education for D/deaf learners has taken the form of a study by the Sign Language Education and Development Programme (SLED). This study aimed to determine the major problems facing the D/deaf community in terms of HIV/AIDS, sex and abuse. The research was conducted in collaboration with LoveLife and it led to the development of core ideas for scripts, teacher manuals and learner activity books for the 'Life Skills HIV and AIDS Education for the South African Deaf Learner' programme (SLED, 2006). The programme was launched in 2004 by the South African Minister of Health, and since 2005 SLED has reportedly hosted training workshops aimed at empowering educators, teaching assistants and caregivers of D/deaf learners with the necessary skills to be able to use the 'Life Skills HIV/AIDS Education for the Deaf Learner' programme effectively (*ibid*). One of the programme's aims is to teach educators who are not proficient in SASL the signs for sexual and health-related terminology, in an effort to enhance communication between educators and learners. Preliminary qualitative research conducted by SLED regarding this programme showed much positive feedback from both learners and teachers alike (Maclons, n.d.). However, impact analysis has not yet been completed, and research conducted by the Gay and Lesbian Archives (GALA) in 2005 has in fact revealed that D/deaf learners do not have critical information about HIV/AIDS and sexuality, even in schools that have the HIV/AIDS- related materials developed by SLED (Morgan, 2005). It is thus imperative that more research is conducted to determine the extent to which these SLED materials are being put to use by the HIV/AIDS and RHE teachers of D/deaf learners. Research is needed to understand the reasons why HIV/AIDS and RH education in schools for the D/deaf is still not adequate, despite the creation of materials for D/deaf learners. This necessarily involves understanding the teacher- and school-related variables that may be hindering the optimal education of D/deaf learners.

Research in South African (hearing) schools has found that the teacher characteristics positively associated with implementing HIV/AIDS are: previous training in HIV/AIDS education; a feeling of self-efficacy; student-centeredness and concern for learners; a belief

that HIV/AIDS education can have positive outcomes; and a belief that one has the responsibility to supply learners with HIV/AIDS information and skills (Mathews et al., 2006). This study also found that certain school characteristics are also positively associated with teacher implementation of HIV/AIDS education; these include: the existence of a school HIV/AIDS policy; a climate of equity and fairness; and good school-community relations (*ibid*). Research examining the factors associated with teachers' decisions to implement HIV/AIDS and RH education has not been conducted in South African schools for the D/deaf. It is imperative that such research be carried out so that the vital role of teachers can be optimised in the reproductive health education of D/deaf learners.

Theoretical Framework for the study

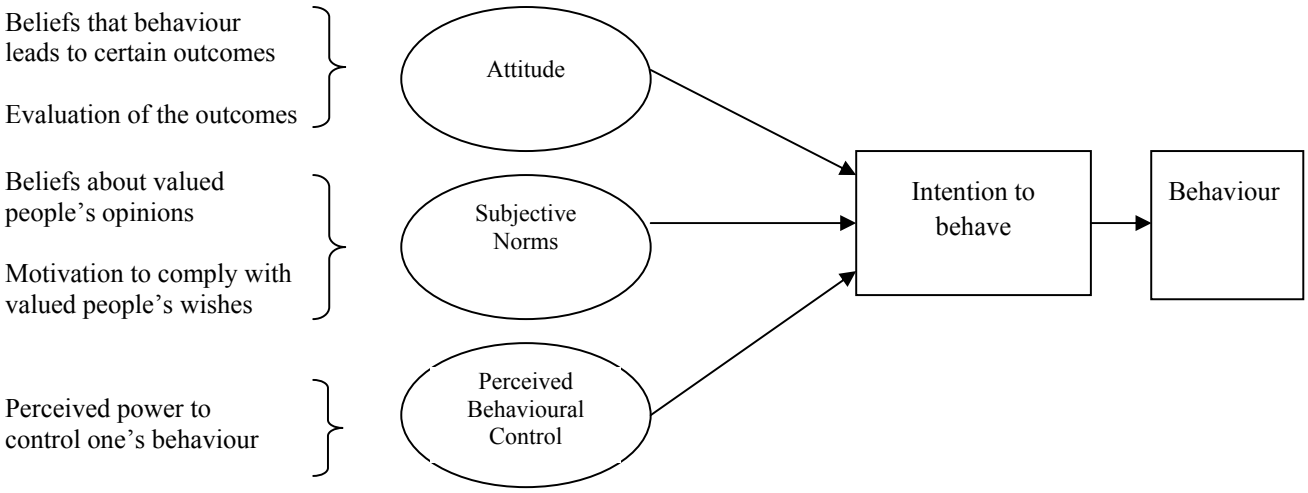
The Theory of Planned Behaviour

The theoretical framework used for this study was the Theory of Planned Behaviour (TPB). A description of this theory will be provided, and its relevance and application to this study will be highlighted.

The Theory of Planned Behaviour (Ajzen & Madden, 1986) posits that an individual's behaviour is determined by his/her intention to perform that behaviour. A person's *behavioural intention* is itself determined by three major factors: The first factor is the *attitude* (positive or negative) that the individual has towards performing the behaviour, where this attitude is determined by the individual's beliefs about the outcomes of performing the behaviour (*behavioural beliefs*) as well as by the value the person places on these outcomes (*valued outcomes*); the second major factor is the person's perceptions of other people's opinions regarding the behaviour (*subjective norm*), where this subjective norm is determined by the person's beliefs about what other people think he/she should do (*normative beliefs*), together with the person's degree of adherence to others' opinions (*motivation to comply*); the third factor is the individuals' perception regarding the controllability of the behaviour (*perceived behavioural control*) which is determined by the perception of resources or obstacles that either encourage or hinder the behaviour (*control beliefs*), together with the perceived impact of each resource or obstacle to facilitate or inhibit the behaviour (*perceived power*). The construct of *perceived behavioural control* is similar to Bandura's (1986) concept of 'self-efficacy' and accounts for factors outside an individual's control which may affect his/her intentions and behaviour; in other words, behaviour is not simply

determined by the behavioural intention, but also by the individual's ability. Thus, the Theory of Planned Behaviour (TPB) posits that to predict whether a person intends to do something, it is necessary to know whether the person is in favour of doing it, whether the person feels social pressure or support to do it, and whether the person feels in control of the action in question.

Figure 1: The Theory of Planned Behaviour (source: Petersen & Govender, 2010)



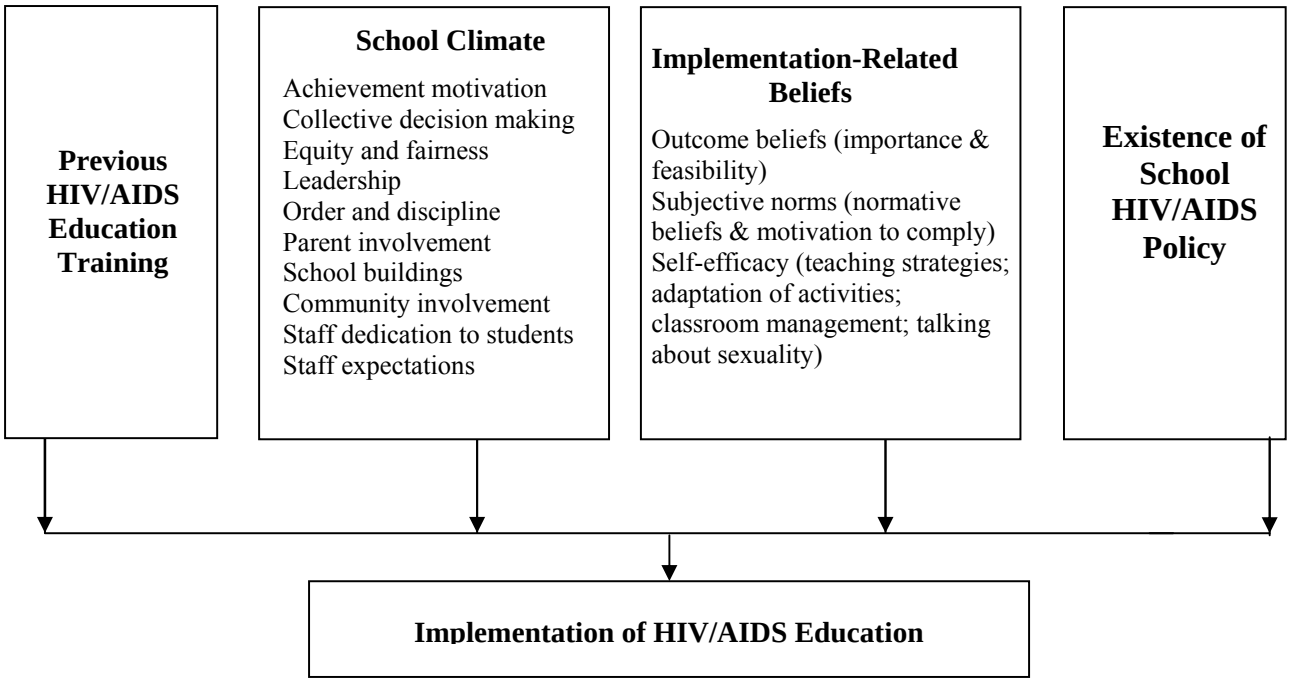
In the context of HIV/AIDS and RH education, and using the TPB as a theoretical framework, this study posits that teachers of D/deaf learners will implement HIV/AIDS and reproductive health education if they have a positive attitude towards implementing HIV/AIDS and RHE, where this positive attitude will be determined by whether or not they believe that teaching RHE will have positive outcomes, and whether these perceived outcomes are in fact valued by the teachers. Whether or not teachers will implement HIV/AIDS and RHE will also depend on their perceptions of others' beliefs about reproductive health education, including whether they believes that others support their provision of HIV/AIDS and RHE to D/deaf learners, together with their wish to comply with others opinions. Whether or not teachers will implement HIV/AIDS and RHE will also depend on whether they believe that they have controllability over reproductive health education, meaning whether or not they perceive there to be obstacles in implementing HIV/AIDS and RHE and the self-efficacy they believe they have in dealing with these obstacles. To conclude, whether teachers will implement HIV/AIDS and RHE or not will depend on whether they are in favour of HIV/AIDS and RHE, whether they feel supported to teach HIV/AIDS and RHE/ feel social pressure to teach HIV/AIDS and RHE, and whether or not they feel they have the self-efficacy to teach HIV/AIDS and RHE.

It has been argued that a limitation of the TPB is its assumption that behaviour is largely individually determined, and the theory's resultant disregard of contextual factors (Petersen & Govender, 2010). In an effort to enhance the value of the TBP framework, this study will use an extended version of the TPB. In Mathews et al.'s (2006) study of the factors associated with secondary school teachers' implementation of HIV/AIDS education in (hearing) schools in Cape Town, they included the construct of 'school climate' in order to take into account the important influence that the school context can have on teachers' decisions to implement HIV/AIDS education. Mathews at al's (2006) study used the construct 'school climate' as it was operationalised by Haynes, Emmons, Ben-Avie and Comer (1996). These authors explained 'school climate' to have two dimensions; 1) the *academic* climate: the extent to which students believe that they can learn and are willing to learn; the effort of teachers to get learners to learn; the expectations of staff members that learners will do well academically and will lead a successful life; and the principal's role in guiding the direction of the school and in creating a positive climate, and 2) the *social* climate: the involvement of parents and the community in the life of the school; the equal treatment of students regardless of ethnicity or gender; the appropriateness of student behaviour; and the appearance of the school buildings (*ibid*). In addition to the 'social climate' construct, Mathews et al. (2006) found that two additional contextual factors also influenced teacher implementation of HIV/AIDS education in (hearing) secondary schools in Cape Town: 1) the existence of a school HIV/AIDS policy and 2) previous HIV/AIDS education training by teachers (Mathews et al., 2006) (see Figure 2).

The Theory of Planned Behaviour has been used in a number of different contexts to predict specific behaviours. It has been used among adolescent populations to predict the onset of smoking (Jomphe-Hill, Boudreau, Amyot, Dery et al., 1997), the onset of drinking (Wall, Hinson & McKee, 1998), determinants of physical activity (Mummery, Spence & Hudec, 2000) and condom usage (Schaalma, Kok & Peters, 1993). It has also been used successfully among teacher populations in South Africa to determine the factors associated with their implementation of HIV/AIDS education in (hearing) secondary schools in Cape Town (Mathews et al., 2006); indeed, this study successfully used the Theory of Planned Behaviour (with the added 'social climate' construct) to investigate the teacher and school characteristics associated with the implementation of HIV/AIDS education. However, given the dearth of research conducted with D/deaf youth, there is no literature to suggest that the

TBP has been used as a framework to predict behaviours in schools for the D/deaf generally, or to specifically predict teacher implementation of HIV/AIDS and RH education in schools for the D/deaf.

Figure 2: Framework for investigating the factors associated with teachers' decisions to implement HIV/AIDS education (adapted from Mathews et al., 2006)



Conclusion

Despite a plethora of studies on HIV/AIDS and South African youth, little attention has been paid to the young D/deaf population. This is problematic as the literature suggests that D/deaf individuals have a high risk of HIV infection. Within the HIV/AIDS pandemic, schools have an important role to play as they reach a substantial number of young people at a particularly formative time in their development and thus have the potential to positively influence the reproductive health behaviour of youth. Teachers play a critical role in the success of school-based reproductive health education; however, research in (hearing) schools both internationally and nationally has shown that teachers face multiple barriers in their effective dissemination of sexuality and HIV/AIDS education. International studies conducted in D/deaf schools show that teachers of D/deaf youth face additional barriers to effective dissemination of HIV/AIDS and RH education. There is a paucity of South African literature on school-based HIV/AIDS and RH education for D/deaf youth. The SLED organisation has

developed a life skills HIV/AIDS programme for D/deaf learners and has reportedly held workshops to teach educators at schools for the D/deaf to implement the programme. However, as yet there is no available research on whether teachers at schools for the D/deaf are in fact implementing the SLED programme- or indeed any HIV/AIDS curriculum- or on the factors influencing teachers' decisions to implement HIV/AIDS and RH education. The aim of this study is therefore to investigate whether HIV/AIDS and reproductive health education is being implemented in secondary schools for the D/deaf in South Africa, the form such education takes, and the factors associated with teachers implementation of HIV/AIDS and RH education in these schools.

CHAPTER 3

RESEARCH METHODOLOGY

Introduction

The study is primarily quantitative in nature with a small qualitative component. The study design is a cross-sectional, self-administered postal survey with predominantly closed-ended questions and the instrument concluded with a broad, open-ended question. In this chapter, the aims, objectives, research questions and hypotheses of the study are detailed and, subsequently, the methodology is explained in terms of the sampling method, the procedure involved in the collection of data, the measuring instruments and the analysis of data. The method of data analysis for the qualitative portion at the end of the study is then detailed in terms of thematic content analysis. Lastly, relevant ethical considerations of the study are explored.

Aims and Objectives

The aims of this study is to investigate whether HIV/AIDS and RH education is being implemented at South African secondary schools for the D/deaf, together with what form this education takes and the factors influencing teacher implementation of HIV/AIDS and RHE.

In achieving these aims the study has the following objectives:

1) To determine whether HIV/AIDS and RH education is being implemented at South African secondary schools for the D/deaf (ie. is the LO curriculum being implemented?)
2) To determine the form that HIV/AIDS and RH education takes in these schools (ie. is the SLED programme being implemented?)
3) To determine whether the implementation of HIV/AIDS and RH education is significantly associated with particular demographic and contextual variables
4) To determine whether the implementation of HIV/AIDS and RH education is significantly associated with TPB constructs (outcome beliefs, subjective norms and self-efficacy)
5) To determine whether any TPB constructs (outcome beliefs, subjective norms and self-efficacy) are significantly associated with any demographic/contextual variables

(ie, 'school province', 'school type', 'school area', 'existence of a school HIV/AIDS policy', 'receipt of HIV/AIDS and RHE training', 'hearing status', 'mode of teaching learners' and 'level of SASL proficiency').

6) To determine whether the construct 'school climate' is significantly associated with any demographic/contextual variables (ie, 'school province', 'school area', 'existence of a school HIV/AIDS policy', 'receipt of HIV/AIDS and RHE training', 'hearing status', 'proportion of HIV/AIDS and RHE in the LO curriculum' and 'proficiency in SASL').
7) To determine whether the implementation of HIV/AIDS and RH education is significantly associated with the construct 'school climate'
8) To determine which independent variables are the strongest predictors of the dependent variable 'implementation of HIV/AIDS and RH education'.

Hypotheses

Hypothesis 1: Teachers are more likely to implement HIV/AIDS and RH education if their school has an HIV/AIDS policy.

Hypothesis 2: Teachers who have received HIV/AIDS and RH education training are more likely to implement HIV/AIDS and RH education.

Hypothesis 3: Teachers who are D/deaf are more likely to implement HIV/AIDS and RH education.

Hypothesis 4: Teachers who have excellent proficiency in South African Sign Language (SASL) are more likely to implement HIV/AIDS and RH education.

Hypothesis 5: Teachers who have received SLED materials are more likely to implement HIV/AIDS and RH education.

Hypothesis 6: Teachers who believe that HIV/AIDS and RH education is important (ie. who score higher on the 'perceived importance' subscale) are more likely to implement HIV/AIDS education.

Hypothesis 7: Teachers who believe that HIV/AIDS and RH education can bring about desired outcomes (ie. who score higher on the 'perceived feasibility' subscale) are more likely to implement HIV/AIDS education.

Hypothesis 8: Teachers who believe that others expect them to implement HIV/AIDS and RH education (ie. who score higher on the 'normative beliefs' subscale) are more likely to implement HIV/AIDS education.

Hypothesis 9: Teachers who are concerned about others' (such as the Governing Body's) expectations of them (ie. who score higher on the 'motivation to comply' subscale) are more likely to implement HIV/AIDS education.
Hypothesis 10: Teachers who have confidence in their ability to implement HIV/AIDS and RH education (ie. who score higher on the 'self-efficacy' scale) are more likely to implement HIV/AIDS and RH education.
Hypothesis 11: Teachers who have the perception that their school context is conducive to an optimal learning environment (ie. who score higher on the 'school climate' scale) are more likely to implement HIV/AIDS and RH education.

Methodology

Research Design

The study is primarily quantitative in nature with a small qualitative component. The study design is a cross-sectional, self-administered postal survey with predominantly closed-ended questions; the instrument concluded with an open-ended question. A cross-sectional design was used due to the time-constraints imposed by the HPCSA on the researcher. The open-ended question at the end of the questionnaire was intended to be exploratory and to allow the educators space to communicate on any needs or difficulties not targeted by the remainder of the questionnaire, and/or to expand on themes that had been addressed in the questionnaire.

Procedure and Sample

The Deaf Federation of South Africa (DeafSA) was approached for its support in the undertaking of this study and their support was obtained (see Appendix A). The Gauteng Department of Education (GDE) was also approached for its approval of this study and their approval was granted (see Appendix B). Attempts made to contact the Departments of Education in other provinces were unsuccessful. The study was also ethically cleared by the University of KwaZulu-Natal's Research and Ethics Committee (Faculty of Humanities, Social Sciences and Development) (see Appendix C).

A list of South African schools for the D/deaf was obtained from DeafSA Johannesburg. Those schools that identified themselves as pre-schools and/or primary schools were disregarded, as well as those that were found to no longer exist or to no longer have any D/deaf pupils. The final list consisted of 26 schools. Principals at the 26 secondary schools

for the D/deaf in South Africa were contacted via telephone and were asked to identify those teachers who are predominantly responsible for HIV/AIDS and RH education within the school. Most principals indicated that their schools have Life Orientation (LO) teachers who are responsible for teaching HIV/AIDS and RH education, while two principals indicated that HIV/AIDS and RH education is not taught within their school. For those schools with LO teachers, the principals were asked permission for their LO teachers to be sent questionnaires. The nature and purpose of the study was elucidated and the number of LO teachers employed at each school was noted. For those schools without HIV/AIDS and RH education, the nature and purpose of the study was also explained to the principals and they themselves were asked if they would complete the questionnaire. For those schools who taught D/deaf learners in addition to physically disabled learners or blind learners, participants were reminded to answer the questionnaire in relation to their D/deaf learners only. A raffle prize of R500 for the winning teacher and R500 for his/her school was offered as in incentive to encourage participation (the raffle was drawn in November and the winning party from Gauteng has been notified and paid). Questionnaires and informed consent forms were posted together with self-addressed return envelopes to the 20 schools that gave their verbal consent to participate. Reminder phone calls were placed to schools at 2, 4 and 6 weeks after the questionnaires had been posted.

All South African secondary schools for the D/deaf, and all LO teachers in these schools, were approached for participation. As participation in this study was strictly voluntary, there were a few teachers/principals who opted not to participate despite giving their verbal consent originally. Of the 20 schools who originally agreed to participate, 16 schools (33 teachers) completed and returned questionnaires. The final sample was drawn from secondary schools located in the Eastern Cape, Western Cape, Gauteng, Free State, KwaZulu-Natal and Mpumalanga.

An informed consent form (see Appendix D) was included with the questionnaire pack, requesting participation in the research study. The informed consent form explained that participation in the study will enable the researcher to learn more about the difficulties that teachers have in teaching HIV/AIDS and RH education to D/deaf learners and about the factors that influence their implementation of HIV/AIDS and RH education. A summary of the study was provided and the informed consent form reinforced issues such as confidentiality, anonymity, and the fact that participation in the study is voluntary. Contact

numbers for the researcher and for the supervisor of the study were provided should the teachers/principals need further information.

Permission was obtained from Cathy Mathews for the researcher to utilise a number of the scales set out in her Cape Town study in 2006 which assessed factors influencing teacher implementation of HIV/AIDS education in (hearing) secondary schools in Cape Town. An early draft of Mathews et al's (2006) questionnaire was e-mailed to the researcher for her to work from and use with the new sample.

Research instrument

Demographic information

The questionnaire (see Appendix E) obtained demographic information including: in which province the participant's school is; in which area the participant's school is (rural/informal settlement/urban/peri-urban); the type of school (government/model-C/private); whether the participant's school has an HIV/AIDS policy; what percentage of the LO curriculum is used to teach HIV/AIDS; the participant's hearing status; the participant's mode of communication in teaching the learners; the participant's proficiency in SASL; whether the participant has received HIV/AIDS education training; where the participant received HIV/AIDS education training; whether the participant teaches HIV/AIDS and RH education to all secondary school learners; from where the participant had got his/her HIV/AIDS curriculum; whether the participant had received the HIV/AIDS programme from SLED; whether the participant uses SLED materials in class; whether the pupils are examined on the HIV/AIDS and RH portion of the LO curriculum.

Outcome Beliefs

The participants' *outcome beliefs* regarding HIV/AIDS and RH education were determined by items obtained from the 'outcome beliefs' scale in Mathews et al's (2006) study, where outcome beliefs are determined by 1) 'perceived importance' items and 2) 'perceived feasibility' items.

There are 17 items in the 'perceived importance' subscale and participants had to respond on a 5 point Likert scale, ranging from 'very important', 'important', 'somewhat important', 'unimportant', and 'very unimportant'. Answers were scored in such a way that a score of 0 was assigned to an answer of 'somewhat important', a score of 1 to 'important', a score of 2

'very important", a score of -1 to 'unimportant' and a score of -2 to 'very unimportant'. For this subscale the lowest possible score is -34 and the highest possible score is 34. The higher the total score the more important the participant believes HIV/AIDS and RH education to be (see Question 17 in Appendix E). Cronbach's alpha for reliability of the 'perceived importance' subscale in the present study was high (α=0.89), indicating a high degree of internal consistency and stability amongst the items (see Table 1). Cronbach's alpha for Mathews et al's study (2006) was similar to the present study; α=0.92.

There are 9 items in the 'perceived feasibility' subscale and participants had to respond on a 5 point Likert scale, ranging from 'definitely yes', 'yes', 'I don't know', 'no' and 'definitely no'. Answers were scored in such a way that a score of 0 was assigned to an answer of 'I don't know', a score of 1 to 'yes', a score of 2 to 'definitely yes', a score of -1 to 'no' and a score of -2 to 'definitely no'. For this subscale the lowest possible score is -34 and the highest possible score is 34; the higher the total score greater the belief that HIV/AIDS and RH education can have positive outcomes (see Question 19 in Appendix E). Cronbach's alpha for reliability of the 'perceived feasibility' subscale in the present study was high (α=0.87), indicating a high degree of internal consistency and stability amongst the items (see Table 1). Cronbach's alpha for Mathews et al's study (2006) was similar to the present study; α=0.91.

Table 1
Reliability of the 'outcome beliefs' scale

Variable	Cronbach alpha coefficient
Perceived importance	.89
Perceived feasibility	.87

Subjective Norms

The participants' *subjective norms* regarding HIV/AIDS and RH education were determined by items obtained from the 'subjective norms' scale in Mathews et al's (2006) study, where subjective norms are determined by 1) 'normative beliefs' items and 2) 'motivation to comply' items.

There are 6 items in the 'normative beliefs' subscale' and participants had to respond on a 5 point Likert scale ranging from 'definitely yes', 'yes', 'I don't know', 'no' and 'definitely no'. Answers were scored in such a way that a score of 0 was assigned to an answer of 'I don't know', a score of 1 to 'yes', a score of 2 to 'definitely yes', a score of -1 to 'no' and a score of -2 to 'definitely no'. For this subscale the lowest possible score is -12 and the highest

possible score is 12. A higher score indicates that there is more pressure/support on the participant to teach HIV/AIDS education (see Question 15 in Appendix E). Cronbach's alpha for reliability of the 'normative beliefs' subscale in the present study was high (α=0.92), indicating a high degree of internal consistency and stability amongst the items (see Table 2). Cronbach's alpha for Mathews et al's study (2006) was in fact lower than in the present study; α=0.83.

There are 6 items in the 'motivation to comply' subscale and participants had respond on a 5 point Likert scale ranging from 'very concerned', 'concerned', 'I don't know', 'slightly concerned' and 'not at all concerned'. Answers were scored in such a way that a score of 0 was assigned to 'I don't know', a score of 1 to 'concerned', a score of 2 to 'very concerned', a score of -1 to 'slightly concerned', and a score of -2 to 'not at all concerned'. For this subscale the lowest possible score is -12 and the highest score is 12. The higher the score, the more likely it is that the participant will comply with the perceived expectations of others (see Question 20 in Appendix E). Cronbach's alpha for reliability of the 'motivation to comply' subscale in the present study was high (α=0.92), indicating a high degree of internal consistency and stability amongst the items (see Table 2). Cronbach's alpha for Mathews et al's study (2006) was in fact lower than in the present study; α=0.85.

Table 2
Reliability of the 'subjective norms' scale

Variable	Cronbach alpha coefficient
Normative beliefs	.92
Motivation to comply	.92

Self-efficacy

The participants' *self-efficacy* regarding HIV/AIDS and RH education were determined by items obtained from the 'self efficacy' scale in Mathews et al's (2006) study, where self efficacy is determined by 1) 'teaching strategies' items 2) 'adaptation of activities' items 3) 'classroom management' items and 4) 'talking about sexuality' items.

There are 6 items in the 'teaching strategies' subscale and participants had to respond on a 5 point Likert scale ranging from 'definitely yes', 'yes', 'I don't know', 'no' and 'definitely no'. Answers were scored in such a way that a score of 0 was assigned to an answer of 'I don't know', a score of 1 to 'yes', a score of 2 to 'definitely yes', a score of -1 to 'no' and a score of -2 to 'definitely no'. For this subscale the lowest possible score is -12 and the highest

possible score is 12. A higher score indicates a greater perceived self-efficacy to implement certain teaching techniques and processes (see Question 18 d, l, p, q, u and v in Appendix E). Cronbach's alpha for reliability of the 'teaching strategies' subscale in the present study was moderate (α=0.77) (see Table 3) and was lower than that found in Mathews et al's study (2006); α=0.91.

There are 6 items in the 'adaptation of activities' subscale and participants had to respond on a 5 point Likert scale ranging from 'definitely yes', 'yes', 'I don't know', 'no' and 'definitely no'. Answers were scored in such a way that a score of 0 was assigned to an answer of 'I don't know', a score of 1 to 'yes', a score of 2 to 'definitely yes', a score of -1 to 'no' and a score of -2 to 'definitely no'. For this subscale the lowest possible score is -12 and the highest possible score is 12. A higher score indicates a greater perceived self-efficacy to adapt the curriculum to so that it is relevant for the learners (see Question 18 a, b, e, i, m and t in Appendix E). Cronbach's alpha for reliability of the 'adaptation of activities' subscale in the present study was high (α=0.80) (see Table 3) and was similar to that found in Mathews et al's study (2006); α=0.82.

There are 5 items in the 'classroom management' subscale and participants had to respond on a 5 point Likert scale ranging from 'definitely yes', 'yes', 'I don't know', 'no' and 'definitely no". Answers were scored in such a way that a score of 0 was assigned to an answer of 'I don't know', a score of 1 to 'yes', a score of 2 to 'definitely yes', a score of -1 to 'no' and a score of -2 to 'definitely no'. For this subscale the lowest possible score is -10 and the highest possible score is 10. A higher score indicates a greater perceived self-efficacy to effectively manage HIV/AIDS and RH classes (see Question 18 c, f, j, r and n in Appendix E). Cronbach's alpha for reliability of the 'classroom management' subscale in the present study was acceptable (α=0.64) (see Table 3) and was lower than that found in Mathews et al's study (2006); α=0.82.

There are 5 items in the 'talking about sexuality' subscale and participants had to respond on a 5 point Likert scale ranging from 'definitely yes', 'yes', 'I don't know', 'no' and 'definitely no'. Answers were scored in such a way that a score of 0 was assigned to an answer of 'I don't know', a score of 1 to 'yes', a score of 2 to 'definitely yes', a score of -1 to 'no' and a score of -2 to 'definitely no'. For this subscale the lowest possible score is -10 and the highest possible score is 10. A higher score indicates a greater perceived self-efficacy to discuss

sexuality and HIV-related issues with learners (See Question 18 g, h, k, o and w in Appendix E). The terminology in question Q21g was modified as the term 'signs' was used in place of the term 'words' so as to be more appropriate for use in D/deaf schools. Cronbach's alpha for reliability of the 'talking about sexuality' subscale in the present study was moderate (α=0.77) (see Table 3) and was higher than that found in Mathews et al's study (2006); α=0.71.

Overall, Cronbach's alpha for reliability of the total 22 items from the 'self-efficacy' scale was high (α=0.92) (see Table 3) and was similar to that found in Mathews et al's study (2006); α=0.95.

Table 3
Reliability of the 'self-efficacy' scale

Variable	Cronbach alpha coefficient	
Teaching strategies	.77	
Adaptation of activities	.80	
Classroom management	.64	.92
Talking about sexuality	.77	

School Climate

The perceived conduciveness of the school climate to an optimum teaching/learning environment was determined by items obtained from the 'social climate' scale in Mathews et al's (2006) study, where social climate is determined by 1) 'achievement motivation' items 2) 'collaborative decision-making' items 3) 'equity and fairness' items 4) 'leadership' items 5) 'order and discipline' items 6) 'parental involvement' items 7) 'school buildings' items 8) 'school-community relations' items 9) 'staff dedication to student learning' items and 10) 'staff expectations' items.

There are 4 items in the 'achievement motivation' subscale and participants had to respond on a 5 point Likert scale ranging from 'strongly agree', 'agree', 'I don't know', 'disagree' and 'strongly disagree'. Answers were scored in such a way that a score of 0 was assigned to an answer of 'I don't know', a score of 1 to 'agree', a score of 2 to 'Strongly agree', a score of -1 to 'disagree' and a score of -2 to 'strongly disagree'. However, items Q21m and Q21aa had to be reverse-coded. For this subscale the lowest possible score is -8 and the highest possible score is 8. A higher score indicates a stronger belief that pupils are motivated to learn (see Question 21 a, m, aa and jj in Appendix E). Cronbach's alpha for reliability of the 'achievement motivation' subscale in the present study was moderate (α=0.75), indicating a

moderate degree of internal consistency and stability amongst the items (see Table 4). Cronbach's alpha for Mathews et al's study (2006) was higher than in the present study; α=0.82.

There are 6 items in the 'collaborative decision-making' subscale and participants had to respond on a 5 point Likert scale ranging from 'strongly agree', 'agree', 'I don't know', 'disagree' and 'strongly disagree'. Answers were scored in such a way that a score of 0 was assigned to an answer of 'I don't know', a score of 1 to 'agree', a score of 2 to 'strongly agree', a score of -1 to 'disagree' and a score of -2 to 'strongly disagree'. However, item Q21kk had to be reverse-coded. For this subscale the lowest possible score is -12 and the highest possible score is 12. A higher score indicates a stronger belief that school decisions are made collaboratively (see Question 21 b, q, v, bb, kk and qq in Appendix E).Cronbach's alpha for reliability of the 'collaborative decision-making' subscale in the present study was moderate (α=0.61) (see Table 4) and was lower than that found in Mathews et al's study (2006); α=0.81.

There are 5 items in the 'equity and fairness' subscale and participants had to respond on a 5 point Likert scale ranging from 'strongly agree', 'agree', 'I don't know', 'disagree' and 'strongly disagree'. Answers were scored in such a way that a score of 0 was assigned to an answer of 'I don't know', a score of 1 to 'agree', a score of 2 to 'strongly agree', a score of -1 to 'disagree' and a score of -2 to 'strongly disagree'. For this subscale the lowest possible score is -10 and the highest possible score is 10. A higher score indicates a stronger belief that learners are treated fairly and equally (see Question 21 c, n, r, w and cc in Appendix E). Cronbach's alpha for reliability of the 'equity and fairness' subscale in the present study was high (α=0.80) (see Table 4) and was similar to that found in Mathews et al's study (2006); α=0.81.

There are 6 items in the 'leadership' subscale and participants had to respond on a 5 point Likert scale ranging from 'strongly agree', 'agree', 'I don't know', 'disagree' and 'strongly disagree'. Answers were scored in such a way that a score of 0 was assigned to an answer of 'I don't know', a score of 1 to 'agree', a score of 2 to 'strongly agree', a score of -1 to 'disagree' and a score of -2 to 'strongly disagree'. However, items Q21o and Q21rr had to be reverse-coded. For this subscale the lowest possible score is -12 and the highest possible score is 12. A higher score indicates a stronger belief that the principal is a constructive

presence at the school (see Question 21 d, o, s, dd, ll and rr in Appendix E). Cronbach's alpha for reliability of the 'leadership' subscale in the present study was moderate (α=0.76) (see Table 4) and was lower than that found in Mathews et al's study (2006); α=0.82.

There are 8 items in the 'order and discipline' subscale and participants had to respond on a 5 point Likert scale ranging from 'strongly agree', 'agree', 'I don't know', 'disagree' and 'strongly disagree'. Answers were scored in such a way that a score of 0 was assigned to an answer of 'I don't know', a score of 1 to 'agree', a score of 2 to 'strongly agree', a score of -1 to 'disagree' and a score of -2 to 'strongly disagree'. However, items Q21t, Q21u and Q21vv had to be reverse-coded. For this subscale the lowest possible score is -16 and the highest possible score is 16. A higher score indicates a greater belief that learners are disciplined (see Question 21 e, m, t, u, ee, ss, uu and vv in Appendix E). Cronbach's alpha for reliability of the 'order and discipline' subscale in the present study was moderate (α=0.77) (see Table 4) and was lower than that found in Mathews et al's study (2006); α=0.92.

There are 4 items in the 'parental involvement' subscale and participants had to respond on a 5 point Likert scale ranging from 'strongly agree', 'agree', 'I don't know', 'disagree' and 'strongly disagree'. Answers were scored in such a way that a score of 0 was assigned to an answer of 'I don't know', a score of 1 to 'agree', a score of 2 to 'strongly agree', a score of -1 to 'disagree' and a score of -2 to 'strongly disagree'. For this subscale the lowest possible score is -8 and the highest possible score is 8. A higher score indicates a greater belief that parents are involved in the school (see Question 21 f, l, x and y in Appendix E). Cronbach's alpha for reliability of the 'parental involvement' subscale in the present study was high (α=0.84) (see Table 4) and was higher than that found in Mathews et al's study (2006); α=0.75.

There are 4 items in the 'school buildings' subscale and participants had to respond on a 5 point Likert scale ranging from 'strongly agree', 'agree', 'I don't know', 'disagree' and 'strongly disagree'. Answers were scored in such a way that a score of 0 was assigned to an answer of 'I don't know', a score of 1 to 'agree', a score of 2 to 'strongly agree', a score of -1 to 'disagree' and a score of -2 to 'strongly disagree'. However, Q16c had to be reverse-coded. For this subscale the lowest possible score is -8 and the highest possible score is 8. A higher score indicates a greater belief that the school is in good condition (See Question 16a, b, c and d in Appendix E). Cronbach's alpha for reliability of the 'school buildings' subscale in

the present study was acceptable (α=0.62) (see Table 4) and was lower than that found in Mathews et al's study (2006); α=0.81.

There are 4 items in the 'school-community relations' subscale and participants had to respond on a 5 point Likert scale ranging from 'strongly agree', 'agree', 'I don't know', 'disagree' and 'strongly disagree'. Answers were scored in such a way that a score of 0 was assigned to an answer of 'I don't know', a score of 1 to 'agree', a score of 2 to 'strongly agree', a score of -1 to 'disagree' and a score of -2 to 'strongly disagree'. However, Q21k and Q21ff had to be reverse-coded. For this subscale the lowest possible score is -8 and the highest possible score is 8. A higher score indicates a greater belief that the community has a good relationship with the school (see Question 21 g, k, ff and nn). Cronbach's alpha for reliability of the 'school-community relations' subscale in the present study was moderate (α=0.74) (see Table 4) and was lower than that found in Mathews et al's study (2006); α=0.81.

There are 6 items in the 'staff dedication to student learning' subscale and participants had to respond on a 5 point Likert scale ranging from 'strongly agree', 'agree', 'I don't know', 'disagree' and 'strongly disagree'. Answers were scored in such a way that a score of 0 was assigned to an answer of 'I don't know', a score of 1 to 'agree', a score of 2 to 'strongly agree', a score of -1 to 'disagree' and a score of -2 to 'strongly disagree'. However, item Q21ii had to be reverse-coded. For this subscale the lowest possible score is -12 and the highest possible score is 12. A higher score indicates a greater belief that school staff is dedicated to learner development (see Question 21 h, j, gg, ii, oo and tt in Appendix E). Cronbach's alpha for reliability of the 'staff dedication to student learning' subscale in the present study was high (α=0.82), indicating a high degree of internal consistency and stability amongst the items (see Table 4). Cronbach's alpha for Mathews et al's study (2006) was similar to the present study; α=0.84.

There are 4 items in the 'staff expectations' subscale and participants had to respond on a 5 point Likert scale ranging from 'strongly agree', 'agree', 'I don't know', 'disagree' and 'strongly disagree'. Answers were scored in such a way that a score of 0 was assigned to an answer of 'I don't know', a score of 1 to 'agree', a score of 2 to 'strongly agree', a score of -1 to 'disagree' and a score of -2 to 'strongly disagree'. However, item Q21pp had to be reverse-coded. For this subscale the lowest possible score is -8 and the highest possible score is 8. A

higher score indicates a greater confidence in the ability of the learners (see Question 21 i, z, hh, and pp in Appendix E). Cronbach's alpha for reliability of the 'staff expectations' subscale in the present study was high (α=0.80), indicating a high degree of internal consistency and stability amongst the items (see Table 4). Cronbach's alpha for Mathews et al's study (2006) was similar to the present study; α=0.83.

Overall, Cronbach's alpha for reliability of the total 51 items from the 'school climate' scale was high (α=0.94) (see Table 4) and was similar to that found in Mathews et al's study (2006); α=0.96.

Table 4
Reliability of the 'school climate' scale

Variable	Cronbach alpha coefficient	
Achievement motivation	.75	
Collaborative decision-making	.61	
Equity and fairness	.80	
Leadership	.76	
Order and discipline	.77	.94
Parental involvement	.84	
School buildings	.62	
School-community relations	.74	
Staff dedication to student learning	.82	
Staff expectations	.80	

Data Analysis

Quantitative Analysis

Revision of objectives and hypotheses

As all the schools that participated in the study did in fact implement HIV/AIDS and RHE to all D/deaf secondary school learners, the intended dependent variable 'implementation of HIV/AIDS and RH education' had to fall away. As a result, objectives 3, 4, 7 and 8 had to fall away, leaving the remaining objectives:

> Objective 1: To determine whether HIV/AIDS and RH education is being implemented at South African secondary schools for the D/deaf (ie. is the LO curriculum being implemented?)

Objective 2: To determine the form that HIV/AIDS and RH education takes in these schools (ie. is the SLED programme being implemented?)
Objective 5: To determine whether any TPB constructs (outcome beliefs, subjective norms and self-efficacy) are significantly associated with any demographic/contextual variables (ie, 'school province', 'school area', 'existence of a school HIV/AIDS policy', 'receipt of HIV/AIDS and RHE training', 'hearing status', 'proportion of HIV/AIDS and RHE in the LO curriculum' and 'proficiency in SASL').
Objective 6: To determine whether the construct 'school climate' is significantly associated with any demographic/contextual variables (ie, 'school province', 'school area', 'existence of a school HIV/AIDS policy', 'receipt of HIV/AIDS and RHE training', 'hearing status', 'proportion of HIV/AIDS and RHE in the LO curriculum' and 'proficiency in SASL').

As all the study's hypotheses related to the intended dependent variable 'implementation of HIV/AIDS and RH education', the hypotheses (1-11) also had to fall away.

Analysis

The data gathered in terms of the self-administered questionnaires was processed and analysed using the SPSS (version 15.0) computer programme.

Frequencies were calculated in order to determine the distributions of the scores for each of the demographic and contextual items. This assisted in the meeting of objectives 1 and 2 as previously discussed.

The TPB constructs ('outcome beliefs', 'subjective norms' and 'self-efficacy') were investigated in terms of descriptive data. Frequencies were calculated and descriptive analyses were run on each scale and subscale to determine the minimum and maximum scores and the means and standard deviations. As previously outlined, Cronbach alphas were calculated for each of the scales and subscales to determine their reliability. The TPB scales and subscales were also analysed in relation to demographic/contextual variables (ie, 'school province', 'school area', 'existence of a school HIV/AIDS policy', 'receipt of HIV/AIDS and RHE training', 'hearing status', 'proportion of HIV/AIDS and RHE in the LO curriculum' and 'proficiency in SASL'). This assisted in meeting objective 5.

In accordance with objective 5, one-way ANOVAS were run to compare mean scores on TPB scales and subscales for the variables 'school area' and 'proficiency in SASL'; a one-way ANOVA could not be used to compare mean scores in relation to the variable 'school province' as two provinces had only one case. Initially, one way ANOVAS were also unable to compare mean scores for the variable 'hearing status' as the category 'hard-of-hearing' had only one case; this case was recoded as 'system missing' so that the other two categories ('hearing'; 'Deaf') could be compared by means of an independent sample *t* -test. Initially, one-way ANOVAS were unable to compare mean scores for the variable 'proportion of HIV/AIDS and RHE in the LO curriculum' as the category 81-100% had only one case; this case was recoded as 'system missing' so that the other 4 categories could be compared by means of a one-way ANOVA. Independent sample *t*-tests were used to compare mean scores on scales and subscales for the variables 'receipt of HIV/AIDS and RHE training' and 'existence of school HIV policy'. Findings will be discussed in the results chapter.

The school climate construct and its subscales were also investigated in terms of descriptive data. Frequencies were calculated and descriptive analyses were run on the 'school climate' scale and its subscales to determine the minimum and maximum scores and the means and standard deviations. Cronbach alphas were calculated. The 'school climate' scale and its subscales were also analysed in relation to demographic/contextual variables (ie, 'school province', 'school area', 'existence of a school HIV/AIDS policy', 'receipt of HIV/AIDS and RHE training', 'hearing status', 'proportion of HIV/AIDS and RHE in the LO curriculum' and 'proficiency in SASL').This assisted in meeting objective 6.

In accordance with objective 6, one-way ANOVAS were run to compare mean scores on 'school climate' scales and subscales for the variables 'school area' and 'proficiency in SASL'; a one way ANOVA could not be used to compare mean scores in relation to the variable 'school province' as two provinces had only one case. Initially, one way ANOVAS were unable to compare mean scores for the variable 'hearing status' as the category 'hard-of-hearing' had only one case; this case was recoded as 'system missing' so that the other two categories ('hearing'; 'Deaf') could be compared by means of an independent sample *t* -test. Initially, one-way ANOVAS were unable to compare mean scores for the variable 'proportion of HIV/AIDS and RHE in the LO curriculum' as the category 81-100% had only one case; this case was recoded as 'system missing' so that the other 4 categories could be compared by means of a one-way ANOVA. Independent sample *t*-tests were used to compare

mean scores on scales and subscales for the variables 'receipt of HIV/AIDS and RHE training' and 'existence of school HIV policy'. Findings will be discussed in the results chapter.

In this study, a statistical level of significance of $p \leq .05$ is used as the acceptable level.

Qualitative Analysis

On the final page of the questionnaire, space was provided for the participants to express any additional comments they might have had. The comments made by the participants provided some insight into the needs of LO teachers regarding their implementation of HIV/AIDS and RH education, and tapped into some important issues that were not revealed by the questionnaire itself.

Data analysis of this section took the form of basic content analysis (BCA). According to Weber (1990) BCA is a research method that uses a set of procedures to make valid inferences from text, where these inferences could be about the sender(s) of the message, the message itself and/or the audience of the message. BCA has many uses, one of which is to code open-ended questions in surveys; as such this method is suitable for use in this study. In this study, the many words of the text were classified into much fewer content categories, thereby reducing text to more relevant, manageable bits of data. Words, phrases and other units of text presumed to have similar meanings were classified into categories. This was done by means of the coding scheme as set out in Weber (1990):

1) Firstly, the recording units were defined: given the minimal amount of data in this study, it was decided that the recording unit would be each word, as opposed to paragraphs or whole texts.
2) Secondly, the categories were defined: these categories needed to be mutually exclusive and specific to allow for greater clarity.
3) Thirdly, the researcher conducted 'test coding' on a sample of text: this allowed for ambiguities in the categories to be revealed and led to insights regarding revisions of the classification schemes.
4) Fourthly, accuracy was assessed: this occurred by means of the researcher's supervisor examining the classification schemes, voicing any disagreements and requesting clarification.

5) Fifthly, coding schemes were revised: taking the supervisor's comments into account, coding categories were revised wherever there was disagreement or confusion.

Ethical Considerations

The research proposal for this study was approved by the Research Ethics Committee of the University of KwaZulu-Natal, the Gauteng Department of Education and the Deaf Federation of South Africa. All participants were treated in accordance with the ethical principles upon which the research process is based: voluntary participation, informed consent, no harm, confidentiality, anonymity and privacy (De Vaus, 2002). At the outset, permission was obtained from school principals to approach their LO teachers regarding participation in the study. Principals who granted their permission were then sent questionnaires packs addressed to their LO teachers. In these packs the informed consent forms stated very clearly that participation was voluntary and that no negative consequences would follow for those who chose not to participate. The aim and nature of the study was also stated very clearly so that participants would understand what they were consenting to. The informed consent form also highlighted the fact that participants' answers would be kept confidential as only the researcher and her supervisor would have access to the data. Participants were also informed that although they needed to sign the informed consent form, their questionnaires would be separated from their consent forms in order to keep their answers anonymous; in practice, the questionnaires were separated from the consent immediately upon receipt. The final report will be sent not only to DeafSA who have requested it, but also to the participating schools so that they too will have access to the research findings.

Conclusion

This chapter outlined the method of sampling, provided description and explanation of the measuring instruments used and also detailed the procedure for the study conducted. The statistical analyses were outlined as well as the qualitative method of analysis, ending with considerations of relevant ethical principles applied as to the study. The following chapter will detail the results of analysis.

CHAPTER FOUR

RESULTS

Introduction

In this chapter, demographic and contextual findings are first reported, which assists in meeting objectives 1 and 2 as set out in the previous chapter. Secondly, findings related to the TPB constructs ('outcome beliefs', 'subjective norms' and 'self-efficacy') are reported in terms of descriptive data. Findings related to the association between TPB constructs and demographic/contextual data are then reported, in accordance with objective 5. Findings related to the 'school climate' construct are also reported in terms of descriptive data; and findings related to the association between the 'school climate' and demographic/contextual data are then reported, in accordance with objective 6. A statistical level of significance of $p \leq 0.05$ was used as the acceptable level for the purpose of this study.

In this chapter, the results of the Basic Content Analysis on the *additional comments* section are also set out. Chief coding categories are delineated and quotes illustrating each category are used where feasible.

Revised Objectives

As previously discussed, revised objectives are as follows:

> Objective 1: To determine whether HIV/AIDS and RH education is being implemented at South African secondary schools for the D/deaf (ie. is the LO curriculum being implemented?)
>
> Objective 2: To determine the form that HIV/AIDS and RH education takes in these schools (ie. is the SLED programme being implemented?)
>
> Objective 5: To determine whether any TPB constructs (outcome beliefs, subjective norms and self-efficacy) are significantly associated with any demographic/contextual variables (ie, 'school province', 'school area', 'existence of a school HIV/AIDS policy', 'receipt of HIV/AIDS and RHE training', 'hearing status', 'proportion of HIV/AIDS and RHE in the LO curriculum' and 'proficiency in SASL').
>
> Objective 6: To determine whether the construct 'school climate' is significantly associated with any demographic/contextual variables (ie, 'school province', 'school

area', 'existence of a school HIV/AIDS policy', 'receipt of HIV/AIDS and RHE training', 'hearing status', 'proportion of HIV/AIDS and RHE in the LO curriculum' and 'proficiency in SASL').

Demographic and Contextual Profile

Table 5 shows demographic information of the schools represented in the study. The table indicates the number of secondary schools for the D/deaf by province, the number of schools that took part in the study by province and finally, the total percentage of schools represented in the study by province. The table shows that there are 26 secondary schools for the D/deaf in South Africa, 16 of which took part in the study (61.5%). The study's findings represents data collected from 33.3% of the secondary schools for the D/deaf in the Eastern Cape; 80% of schools in the Western Cape; 85.7% of schools in Gauteng, 50% of schools in the Free State; and 50% of schools in Mpumalanga. The findings do not represent any secondary schools for the D/deaf from the Northern Cape, Limpopo or the North-West Province.

Table 5
Demographic profile of secondary schools for the D/deaf in SA

Province	Number of Secondary Schools for the D/deaf	Number of schools represented by study	Total % of schools represented by study
Eastern Cape	3	1	33.3%
Western Cape	5	4	80%
Gauteng	7	6	85.7%
Free State	2	1	50%
KwaZulu-Natal	4	2	50%
Mpumalanga	3	2	50%
Northern Cape	1	0	0%
Limpopo	0	0	0%
North-West	1	0	0%
Total	**26**	**16**	**61.5%**

Questionnaires were completed by the Life Orientation teachers at these schools or by teachers who taught any form of HIV/AIDS and RH education. Overall, 33 questionnaires were completed and returned (n = 33). The majority of participants (38.7%) indicated that they teach at a school in an urban area, while 35.5% indicated that they teach in a peri-urban area, 16.1% in an informal settlement and 9.7% in a rural area. Ninety-four percent of the sample indicated that they teach at a Government (public) school while 6.1% indicated that they teach at a Government (Model-C) school. The majority of the sample (93.5%) indicated that they teach at a school which has an HIV/AIDS policy while 6.5% indicated that their school did not have such a policy. Table 6 indicates additional contextual information of the

participants. As illustrated in the table, the majority (60%) of participants are hearing and the most popular mode of communication with learners is a combination of SASL, SEE and speech (48.5%). Only 12.1% of participants reported their SASL proficiency to be excellent. A quarter (25%) of participants have received no HIV/AIDS education training. Of those who have received training, 30% received it from provincial Departments of Education, 15% as a module through their own University training and 7% through unspecified workshops; the remainder of the sample received training from sources such as: DEAFSA, District Officials, TAC, Health Departments, various NGOs, District Cluster Groups, Sign Language Education and Development programmes or informal training by their own schools. Only 2 participants (6.1%) indicated that they had received HIV/AIDS education training through SLED. One participant (4.1%) reported receiving HIV/AIDS and RHE training from DeafSA; overall, only 10.2% reported receiving HIV/AIDS and RHE training via a programme developed specifically for teachers of D/deaf youth.

Table 6
Contextual profile of teachers

Characteristic	Frequency	Percentage
Hearing status		
Hearing	18	60%
Hard-of-Hearing	1	3.3%
Deaf	11	36.7%
Mode of teaching		
South African Sign Language	14	42.4%
Signing Exact English	1	3%
Oral (Speech)	1	3%
A combination of above	16	48.5%
'Teacher-Aid'	1	3%
Proficiency in SASL		
Non-existent	0	0%
Basic Skills	12	36.4%
Good	17	51.5%
Excellent	4	12.1%
Qualified Interpreter	0	0%
Received HIV/AIDS education training		
Yes	24	75%
No	8	25%

Table 7 shows that the majority of participants (71.1%) use the Government-school HIV/AIDS curriculum and that only three participants (9.4%) use the SLED programme. As can be seen in the table, only three of the participants have actually received SLED material.

The table shows that the majority of respondents (38.7%) indicated that 21-40% of the LO curriculum is spent teaching about HIV/AIDS and that 61.3% of participants indicated that learners are in fact examined on this aspect of the curriculum

Table 7
Contextual profile of HIV/AIDS and RHE curriculum

Characteristic	Frequency	Percentage	
Source of HIV/AIDS curriculum			
Government School Curriculum	27	84.4%	Multiple Response Set
Developed by SLED	3	9.4%	
Developed it myself	4	12.5%	
Other (DeafSA-Health, university materials, newspapers)	4	12.5%	
% of LO curriculum spent on HIV/AIDS			
0-20%	11	35.5%	
21-40%	12	38.7%	
41-60%	2	6.5%	
61-80%	5	16.1%	
81-100%	1	3.2	
Received HIV/AIDS education materials from any of these sources			
Government curriculum	20	74.1%	Multiple Response Set
SLED	3	11.1%	
GALA	1	3.7%	
Support groups/clinics	1	3.7%	
Private company	1	3.7%	
Library	1	3.7%	
Make materials myself	2	7.4%	
Haven't received any materials	2	7.4%	
Learners examined on HIV/AIDS aspect of curriculum			
Yes	19	61.3%	
No	12	38.7%	

Implementation of HIV/AIDS and RH education and the form such education takes

The question 'do you teach reproductive health and HIV/AIDS education to all secondary school D/deaf learners?' was intended to determine whether such education is in fact taking place in South African secondary schools for the D/deaf. In answer to this question, 75% of the sample answered 'Yes' while 25% answered 'No'. However, given the fact that some schools have more than one LO teacher, the question was deemed problematic as an answer of 'No' may indicate simply that the particular teacher does not teach all learners and not that HIV/AIDS and RH education is not taking place. Follow up calls to the participating schools

to clarify the issue found that all the schools in the sample do in fact teach HIV/AIDS and RHE to all their secondary school D/deaf learners. As a result, the dependent variable 'implementation of HIV/AIDS and RH education' fell away.

In conclusion, regarding objectives 1 and 2, findings of the study show that all schools in the sample do in fact implement HIV/AIDS and RH education to their secondary school D/deaf learners; in this study, HIV/AIDS and RHE coverage to pupils is thus 100% .The main form this education takes is the HIV/AIDS curriculum found in the Government-school LO curriculum as few participants have received SLED materials or training and few participants use the SLED programme.

Theory of Planned Behaviour Constructs

Outcome Beliefs

Perceived importance

The descriptive statistics of the 'perceived importance' subscale show the mean score to be 25.7 (out of a possible 34), with a minimum score of 6, a maximum score of 34 and a standard deviation of 7.99 (see Table 8). The Cronbach alpha (r) for the subscale is .89 which indicates a high reliability.

Table 8
Descriptive statistics for 'perceived importance' subscale

Variable	N	Minimum	Maximum	Mean	Std. Deviation
Perceived importance	33	6.00	34.00	25.6970	7.99408

Table 9 shows the frequencies of responses to items from the 'perceived importance' subscale, which measures how important the participant perceives HIV/AIDS and RH education to be.

Table 9
Frequencies on items from the 'perceived importance' subscale

How important is it that your learners….

	Very Important (%)	Important (%)	Somewhat Important (%)	Unimportant (%)	Very Unimportant (%)
talk to each other about sex?	51.5	21.2	24.2	3.0	0
become aware of what they find attractive in others and themselves?	45.5	33.3	18.2	3.0	0

Table 9 continued

Frequencies on items from the 'perceived importance' subscale

How important is it that your learners….

	Very Important (%)	Important (%)	Somewhat Important (%)	Unimportant (%)	Very Unimportant (%)
understand their feelings of desire for someone they find sexually attractive?	42.4	27.3	18.2	9.1	3.0
express their opinions about the roles of boys and girls in relationships?	51.5	30.3	15.2	0	3.0
are able to make clear to a partner about how far they are willing to go sexually?	66.7	12.1	15.2	6.1	0
understand how HIV is transmitted?	84.8	15.2	0	0	0
have knowledge about safer sexual practices (such as condom use or non-penetrative sex)?	84.8	9.1	6.1	0	0
choose to engage in safer sexual practices?	54.5	27.3	12.1	6.1	0
are able to make clear to a partner that they do not want to have sex or only want to have safe sex?	72.7	24.2	0	3.1	0
understand the obstacles that may prevent condom use, and have solutions to these problems?	60.6	24.2	9.2	3.0	3.0
know how to resolve conflicts in friendships and/ or sexual relationships?	63.6	24.2	9.1	3.1	0
know the difference between HIV and AIDS?	72.7	24.2	0	3.1	0
know the advantages of being tested for HIV?	84.8	12.1	3.0	0	0
are able to describe the problems that people in their community with AIDS experience?	72.7	18.2	9.1	0	0
know how to tell a friend or partner that he/she may be infected with an STD?	75.8	18.2	6.1	0	0
know that people with many sexual partners have a greater chance of getting infected with HIV or another STD?	87.9	6.1	6.1	0	0
have an understanding of homosexuality or bisexuality?	66.7	21.2	12.1	0	0

The one-way between groups analysis of variance conducted to determine if there was any difference in mean scores on the 'perceived importance' subscale with regards to the variable 'school area' found a statistically significant difference at the $p < .05$ in the 'perceived importance scores' for the different areas [$F (3, 27) = 4.54$, $p = 0.011$]. Post Hoc comparisons using Tukey HSD test indicated that the mean score for teachers from schools in informal settlements ($M = 16.40$, S.D. = 6.12) was significantly different to the mean score for teachers from schools in urban settlements ($M = 24.42$, S.D = 9.16). The mean score for teachers from urban settlements was also significantly different from that of teachers from schools in peri-urban settlements ($M = 29.55$, S.D = 4.61) and from that of teachers from rural areas ($M = 30.33$, S.D. = 5.51). There was also a significant difference in 'perceived importance' scores between teachers from schools in informal settlements and those in rural areas. The one-way ANOVAS conducted to determine if there were any difference in mean scores on the 'perceived importance' subscale with regards to the variables 'proficiency in SASL' and 'proportion of HIV/AIDS and RHE in the LO curriculum' found no significant difference in mean scores.

The t-tests conducted to determine if there were any differences in mean scores with regards to the variables 'hearing status', 'receipt of HIV/AIDS training' and 'existence of school HIV/AIDS policy' found no significant difference in mean scores on the 'perceived importance' subscale.

Perceived feasibility

The descriptive statistics of the 'perceived feasibility' subscale show the mean score to be 12.4 (out of a possible 18), with a minimum score of 1, a maximum score of 18 and a standard deviation of 5.15 (see Table 10). The Cronbach alpha (r) for the subscale is .87 which indicates a high reliability.

Table 10
Descriptive statistics for 'perceived feasibility' subscale

	N	Minimum	Maximum	Mean	Std. Deviation
Perceived Feasibility	33	1.00	18.00	12.4242	5.14800

Table 11 shows the frequencies of responses to items from the 'perceived feasibility' subscale, which measures perception regarding how feasible it is that HIV/AIDS and RHE education could have positive outcomes.

Table 11
Frequencies on items from the 'perceived feasibility' subscale

Through HIV/AIDS education learners will….	Definitely Yes (%)	Yes (%)	I Don't Know (%)	No (%)	Definitely No (%)
talk to each other about sex?	51.5	42.4	3.0	3.0	0
become aware of what they find attractive in others and themselves?	42.4	36.4	9.1	9.1	3.0
understand their feelings of desire for someone they find sexually attractive?	36.4	33.3	15.2	15.2	0
express their opinions about the roles of boys and girls in relationships?	36.4	51.5	6.1	6.1	0
be able to make clear to a partner about how far they are willing to go sexually ?	54.5	42.4	3.0	0	0
understand how HIV is transmitted?	66.7	33.3	0	0	0
have knowledge about safer sexual practices (such as condom use or non-penetrative sex)?	60.6	33.3	6.1	0	0
choose to engage in safer sexual practices?	57.6	36.4	0	0	6.1
able to make clear to a partner that they do not want to have sex, or only want to have safe sex?	60.6	33.3	3.0	3.0	0
talk to each other about sex?	51.5	42.4	3.0	3.0	0

The one-way between groups analysis of variance conducted to determine if there was any difference in mean scores on the 'perceived feasibility' subscale with regards to the variables 'school area', 'proficiency in SASL' and 'proportion of HIV/AIDS and RHE in the LO curriculum' found no significant difference in mean scores. The t-tests conducted to determine if there were any differences in mean scores with regards to the variables 'hearing status', 'receipt of HIV/AIDS training' and 'existence of school HIV/AIDS policy' found no significant difference in mean scores on the 'perceived feasibility' subscale.

Subjective Norms

Normative beliefs

The descriptive statistics of the 'normative beliefs' subscale show the mean score to be 7.6 (out of a possible 12), with a minimum score of -6, a maximum score of 12 and a standard deviation of 4.55 (see Table 12). The Cronbach alpha (r) for the subscale is .92 which indicates a high reliability.

Table 12
Descriptive statistics for 'normative beliefs' subscale

	N	Minimum	Maximum	Mean	Std. Deviation
Normative Beliefs	32	-6.00	12.00	7.5625	4.55035

Table 13 shows the frequencies of responses to items from the 'normative beliefs' subscale, which measures the degree of perceived pressure/support on the teachers with regards to teaching HIV/AIDS and RH education.

Table 13
Frequencies on items from the 'normative beliefs' subscale

Statements	Definitely Yes (%)	Yes (%)	I Don't Know (%)	No (%)	Definitely No (%)
The learners at my school expect me to teach them about HIV/AIDS	51.5	36.4	3.0	9.1	0
The Governing Body at my school expects me to teach learners about HIV/AIDS	45.5	36.4	9.1	9.1	0
Educators who teach the same subject as I do expect me to teach learners about HIV/AIDS	46.9	40.6	3.1	9.4	0
Educators who teach different subjects to me expect me to teach learners about HIV/AIDS	39.4	39.4	9.1	12.1	0
Education experts expect me to teach learners about HIV/AIDS	54.5	39.4	0	6.1	0
The parents/guardians of learners at my school expect me to teach their children about HIV/AIDS	42.4	42.4	12.1	3.0	0

The one-way between groups analysis of variance conducted to determine if there was any difference in mean scores on the 'classroom management' subscale with regards to the variables 'school area', 'proficiency in SASL' and 'proportion of HIV/AIDS and RHE in the LO curriculum' found no significant difference in mean scores. The t-tests conducted to

determine if there were any differences in mean scores with regards to the variables 'hearing status', 'receipt of HIV/AIDS training' and 'existence of school HIV/AIDS policy' found no significant difference in mean scores on the 'classroom management' subscale.

Motivation to comply

The descriptive statistics of the 'motivation to comply' subscale show the mean score to be 6.9 (out of a possible 12), with a minimum score of -10, a maximum score of 12 and a standard deviation of 6.29 (see Table 14). The Cronbach alpha (r) for the subscale is .92 which indicates a high reliability.

Table 14
Descriptive statistics for 'motivation to comply' subscale

	N	Minimum	Maximum	Mean	Std. Deviation
Motivation to Comply	31	-10.00	12.00	6.9355	6.28721

Table 15 shows the frequencies of responses to items from the 'motivation to comply' subscale, which measures likelihood of teachers complying with the perceived expectations of others.

Table 15
Frequencies on items from the 'motivation to comply' subscale

To what extent are you concerned about the expectations of the following people?

	Very Concerned (%)	Concerned (%)	I Don't Know (%)	Slightly Concerned (%)	Not at all Concerned (%)
The learners at school	71.0	16.1	3.2	9.7	0
The Governing Body	41.9	35.5	3.2	9.7	9.7
Educators who teach the same subject as you	54.8	16.1	3.2	12.9	12.9
Educators who teach different subjects to you	51.6	19.4	3.2	12.9	12.9
Education experts	58.1	19.4	12.9	3.2	6.5
Parents/guardians of Learners	74.2	19.4	3.2	3.2	0

The one-way between groups analysis of variance conducted to determine if there was any difference in mean scores on the 'motivation to comply' subscale with regards to the variables 'school area', 'proficiency in SASL' and 'proportion of HIV/AIDS and RHE in the LO curriculum' found no significant difference in mean scores.

The independent sample t-test conducted to compare mean scores on the 'motivation to comply' subscale for the variable 'existence of a school HIV/AIDS policy' found a significant difference in mean scores for participants who teach in schools that have an HIV/AIDS policy (M = 6.41, S.D. = 6.54) and those who teach in schools without an HIV/AIDS policy (M = 11.50. S.D. = 0.71) [t (29) = - 1.08, p = .04]. The t-tests conducted to determine if there were any differences in mean scores with regards to the variables 'hearing status' and 'receipt of HIV/AIDS training' found no significant difference in mean scores on the 'motivation to comply' subscale.

Self-efficacy Scale

The descriptive statistics of the 'self-efficacy' scale show the mean score to be 28.67 (out of a possible 44), with a minimum score of 3, a maximum score of 44 and a standard deviation of 11.47 (see Table 16). The Cronbach alpha (r) for the scale is .92 which indicates a high reliability.

Table 16
Descriptive statistics for 'self-efficacy' scale

	N	Minimum	Maximum	Mean	Std. Deviation
Self-Efficacy	33	3.00	44.00	28.6667	11.47461

The one-way between groups analysis of variance conducted to determine if there was any difference in mean scores on the basis of the variable 'SASL proficiency' found a statistically significant difference at the $p < .05$ level in the self-efficacy scores for the different levels of proficiency [F (2, 30) = 3.339, p = 0.049]. Post Hoc comparisons using Tukey HSD test indicated that the mean score for those teachers who have excellent SASL skills (M = 43.50, S.D. = 5.00) was significantly different from the mean scores for both those teachers who have good skills (M = 29.47, S.D = 10.30) and those who have basic skills (M = 27.50, S.D = 12.89). The one-way between groups analysis of variance conducted to determine if there was any difference in mean scores on the 'self-efficacy' scale with regards to the variables 'school area' and 'proportion of HIV/AIDS and RHE in the LO curriculum' found no significant difference in mean scores.

The t-tests conducted to determine if there were any differences in mean scores with regards to the variables 'hearing status', 'receipt of HIV/AIDS training' and 'existence of school HIV/AIDS policy' found no significant difference in mean scores on the 'self-efficacy' scale.

Self-efficacy subscales

Teaching strategies

The descriptive statistics of the 'teaching strategies' subscale show the mean score to be 7.58 (out of a possible 12), with a minimum score of 2, a maximum score of 12 and a standard deviation of 3.42 (see Table 17). The Cronbach alpha (r) for the subscale is .77 which indicates an adequate reliability.

Table 17
Descriptive statistics for 'teaching strategies' subscale

	N	Minimum	Maximum	Mean	Std. Deviation
Teaching Strategies	33	2.00	12.00	7.5758	3.41898

Table 18 shows the frequencies of responses to items from the 'teaching strategies' subscale, which measures perceived self-efficacy to implement particular teaching techniques and processes.

Table 18
Frequencies on items from the 'teaching strategies' subscale

As a teacher I feel I am able to……	Definitely Yes (%)	Yes (%)	I Don't Know (%)	No (%)	Definitely No (%)
prepare my curriculum so that learners know what the objectives are & how to fulfill them	57.6	39.4	3.0	0	0
give practical assignments (eg. interviews) to make learners aware of the diversity of sexual practices (eg. homosexuality & polygamy)	42.4	36.4	12.1	9.1	0
use fun exercises to help learners understand dating, love and sex	45.5	39.4	3.0	12.1	0
carry out a role-play where learners can defend their opinions about relationships and sexuality	51.5	45.5	0	0	3.0
take care of learners with personal or sensitive questions, both in & out of class	45.5	51.5	3.0	0	0
work with the Governing Body to determine learning objectives	57.6	39.4	3.0	0	0

The one-way between groups analysis of variance conducted to determine if there was any difference in mean scores on the 'teaching strategies' subscale with regards to the variables

'school area', 'proficiency in SASL' and 'proportion of HIV/AIDS and RHE in the LO curriculum' found no significant difference in mean scores.

The independent sample t-test conducted to determine if there was any difference in mean scores on the basis of the variable 'receipt of HIV/AIDS and RHE training' found a significant difference in mean scores between those who had received HIV/AIDS and RH education training (M = 6.61, S.D. = 4.74) and those who had not received HIV/AIDS education training (M = 9.75, S.D. = 2.89) [t (31) = - 1.8, p = .04]. The t-tests conducted to determine if there were any differences in mean scores with regards to the variables 'hearing status' and 'existence of school HIV/AIDS policy' found no significant difference in mean scores on the 'teaching strategies' scale.

Adaptation of activities

The descriptive statistics of the 'adaptation of activities' subscale show the mean score to be 7.36 (out of a possible 12), with a minimum score of -5, a maximum score of 12 and a standard deviation of 4.20 (see Table 19) The Cronbach alpha (r) for the subscale is .80 which indicates high reliability.

Table 19
Descriptive statistics for 'adaptation of activities' subscale

	N	Minimum	Maximum	Mean	Std. Deviation
Adaptation of Activities	33	-5.00	12.00	7.3636	4.20430

Table 20 shows the frequencies of responses to items from the 'adaptation of activities' subscale, which measures perceived self-efficacy to adapt the curriculum to so that it is relevant for the learners.

Table 20
Frequencies on items from the 'adaptation of activities' subscale

As a teacher I feel I am able to……	Definitely Yes (%)	Yes (%)	I Don't Know (%)	No (%)	Definitely No (%)
give learners homework investigating where to buy condoms	36.4	33.3	3.0	24.2	3.0
participate in courses or read extra literature about development in HIV education	66.7	30.3	0	3.0	0
translate videos and dramas about relationships & sexuality into a form	48.5	45.5	0	6.1	0

Table 20 continued
Frequencies on items from the 'adaptation of activities' subscale

As a teacher I feel I am able to……	Definitely Yes (%)	Yes (%)	I Don't Know (%)	No (%)	Definitely No (%)
the learners can understand					
adapt an HIV curriculum so that it is more suitable to the learners	54.5	39.4	3.0	0	3.0
use practical exercises (photo's, drawings, videos) to allow learners to think about what makes others physically attractive to them	48.5	33.3	6.1	6.1	6.1
use role play to stimulate learners to think about possible problems in negotiating condom use	42.4	39.4	6.1	9.1	3.0

The one-way ANOVA conducted to determine if there was any difference in mean scores on the basis of the variable 'proficiency in SASL' found a statistically significant difference at the $p < .05$ in the 'adaptation of activities' scores for the different levels of proficiency [$F(2, 28) = 2.949$, $p = 0.05$]. Post Hoc comparisons using Tukey HSD test indicated that the mean score for those teachers who have excellent SASL skills ($M = 11.25$, S.D. = 1.50) was significantly different from the mean scores for those teachers who have good skills ($M = 7.53$, S.D. = 3.14) and from those that have basic skills ($M = 6.75$, S.D. = 3.67). There was also a significant difference in scores between those teachers who had basic skills and those that had good skills; in fact, scores for all three levels of proficiency were significantly different from each other. The one-way between groups analysis of variance conducted to determine if there was any difference in mean scores on the 'adaptation of activities' subscale with regards to the variables 'school area' and 'proportion of HIV/AIDS and RHE in the LO curriculum' found no significant difference in mean scores.

The t-tests conducted to determine if there were any differences in mean scores with regards to the variables 'hearing status', 'receipt of HIV/AIDS training' and 'existence of school HIV/AIDS policy' found no significant difference in mean scores on the 'adaptation of activities' subscale.

Classroom management

The descriptive statistics of the 'classroom management' subscale show the mean score to be 7.12 (out of a possible 10), with a minimum score of 3, a maximum score of 10 and a

standard deviation of 2.38 (see Table 20). The Cronbach alpha (r) for the subscale is .64 which indicates acceptable reliability.

Table 21
Descriptive statistics for 'classroom management' subscale

	N	Minimum	Maximum	Mean	Std. Deviation
Classroom Management	33	3.00	10.00	7.1212	2.38167

Table 22 shows the frequencies of responses to items from the 'classroom management' subscale, which measures perceived self-efficacy to effectively manage HIV/AIDS and RH classes.

Table 22
Frequencies on items from the 'classroom management' subscale

As a teacher I feel I am able to……	Definitely Yes (%)	Yes (%)	I Don't Know (%)	No (%)	Definitely No (%)
be able to guide a group discussion in a manner that allows learners to listen to each other with respect	60.6	39.4	0	0	0
commit learners not to talk about the personal experiences of their classmates outside the classroom	42.4	36.4	3.0	15.2	3.0
motivate learners to listen to each other without prejudice or judgment	66.7	33.3	0	0	0
recognise that different people have different morals and values	63.6	36.4	0	0	0
facilitate group discussions in such a way that a few learners don't take over	39.4	48.5	6.1	6.1	0

The one-way between groups analysis of variance conducted to determine if there was any difference in mean scores on the 'classroom management' subscale with regards to the variables 'school area', 'proficiency in SASL' and 'proportion of HIV/AIDS and RHE in the LO curriculum' found no significant difference in mean scores. The t-tests conducted to determine if there were any differences in mean scores with regards to the variables 'hearing status', 'receipt of HIV/AIDS training' and 'existence of school HIV/AIDS policy' found no significant difference in mean scores on the 'classroom management' subscale.

Talking about sexuality

The descriptive statistics of the 'talking about sexuality' subscale of the 'self-efficacy' scale show the mean score to be 6.61 (out of a possible 10), with a minimum score of 1, a

maximum score of 10 and a standard deviation of 2.91 (see Table 22). The Cronbach alpha (r) for the subscale is .77 which indicates acceptable reliability.

Table 23
Descriptive statistics for 'talking about sexuality' subscale

	N	Minimum	Maximum	Mean	Std. Deviation
Talking about Sexuality	33	1.00	10.00	6.6061	2.91483

Table 24 shows the frequencies of responses to items from the 'talking about sexuality' subscale, which measures perceived self-efficacy to discuss sexuality and HIV-related issues with learners.

Table 24
Frequencies on items from the 'talking about sexuality' subscale

As a teacher I feel I am able to……	Definitely Yes (%)	Yes (%)	I Don't Know (%)	No (%)	Definitely No (%)
formulate signs for sexuality-related issues by brainstorming with the learners	48.5	39.4	3.0	6.1	3.0
show learners how to use condoms	39.4	36.4	12.1	12.1	0
create a comfortable atmosphere where learners will feel comfortable talking about relationships & sexuality	54.5	42.4	3.0	0	0
conduct a role-play where learners practice how to tell a friend that they might be infected with an STD	51.5	45.5	0	3.0	0
get learners to discuss in small groups possible solutions to the obstacles of safer sex	45.5	48.5	3.0	3.0	0

The one-way between groups analysis of variance conducted to determine if there was any difference in mean scores on the 'talking about sexuality' subscale with regards to the variables 'school area', 'proficiency in SASL' and 'proportion of HIV/AIDS and RHE in the LO curriculum' found no significant difference in mean scores. The t-tests conducted to determine if there were any differences in mean scores with regards to the variables 'hearing status', 'receipt of HIV/AIDS training' and 'existence of school HIV/AIDS policy' found no significant difference in mean scores on the 'talking about sexuality' subscale.

School Climate Scale

The descriptive statistics of the 'school climate' scale show the mean score to be 32.48 (out of a possible 102), with a minimum score of -30, a maximum score of 86 and a standard

deviation of 26.83 (see Table 25). The Cronbach alpha (r) for the scale is .94 which indicates a high reliability.

Table 25
Descriptive statistics for 'school climate' scale

	N	Minimum	Maximum	Mean	Std. Deviation
School Climate	31	-30.00	86.00	32.4839	26.8326

The one-way between groups analysis of variance conducted to determine if there was any difference in mean scores on the 'school climate' scale with regards to the variable 'proportion of HIV/AIDS and RHE in LO curriculum' found a statistically significant difference at the $p < .05$ level in 'school climate' scores for the different levels of HIV/AIDS and RHE proportions in the LO curriculum [$F (3, 24) = 2.942$, $p = 0.042$]. Post Hoc comparisons using Tukey HSD test indicated that the mean score for those teachers who report a proportion of 0-20% HIV/AIDS and RHE in the LO curriculum (M = 16; S.D. = 28.66) is significantly different from the mean score for those teachers who report a proportion of 61-80% of HIV/AIDS and RHE in the LO curriculum (M = 57.5; S.D. = 37.06). The one-way between groups analysis of variance conducted to determine if there was any difference in mean scores on the 'school climate' scale with regards to the variables 'school area' and 'proficiency in SASL' found no significant difference in mean scores.

The t-tests conducted to determine if there were any differences in mean scores with regards to the variables 'hearing status', 'receipt of HIV/AIDS training' and 'existence of school HIV/AIDS policy' found no significant difference in mean scores on the 'school climate' scale.

School Climate Subscales

Achievement motivation

The descriptive statistics of the 'achievement motivation' subscale show the mean score to be 0.28 (out of a possible 8), with a minimum score of -5, a maximum score of 4 and a standard deviation of 1.84 (see Table 26). The Cronbach alpha (r) for the subscale is .75 which indicates acceptable reliability.

Table 26
Descriptive statistics for 'achievement motivation' subscale

	N	Minimum	Maximum	Mean	Std. Deviation
Achievement motivation	32	-5.00	4.00	.2813	1.83574

Table 27 shows the frequencies of responses to items from the 'achievement motivation' subscale, which measures teachers' perception of how motivated their pupils are to learn.

Table 27
Frequencies on items from the 'achievement motivation' subscale

	Strongly Agree (%)	Agree (%)	I Don't Know (%)	Disagree (%)	Strongly Disagree (%)
Our learners are willing and eager to learn	30.3	54.5	3.0	12.1	0
Learners at this school do not care about learning	0	18.2	6.1	60.6	15.2
Learners at this school are unwilling to learn	0	21.2	9.1	48.5	21.2
It is easy to guide the behavior of learners at this school	12.5	62.5	0	21.9	3.1

The one-way between groups analysis of variance conducted to determine if there was any difference in mean scores on the 'achievement motivation' subscale with regards to the variables 'school area', 'proficiency in SASL' and 'proportion of HIV/AIDS and RHE in the LO curriculum' found no significant difference in mean scores. The t-tests conducted to determine if there were any differences in mean scores with regards to the variables 'hearing status', 'receipt of HIV/AIDS training' and 'existence of school HIV/AIDS policy' found no significant difference in mean scores on the 'achievement motivation' subscale.

Collaborative decision-making

The descriptive statistics of the 'collaborative decision-making' subscale show the mean score to be 4.75 (out of a possible 12), with a minimum score of -4, a maximum score of 12 and a standard deviation of 3.57 (see Table 28). The Cronbach alpha (r) for the subscale is .61 which indicates moderate reliability.

Table 28
Descriptive statistics for 'collaborative decision-making' subscale

	N	Minimum	Maximum	Mean	Std. Deviation
Collaborative Decision-Making	32	-4.00	12.00	4.7500	3.56506

Table 29 shows the frequencies of responses to items from the 'collaborative decision-making' subscale, which measures teachers' perceptions of the collaborative nature of school decisions.

Table 29
Frequencies on items from the 'collaborative decision-making' subscale

	Strongly Agree (%)	Agree (%)	I Don't Know (%)	Disagree (%)	Strongly Disagree (%)
Teachers are given opportunities to express their views on important matters	39.4	51.5	3.0	6.1	0
Learners are given opportunities to express their views on important matters	18.2	60.6	9.1	6.1	6.1
Non-teaching staff are asked to help with decisions on school matters	18.2	51.5	6.1	18.2	6.1
Teachers are given opportunities to express their views on important matters	30.3	60.6	0	6.1	3.0
There are few opportunities for parents to give their opinions on important matters	3.1	28.1	3.1	53.1	12.5
Professional non-teaching staff play an active role in decision-making groups	12.1	57.6	15.2	12.1	3.0

The one-way between groups analysis of variance conducted to determine if there was any difference in mean scores on the 'collaborative decision-making' subscale with regards to the variable 'proportion of HIV/AIDS and RHE in LO curriculum' found a statistically significant difference at the $p < .05$ level in 'collaborative decision-making' scores for the different levels of HIV/AIDS and RHE proportions in the LO curriculum [$F (3, 25) = 3.132$, $p = .043$]. Post Hoc comparisons using Tukey HSD test indicated that the mean score for those teachers who report a proportion of 0-20% HIV/AIDS and RHE in the LO curriculum ($M = 2.82$; $S.D. = 3.4$) is significantly different from the mean score for those teachers who report a proportion of 61-80% of HIV/AIDS and RHE in the LO curriculum ($M = 8.75$; $S.D. = 3.95$). The one-way ANOVA conducted to explore any difference in mean scores on the

basis of the variable 'SASL proficiency' found a significant difference at the $p < .05$ level for the different levels of SASL proficiency [$F (2, 29) = 4.866$, $p = .015$]. Post Hoc comparisons using Tukey HSD test indicated that the mean score for those teachers who report having good skills in SASL ($M = 3.25$; S.D. = 3.66) is significantly different from the mean score for those teachers who report having excellent skills in SASL ($M = 8.50$; S.D. = 4.36). The one-way between groups analysis of variance conducted to determine if there was any difference in mean scores on the 'collaborative decision-making' subscale with regards to the variables 'school area' found no significant difference in mean scores.

The t-tests conducted to determine if there were any differences in mean scores with regards to the variables 'hearing status', 'receipt of HIV/AIDS training' and 'existence of school HIV/AIDS policy' found no significant difference in mean scores on the 'collaborative decision-making' subscale

Equity and fairness

The descriptive statistics of the 'equity and fairness' subscale show the mean score to be 5.51 (out of a possible 10), with a minimum score of -8, a maximum score of 10 and a standard deviation of 3.58 (see Table 30). The Cronbach alpha (r) for the subscale is .80 which indicates high reliability.

Table 30
Descriptive statistics for 'equity and fairness' subscale

	N	Minimum	Maximum	Mean	Std. Deviation
Equity and Fairness	33	-8.00	10.00	5.5152	3.58051

Table 31 shows the frequencies of responses to items from the 'equity and fairness' subscale, which measures teachers' perceptions of how fairly and equally learners are treated.

Table 31
Frequencies on items from the 'equity and fairness' subscale

	Strongly Agree (%)	Agree (%)	I Don't Know (%)	Disagree (%)	Strongly Disagree (%)
Learners are treated the same regardless of race	66.7	24.2	3.0	0	6.1
Learners are treated the same regardless of social class	51.5	42.4	0	0	6.1
Male and female learners seem to benefit equally well from instruction	27.3	63.6	0	6.1	3.0
Male and female learners are treated equally well	36.4	54.5	6.1	3.0	0
The curriculum and materials reflect the cultural diversity of the learners	9.1	57.6	6.1	21.2	6.1

The one-way between groups analysis of variance conducted to determine if there was any difference in mean scores on the 'equity and fairness' subscale with regards to the variables 'school area', 'proficiency in SASL' and 'proportion of HIV/AIDS and RHE in the LO curriculum' found no significant difference in mean scores. The t-tests conducted to determine if there were any differences in mean scores with regards to the variables 'hearing status', 'receipt of HIV/AIDS training' and 'existence of school HIV/AIDS policy' found no significant difference in mean scores on the 'equity and fairness' subscale.

Leadership

The descriptive statistics of the 'leadership' subscale show the mean score to be 5.91 (out of a possible 12), with a minimum score of -5, a maximum score of 12 and a standard deviation of 3.63 (see Table 32). The Cronbach alpha (r) for the subscale is .76 which indicates moderate reliability.

Table 32
Descriptive statistics for 'leadership' subscale

	N	Minimum	Maximum	Mean	Std. Deviation
Leadership	32	-5.00	12.00	5.9062	3.63104

Table 33 shows the frequencies of responses to items from the 'leadership' subscale, which measures teachers' perceptions of how constructive the principal is in the school.

Table 33
Frequencies on items from the 'leadership' subscale

	Strongly Agree (%)	Agree (%)	I Don't Know (%)	Disagree (%)	Strongly Disagree (%)
The principal provides constructive feedback to teachers about their performance	30.3	54.5	0	9.1	6.1
The principal has little contact with the teachers	0	15.2	3.0	48.5	33.3
The principal visits teachers' class-rooms regularly	9.1	60.6	6.1	21.2	3.0
The principal sets the direction for the school	33.3	51.5	12.1	3.0	0
It is clear that the principal guides the management process at this school	31.3	59.4	6.3	3.1	0
The principal usually makes decisions concerning the school without consulting the educators	0	6.1	6.1	63.6	24.2

The one-way between groups analysis of variance conducted to determine if there was any difference in mean scores on the 'leadership' subscale with regards to the variable 'proportion of HIV/AIDS and RHE in the LO curriculum' found a statistically significant difference at the $p < .05$ level in 'leadership' scores for the different levels of HIV/AIDS and RHE proportion in the LO curriculum [$F (3, 25) = 3.150$, $p = .043$]. Post Hoc comparisons using Tukey HSD test indicated that the mean score for those teachers who report a proportion of 0-20% HIV/AIDS and RHE in the LO curriculum ($M = 3.82$; S.D. = 4.02) is significantly different from the mean score for those teachers who report a proportion of 61-80% of HIV/AIDS and RHE in the LO curriculum ($M = 9.75$; S.D. = 2.63). The one-way between groups analysis of variance conducted to determine if there was any difference in mean scores on the 'leadership' subscale with regards to the variables 'school area' and 'proficiency in SASL' found no significant difference in mean scores.

The t-tests conducted to determine if there were any differences in mean scores with regards to the variables 'hearing status', 'receipt of HIV/AIDS training' and 'existence of school HIV/AIDS policy' found no significant difference in mean scores on the 'leadership' subscale

Order and discipline

The descriptive statistics of the 'order and discipline' subscale show the mean score to be 4.42 (out of a possible 16), with a minimum score of -10, a maximum score of 11 and a

standard deviation of 4.89 (see Table 34). The Cronbach alpha (r) for the subscale is .77 which indicates moderate reliability.

Table 34
Descriptive statistics for 'order and discipline' subscale

	N	Minimum	Maximum	Mean	Std. Deviation
Order and Discipline	31	-10.00	11.00	4.4194	4.89063

Table 35 shows the frequencies of responses to items from the 'order and discipline' subscale, which measures teachers' perceptions of how disciplines their learners are.

Table 35
Frequencies on items from the 'order and discipline' subscale

	Strongly Agree (%)	Agree (%)	I Don't Know (%)	Disagree (%)	Strongly Disagree (%)
At this school, rules are obeyed by learners	21.2	54.5	9.1	12.1	3.0
Learners at this school do not care about learning	0	18.2	6.1	60.6	15.2
Teachers are often disrespected by learners	6.3	25.0	6.3	50.0	12.5
Learners are unfriendly	0	12.1	0	75.8	12.1
Learners here are caring	6.1	72.7	9.1	9.1	3.0
Learners here have good self-control	3.0	42.4	12.1	39.4	3.0
There is good discipline at this school	15.2	63.6	3.0	12.1	6.1
Rules are broken frequently by learners	3.0	33.3	3.0	57.6	3.0

The one-way between groups analysis of variance conducted to determine if there was any difference in mean scores on the 'order and discipline' subscale with regards to the variables 'school area', 'proficiency in SASL' and 'proportion of HIV/AIDS and RHE in the LO curriculum' found no significant difference in mean scores.

The independent sample t-test conducted to compare mean scores between 'hearing' and 'Deaf' groups found a significant difference in means scores between those teachers who are Deaf (M = 5.44, S.D. = 2.79) and those who are hearing (M = 3.61, S.D. = 6.01) [t (25) = 0.863, p = .018].

The t-tests conducted to determine if there were any differences in mean scores with regards to the variables 'receipt of HIV/AIDS training' and 'existence of school HIV/AIDS policy' found no significant difference in mean scores on the 'order and discipline' subscale

Parental involvement

The descriptive statistics of the 'parental involvement' subscale show the mean score to be -0.21 (out of a possible 8), with a minimum score of -8, a maximum score of 8 and a standard deviation of 4.22 (see Table 36). The Cronbach alpha (r) for the subscale is .84 which indicates high reliability.

Table 36
Descriptive statistics for 'parental involvement' subscale

	N	Minimum	Maximum	Mean	Std. Deviation
Parental Involvement	31	-10.00	11.00	4.4194	4.89063

Table 37 shows the frequencies of responses to items from the 'parental involvement' subscale, which measures teachers' perceptions of how involved their learners' parents are in school life.

Table 37
Frequencies on items from the 'parental involvement' subscale

	Strongly Agree (%)	Agree (%)	I Don't Know (%)	Disagree (%)	Strongly Disagree (%)
Parents frequently volunteer to help in the classrooms	15.2	9.1	12.1	42.4	21.2
Parents attend Parent-Teacher Association meetings	9.1	51.5	6.1	15.2	18.2
Parents frequently volunteer to help on special projects	12.1	30.3	18.2	30.3	9.1
Parents visit the school frequently	9.1	36.4	9.1	36.4	9.1

The one-way between groups analysis of variance conducted to determine if there was any difference in mean scores on the 'parental involvement' subscale with regards to the variables 'school area', 'proficiency in SASL' and 'proportion of HIV/AIDS and RHE in the LO curriculum' found no significant difference in mean scores. The t-tests conducted to determine if there were any differences in mean scores with regards to the variables 'hearing status', 'receipt of HIV/AIDS training' and 'existence of school HIV/AIDS policy' found no significant difference in mean scores on the 'parental involvement' subscale

School buildings

The descriptive statistics of the 'school buildings' subscale show the mean score to be 3.45 (out of a possible 8), with a minimum score of -5, a maximum score of 8 and a standard deviation of 2.93 (see Table 38). The Cronbach alpha (r) for the subscale is .62 which indicates acceptable reliability.

Table 38
Descriptive statistics for 'school buildings' subscale

	N	Minimum	Maximum	Mean	Std. Deviation
School buildings	33	-5.00	8.00	3.4545	2.92715

Table 39 shows the frequencies of responses to items from the 'school buildings' subscale, which measures teachers' perceptions of their school's condition.

Table 39
Frequencies on items from the 'school buildings' subscale

	Strongly Agree (%)	Agree (%)	I Don't Know (%)	Disagree (%)	Strongly Disagree (%)
The school has a bright and pleasant appearance	36.4	51.5	0	9.1	3.0
Generally, the school is well maintained	30.3	60.6	0	9.1	0
There are often broken windows or doors at the school	6.1	39.4	0	39.4	15.2
This school is a safe place	42.4	39.4	3.0	12.1	3.0

The one-way between groups analysis of variance conducted to determine if there was any difference in mean scores on the 'school buildings' subscale with regards to the variable 'proportion of HIV/AIDS and RHE in LO curriculum' found a statistically significant difference at the $p < .05$ level in 'school buildings' scores for the different levels of HIV/AIDS and RHE proportions in the LO curriculum [$F (3, 26) = 5.333$, $p = .005$]. Post Hoc comparisons using Tukey HSD test indicated that the mean score for those teachers who report a proportion of 0-20% HIV/AIDS and RHE in the LO curriculum ($M = 1.00$; S.D. = 3.41) is significantly different from the mean score for those teachers who report a proportion of 21-40% of HIV/AIDS and RHE in the LO curriculum ($M = 4.41$; S.D. = 1.62). The Tukey HSD also indicated that the mean score for those teachers who report a proportion of 0-20% of HIV/AIDS and RHE in the LO curriculum is also significantly different from the mean score of those teachers who report a proportion of 61-80% of HIV/AIDS and RHE in the LO

curriculum (M = 5.60; S.D. = 1.95). The one-way between groups analysis of variance conducted to determine if there was any difference in mean scores on the 'school buildings' subscale with regards to the variables 'school area' and 'proficiency in SASL' found no significant difference in mean scores.

The t-tests conducted to determine if there were any differences in mean scores with regards to the variables 'hearing status', 'receipt of HIV/AIDS training' and 'existence of school HIV/AIDS policy' found no significant difference in mean scores on the 'parental involvement' subscale.

School-community relations

The descriptive statistics of the 'school-community relations' subscale show the mean score to be 0.69 (out of a possible 8), with a minimum score of -4, a maximum score of 8 and a standard deviation of 3.42 (see Table 40). The Cronbach alpha (r) for the subscale is .74 which indicates moderate reliability.

Table 40
Descriptive statistics for 'school-community relations' subscale

	N	Minimum	Maximum	Mean	Std. Deviation
School-Community Relations	32	-4.00	8.00	.6875	3.42135

Table 41 shows the frequencies of responses to items from the 'school-community relations' subscale, which measures teachers' perceptions of the relationship between the school and its community.

Table 41
Frequencies on items from the 'school-community relations' subscale

	Strongly Agree (%)	Agree (%)	I Don't Know (%)	Disagree (%)	Strongly Disagree (%)
Members of the community work closely with school staff to improve the school	12.1	15.2	15.2	36.4	21.2
Community members are un-supportive of school activities	15.2	27.3	12.1	27.3	18.2
Community members are un-welcome in the school	0	0	0	57.6	42.4
There is good community involve-ment in the life of the school	6.3	25.0	15.6	40.6	12.5

The one-way between groups analysis of variance conducted to determine if there was any difference in mean scores on the 'school-community involvement' subscale with regards to the variables 'school area', 'proficiency in SASL' and 'proportion of HIV/AIDS and RHE in the LO curriculum' found no significant difference in mean scores. The t-tests conducted to determine if there were any differences in mean scores with regards to the variables 'hearing status', 'receipt of HIV/AIDS training' and 'existence of school HIV/AIDS policy' found no significant difference in mean scores on the 'school-community involvement' subscale.

Staff dedication to student learning

The descriptive statistics of the 'staff dedication to student learning' subscale show the mean score to be 3.81 (out of a possible12), with a minimum score of -12, a maximum score of 10 and a standard deviation of 4.40 (see Table 42). The Cronbach alpha (r) for the subscale is .82 which indicates high reliability.

Table 42
Descriptive statistics for 'staff dedication to student learning' subscale

	N	Minimum	Maximum	Mean	Std. Deviation
Staff Dedication To Student Learning	32	-12.00	10.00	3.8125	4.40262

Table 43 shows the frequencies of responses to items from the 'staff dedication to student learning' subscale, which measures teachers' perceptions of how dedicated school staff is to learner development.

Table 43
Frequencies on items from the 'staff dedication to student learning' subscale

	Strongly Agree (%)	Agree (%)	I Don't Know (%)	Disagree (%)	Strongly Disagree (%)
Teachers at this school try to make schoolwork exciting for learners	30.3	48.5	6.1	12.1	3.0
Learners are taught new material each year in every subject	12.1	57.6	15.2	6.1	9.1
Teachers use a variety of methods to help pupils learn	36.4	48.5	6.1	6.1	3.0
Few teachers are willing to give extra lessons after school	15.6	46.9	15.6	21.9	0
Here teachers find ways to motivate their learners	18.8	59.4	15.6	0	6.3
Teachers at this school are committed to helping pupils learn	30.3	57.6	3.0	6.1	3.0

The one-way between groups analysis of variance conducted to determine if there was any difference in mean scores on the 'staff dedication to student learning' subscale with regards to the variables 'school area', 'proficiency in SASL' and 'proportion of HIV/AIDS and RHE in the LO curriculum' found no significant difference in mean scores.

The independent sample t-test conducted to compare mean scores on the 'staff dedication to student learning' subscale for the variable 'existence of school HIV policy' found a significant difference in mean scores between teachers whose schools have an HIV policy (M = 3.93; S.D = 4.23) and teachers whose schools do not have a policy (M = 2.50; S.D. = 10.61) [t (28) = 0.423, p = .046]. The t-tests conducted to determine if there were any differences in mean scores with regards to the variables 'hearing status' and 'receipt of HIV/AIDS training' found no significant difference in mean scores on the 'staff dedication to student learning' subscale.

Staff expectations

The descriptive statistics of the 'staff expectations' subscale show the mean score to be 1.30 (out of a possible 8), with a minimum score of -8, a maximum score of 8 and a standard deviation of 3.65 (see Table 44). The Cronbach alpha (r) for the subscale is .80 which indicates high reliability.

Table 44
Descriptive statistics for 'staff expectations' subscale

	N	Minimum	Maximum	Mean	Std. Deviation
Staff Expectations	33	-8.00	8.00	1.3030	3.65278

Table 45 shows the frequencies of responses to items from the 'staff expectations' subscale, which measures teachers' perceptions regarding the ability of their learners.

Table 45
Frequencies on items from the 'staff expectations' subscale

	Strongly Agree (%)	Agree (%)	I Don't Know (%)	Disagree (%)	Strongly Disagree (%)
Teachers here believe that their learners will be among those who help solve the problems of the future	27.3	45.5	15.2	3.0	9.1
Staff at this school see a bright future for their learners	18.2	48.5	15.2	12.1	6.1
Teachers at this school expect their learners to go to university	9.1	38.4	12.1	33.3	6.1
Most staff here agree that many learners at this school will not complete high school	12.1	39.4	12.1	30.3	6.1

The one-way between groups analysis of variance conducted to determine if there was any difference in mean scores on the 'staff expectations' subscale with regards to the variables 'school area', 'proficiency in SASL' and 'proportion of HIV/AIDS and RHE in the LO curriculum' found no significant difference in mean scores. The t-tests conducted to determine if there were any differences in mean scores with regards to the variables 'hearing status', 'receipt of HIV/AIDS training' and 'existence of school HIV/AIDS policy' found no significant difference in mean scores on the 'staff expectations' subscale.

Summary of significant quantitative findings

The summary of results of the demographic and contextual data, descriptive statistics, one way ANOVAs and *t*-test analyses are as follows:

Demographic/contextual findings

- All of the schools in the study (100%) teach HIV/AIDS and RH education to all their secondary school D/deaf learners
- A few participants (6.5%) report teaching in a school that has no HIV/AIDS policy
- The majority of participants (60%) are hearing
- The most common mode of communication with learners is a combination of SASL, SEE and speech (48.5%)
- Only 12.1% of participants report their SASL proficiency to be excellent
- A quarter (25%) of participants have not received HIV/AIDS and RH education training

- Of those who have received training, only a small number of participants (6.1%) have received HIV/AIDS and RHE training through SLED and, overall, only 10.2% have received HIV/AIDS and RHE training via a programme specifically targeted for teachers of D/deaf learners
- The vast majority (84.4%) report the 'government school curriculum' as their source of HIV/AIDS and RHE curriculum and very few (9.4%) use the programme developed by SLED
- Only a small number of participants (11.1%) have received HIV/AIDS and RHE material from SLED
- The majority of participants (38.7%) use 21-40% of the LO curriculum for HIV/AIDS and RH education
- A number of the participants (38.7%) do not examine their learners on the HIV/AIDS aspect of the LO curriculum

Outcome beliefs

- Teachers from rural areas and peri-urban areas were found to have a significantly stronger belief in the importance of HIV/AIDS and RH education than teachers from urban areas and, lastly, those from informal areas ($p < .05$).

Subjective norms

- Teachers who teach in schools that do not have an HIV policy were found to be significantly more likely to comply with the perceived expectations of others than those who teach in schools that do have an HIV policy ($p < .05$).

Self-efficacy

- Teachers who have received HIV/AIDS and RH education training were found to have significantly lower self-efficacy to implement certain HIV/AIDS and RHE techniques and processes than teachers who have not received HIV/AIDS and RH education training ($p < .05$).
- Teachers who report having excellent SASL skills were found to have a significantly greater perceived overall self-efficacy to teach HIV/AIDS and RH education than those who report having good skills or basic skills ($p < .05$).

- Teachers who report having excellent SASL skills were found to have a significantly higher perceived self-efficacy to adapt an HIV/AIDS and RH curriculum to make it relevant for learners than those who report having good skills or basic skills ($p < .05$)
- Teachers who report having excellent SASL skills were found to have a significantly higher perceived self-efficacy to discuss sexuality and HIV-related issues with learners than those who report good skills or basic skills ($p < .05$)
- Teachers who teach in schools that do have an HIV policy were found to have a significantly higher perceived self-efficacy to adapt an HIV/AIDS and RH curriculum to make it relevant for learners than teachers who teach at schools that do not have an HIV policy ($p < .05$).

School climate

- Teachers who perceive their school climate to be conducive to optimum teaching and learning were found to implement a significantly higher proportion of HIV/AIDS and RH education as part of the LO curriculum than those who had a lower perception of their school climate ($p < .05$).
- Teachers with a greater perception that school decisions are made collaboratively were found to implement a significantly higher proportion of HIV/AIDS and RH education in the LO curriculum than those who perceived the collaborative nature of school decisions to be lower ($p < .05$).
- Teachers with a greater perception that their school principal is a constructive presence were found to implement a significantly higher proportion of HIV/AIDS and RH education in the LO curriculum than those who perceived their school principal's constructiveness to be lower ($p < .05$).
- Teachers who rated the quality of their school's conditions more highly were found to implement a significantly higher proportion of HIV/AIDS and RH education in the LO curriculum than those who rated their school's condition lower ($p < .05$).
- Teachers who report having excellent SASL skills were found to have a significantly higher perception that school decisions are made collaboratively than those teachers who report having good skills ($p < .05$).
- Teachers who indicated that they are 'hearing' were found to have a significantly greater belief that the school treats learners fair and equally than those teachers who indicated themselves to be Deaf ($p < .05$).

- Teachers who indicated that they are 'hearing' were found to have a significantly greater belief that their learners are disciplined than those teachers who indicated themselves to be Deaf ($p < .05$).
- Teachers who teach in schools that have an HIV policy have a significantly greater belief in the dedication of school staff to learners' development than those teachers who teach in schools without an HIV policy ($p < .05$).
- Teachers who teach in schools that have an HIV policy were found to have a significantly greater belief in the ability of learners than those teachers who teach in schools without an HIV policy ($p < .05$).

Table 46 and 47 provide a summary of the significant one-way ANOVAs and significant *t*-tests as found by the study.

Table 46
Summary of the significant one-way analysis of variance tests

Independent Variable	Dependant Variable	F	Sig.
School area	Perceived importance	4.537	0.11*
SASL proficiency	Self-efficacy	3.369	.048*
	Adaptation of activities	2.949	.050*
	Talking about sexuality	2.898	.050*
	Collaborative decision-making	4.866	.015*
Proportion of HIV/AIDS	School Climate	2.942	.053*
	Collaborative decision-making and RH in LO curriculum	3.132	.043*
	Leadership	3.150	.043*
	School buildings	5.333	.005**

* Sig. difference in the mean scores at $p < .05$
** Sig difference in the mean scores at $p < .01$

Table 47
Summary of the significant t-tests

Independent Variable	Dependant Variable	*t*	Sig.
Existence of school HIV policy	Motivation to comply	-1.083	.042*
	Adaptation of activities	.526	.031*
	Staff dedication to student learning	.423	.046*
	Staff expectations	.927	.047*
Receipt of HIV/AIDS and RHE training	Teaching strategies	-1.795	.038*
Hearing status	Equity and fairness	-1.004	.014*
	Order and discipline	.863	.018*

* Sig. difference in the mean scores at $p < .05$

Qualitative Results

On the final page of the questionnaire, participants were given the opportunity to make additional comments. The comments made by the participants provided some insight into the needs of LO teachers regarding their implementation of HIV/AIDS and RH education and tapped into some important issues that were not revealed by the questionnaire itself. Despite the variation and specificity in participants' responses, several important themes emerged through basic content analysis. Participants reported the following:

- Recognition of the importance of HIV/AIDS and RH education for D/deaf youth
- Inadequate SASL proficiency among teachers, which is hindering the implementation of HIV/AIDS and RH education in particular and the education of D/deaf learners in general
- Inadequate provision of HIV/AIDS and RHE programmes to D/deaf schools and inadequate teacher-training
- Inadequate self-efficacy and knowledge to implement HIV/AIDS and RHE to D/deaf learners
- Inadequate parental and community involvement in school-related matters
- Concerns related to logistical issues

Each of these themes is discussed in greater detail below and quotes are used to illustrate each theme.

Recognition of the importance of HIV/AIDS and RHE for D/deaf youth

Participants' responses indicated recognition that 1) D/deaf youth are vulnerable to HIV infection 2) D/deaf youth do not have sufficient access to HIV/AIDS and RHE information as public information channels are inadequate to D/deaf youth, meaning that they must depend heavily on teachers for this information 3) HIV/AIDS materials need to be adapted into a form more suitable D/deaf youth (the use of visual aids and the use of D/deaf adults as role models).

> *There needs to be more focus for HIV/AIDS education in Deaf learners because of them being exposed in their communities (Western Cape, informal settlement, hearing)*

HIV/AIDS and RHE materials need to be more readily available for Deaf learners. Once learners leave school they find it difficult to…obtain the assistance of trained professionals (Gauteng, urban, hearing)

HIV/AIDS is an important issue amongst our Deaf learners [be]cause they encounter problems of getting half information [be] cause most of the materials is not so Deaf-friendly so the Deaf miss out on information. They don't get a clear understanding of issues. They see what is happening on TV with no one to help them understand why it is like that. They depend entirely on teachers to support them with information (Western Cape, informal settlement, hearing)

There should be visual aids made available for the Deaf learners (Gauteng, urban, hearing)

Adult Deaf need to play a big role in educating Deaf learners because of their experience and they play as role models to the learners (Western Cape, informal settlement, Deaf)

Inadequate SASL proficiency among teachers

Participants' responses indicated recognition that the SASL skills of teachers, including their own skills, are inadequate. This language barrier plays a large role in teachers being reluctant to discuss HIV/AIDS and RH issues with D/deaf youth; when discussion does take place an improvisation of terms is often necessary as teachers do not seem to have knowledge of standard HIV/AIDS- related signs.

…most of the teachers here are not exposed to sign language; we only apply basic skills (Mpumalanga, peri-urban, hearing)

Workshops for HIV/AIDS terminology should be introduced to all schools for learners with Deafness, especially to Life Skills educators (for example, immune system, cells, immunodeficiency, syndrome etc). At present I improvise my own signs, but it would be wise if we use common signs in South Africa (Gauteng, urban, hearing)

Because of the lack of sign language training and certification, teachers are reluctant to discuss HIV/AIDS and RHE issues with learners…every teacher of the Deaf should be qualified in Deaf education and sign language. This would make it easier to discuss any issue with Deaf learners. Teachers would understand Deaf culture and identity better and would solve problems easily (Gauteng, urban, hearing)

Poor teacher proficiency in SASL does not only hinder Life Orientation classes and the dissemination of reproductive health information, but it also encumbers the education of D/deaf learners as related to the overall secondary school curriculum, as teachers who cannot effectively communicate with their learners cannot effectively educate their learners. Participants place the responsibility for this communication barrier on 1) teachers themselves for not seeking out training in SASL 2) teacher-training courses for not automatically supplying teachers at D/deaf schools with SASL training 3) the Department of Education for

implementing a mainstream curriculum at schools for the D/deaf as opposed to an adapted curriculum that is suitable for D/deaf learners.

> *Teachers at this school do expect learners to go to University, but due to their handicap they cannot cope with their work as set in the curriculum*; *therefore, the general feeling among educators is that given the identified learning problems incurred these learners cannot complete high school[and obtain] matric senior certificates. The current curriculum cannot address the needs of the Deaf…this curriculum is traditionally designed for the speaking and hearing learners. Teachers fail to successfully teach these learners because they have not gone for training to deal with Deaf learners*; *they have only been trained for teaching speaking-hearing learners without using sign language (Free State, urban, hearing)*
>
> *The major disadvantage of these learners is language*. *Sign language has no tense and comprehension of words is difficult*. *To answer a question the Deaf learner has to first comprehend the question. Further, tests and exams are not in sign language which makes [the learners'] chances of obtaining good symbols in tests and exams difficult*. *It is important to become a priority because presently the Deaf learners [are] being disadvantaged (KwaZulu-Natal, urban, hearing)*
>
> *We need to have our own curriculum*. *At the moment we are following the mainstream or NCS curriculum which does not help our learners and is not Deaf-friendly*. *I strongly feel that if we can have our own curriculum, we can produce a good foundation (Western Cape, informal settlement, hard-of-hearing)*

Participants also expressed a desire to be consulted about their views of the current curriculum and be given an opportunity to contribute to a modified curriculum for schools for the D/deaf.

> *It will be appreciated if teachers were given an opportunity to express their views on important matters; for example, when dealing with the adaptation of the curriculum, adaptation of question papers etc (Gauteng, urban, hearing)*

Inadequate provision of HIV/AIDS and RHE programmes to D/deaf schools and inadequate teacher-training

Numerous participants communicated a request for the Department of Education, NGOs, or even the researcher, to involve their schools in HIV/AIDS programmes and to provide both learners and teachers (particularly LO teachers) with more information about HIV/AIDS. A resounding call for workshops, programmes and information suggests that there has been inadequate provision of programmes and teacher-training to date.

> *The Education Department has to provide workshops for educators on reproductive health education and HIV/AIDS materials related to RHE and HIV/AIDS, with new information have to be supplied to various schools annually (Gauteng, urban, hearing)*

There should be more workshops regarding HIV/AIDS by the GDE (Gauteng, urban, hearing)

I wish that we have more materials on HIV and AIDS information and workshops be provided for learners and parents. LO teachers to also be provided with more knowledge so that it will be given back to our learners (Gauteng, peri-urban, Deaf)
It is important for our learners to have this kind of information because our learners are hostel-based. They must have the opportunity to see and participate in the programmes (Gauteng, peri-urban, Deaf)

I strongly support the questionnaire is excellent and if possible make copies and send us at our school to give us a guide to develop a well understandable lesson…I suggest you include some case studies which elaborates more of the HIV/AIDS statistics (Gauteng, peri-urban, Deaf)

Good research that makes me to become curious and eager to know more about certain aspects regarding HIV/AIDS and Reproductive Health Education (Gauteng, urban, hearing)

Inadequate self-efficacy and knowledge to implement HIV/AIDS and RHE to D/deaf youth

A few participants expressed a lack of confidence in implementing HIV/AIDS and RH education at schools for the D/deaf. Inadequate levels of self-efficacy are also evidenced in a participant's passing the responsibility of RH education on to nurses.

Educators are sometimes afraid to be explicit about sexual matters. Therefore, assistance is required from the health sector (Gauteng, urban, hearing)

Nurses should be employed by the GDE to go to schools regularly to discuss RHE and HIV/AIDS; this would result in fewer pregnancies in school (Gauteng, urban, hearing)

The strongly moralistic undertone of two of the participants suggests that there may be a lack of knowledge among LO teachers as to the important contextual variables that play a role in the HIV pandemic. One could also question the ability of such individuals to generate open and honest sexual discussion with young learners.

Today's learners are different from those of the past who were disciplined, with morals and values and respecting elders. Because of the abovementioned aspects which are no longer existing in our learners, it has resulted in big problems (Gauteng, urban, hearing)

Learners, especially girls, should be told how to dress in a dignified manner to prevent problems (Gauteng, urban, hearing)

Inadequate parental and community involvement in school-related matters

Participants' comments also reflected a need for parents to be more involved with the school and with their children's education; however, they also expressed an understanding of the financial reasons for such lack of involvement.

> *Parents to be assisted with traveling funds to be able to visit the school regularly, since most of these parents are from poverty-stricken areas, they are unemployed, that is the reason for them not to visit or attend parent-teacher meetings (Gauteng, urban, hearing)*
>
> *As the school is situated in the rural areas parents of these learners have problems coming and visiting the school as transport is not available all the time. So parents are unable to get fully involved in the education of their learners (Eastern Cape, rural, Deaf)*

Participants also expressed a view that the wider community is inadequately involved in schools for the D/deaf and is uninterested in the well-being of these schools. One participant suggested that the teaching of SASL to the wider hearing community could be a way to bridge this gap.

> *As for the community, in the first place they have no learners at the school. Secondly, they do not care for the problems experienced at a school for the Deaf, they are only interested in using the school to develop their community (Eastern Cape, rural, Deaf)*
>
> *Media must be used to teach…sign language to the community. All public sectors must have knowledgeable, informed people about sign language. This will thereby make living to the Deaf people/learners easy, helpful and communicable everywhere (Gauteng, urban, Deaf)*

Concerns related to logistical issues

Some participants expressed a concern regarding the location of schools for the D/deaf; the distance of some D/deaf schools from urban areas seems to make the educator's job more challenging and also seems to result in some D\deaf learners being placed incorrectly in schools in order to be closer to home.

> *The location of the school, the lack of resources and the distance from services makes the educator's work difficult: the school is +/- 70 kms from town (Eastern Cape, rural, Deaf)*
>
> *I feel that the Deaf pupils are incorrectly placed at this school, which actually caters for severely intellectually impaired learners. The Deaf pupils are only placed here as it is closer to home while the schools for the Deaf are too far away for these learners (Mpumalanga, peri-urban, hearing)*

Summary of important qualitative findings

Analysis of the participants' additional comments highlighted a number of important themes: participants recognise the importance of HIV/AIDS and RH education for D/deaf youth, are concerned about the lack of access D/deaf youth have to HIV/AIDS and RHE information, and contend that this information needs to be disseminated in a manner more suitable for D/deaf youth. Participants also expressed a view that teachers' poor SASL proficiency is hindering the effective dissemination of HIV/AIDS and RH information and that poor SASL proficiency, combined with the fact that the curriculum is designed for hearing-able learners, is disadvantaging the overall education of D/deaf learners. Participants expressed a real need for HIV/AIDS and RHE workshops and for greater provision of HIV/AIDS and RH information to LO teachers, other teachers and learners. A few participants communicated a poor sense of self-efficacy to teach HIV/AIDS and RH education to their learners, and expressed an attitude that allows one to question their ability to create a safe space for open and honest sexual discussion. Participants also expressed a wish for greater parental and community involvement in schools for the D/deaf. Lastly, a few participants mentioned how the placement of some D/deaf schools away from urban areas increases challenges for educators and can result in the incorrect school placement of D/deaf learners.

Conclusion

This chapter outlined the results of the quantitative analysis, with particular focus on meeting the study's objectives. Results of the qualitative analysis were also set out, with quotes to illustrate important themes. The results presented in this chapter are discussed and further explored in the final chapter.

CHAPTER FIVE

DISCUSSION

Introduction

In this chapter, the results from chapter four are discussed in light of the literature, theoretical framework and research objectives. A summary of the discussion is presented, with recommendations for future interventions and research. Lastly, limitations of the study are delineated.

The aim of this study was to investigate the form of HIV/AIDS and RH education in South African secondary schools for the D/deaf and the factors influencing teacher implementation thereof.

Demographic and Contextual Findings

Existence of a school HIV/AIDS policy

The vast majority of participants (93.5%) reported teaching in a school that has an HIV/AIDS policy. The National Education Policy Act of 1996 (no. 27 of 1996) was passed by the Department of Education to provide a mandate on HIV/AIDS for learners and educators in public schools and students and educators in further education and training institutions. The intentions of this policy were to prevent the spread of HIV, allay fears, reduce stigma and instill non-discriminatory attitudes. Mandates were set out regarding non-discrimination and equality in terms of HIV testing, admission of learners/appointment of educators, rights to attend any institution, disclosure of status and so forth. By law, all South African schools must follow the directives of this policy, and it thus encouraging that almost all participants were aware of their school HIV/AIDS policy. However 5.5% of participants reported teaching at schools that do not have an HIV policy, which is worrying. It is possible that these particular educators are not aware of the policy abided by their schools, but this in itself is problematic as it suggests that they are then not aware of the policy's important mandates.

Implementation of HIV/AIDS and RH education

No research has previously been conducted on HIV/AIDS and RH education in South African schools for the D/deaf. As such, it was not known whether HIV/AIDS and RHE was

even being implemented in these schools. As mentioned above, the present study's findings show that all of the schools in the study (16 secondary schools for the D/deaf) teach HIV/AIDS and RH education to their secondary school D/deaf learners. This is in line with the Department of Education's (2003a, 2003b) Curriculum Statements (Grades R-9 and Grades 10-12) which designate health promotion (healthy lifestyles, sexuality, HIV/AIDS and safety) as a learning area of the Life Orientation curriculum for Grades 8-12 learners. These coverage levels at secondary schools for the D/deaf are comparable to the coverage levels at mainstream (hearing) secondary schools; indeed, research conducted in South African (hearing) schools found that 90% of schools offered life-skills programmes as part of the school curriculum by 2001 (Population Council/Horizons, 2003a), and this percentage is likely to have increased in the last decade. Certainly, an HIV/AIDS programme developed for Grade 9 learners by the Population Council/Horizons (2003b) is now reportedly taught as part of the LO curriculum to Grade 9 learners at *all* (hearing) schools in South Africa. That coverage levels at secondary schools for the D/deaf are comparable to mainstream secondary schools in South Africa is an encouraging finding.

These high coverage levels, together with the participants' high mean score of 26 (out of a maximum of 34) on the 'perceived importance' scale, suggests that LO teachers at secondary schools for the D/deaf recognise the importance of HIV/AIDS and reproductive health education for D/deaf learners. These quantitative findings are supported by the qualitative results where participants discuss how D/deaf learners are exposed to HIV/AIDS in the community and also emphasise how vital it is that D/deaf learners are given access to HIV/AIDS and RH information. Although there is a paucity of research on HIV/AIDS and RHE in schools for the D/deaf, these findings actually seem to contradict the available literature. Indeed, available studies emphasise the existence of an asexual stereotype of the D/deaf, where individuals with disabilities (including sensory disabilities) are assumed to be sexually inactive and thus at low risk for HIV infection (Blumberg & Dickey, 2003; Gannon, 1998; Job, 2004). It is encouraging that LO teachers at South African secondary schools for the D/deaf do not seem to adhere to this stereotype, but seem instead to recognise the importance of HIV/AIDS and RHE for D/deaf youth. This may be related to the South African public's awareness of the generalised nature of the HIV/AIDS epidemic in SA and the related HIV vulnerability of the country's population.

Examination of learners on the HIV/AIDS and RH aspect of LO curriculum

This study found that 38.7% of the participants do not examine their learners on the HIV/AIDS and RH aspect of the LO curriculum. The Department of Education's (2003a, 2003b) Curriculum Statements (Grades R-9 and Grades 10-12) both specify that learners' performance in Life Orientation needs to be assessed. Assessment in LO is based on the principle of continuous assessment, a strategy that bases decisions about learning on a range of different assessment activities and events that happen at different times throughout the learning process. It thus involves assessment activities that are spread throughout the year, using tests, examinations, projects and assignments. According to the DOE's Curriculum Statements (2003a, 2003b), assessment is a critical element of the curriculum as it is a means of determining learners' progress in learning and a means of making judgment about learners' performance. Given the necessity of assessment in LO, it is thus problematic that many of the participants do not examine their learners on the HIV/AIDS portion of the LO curriculum.

Sources of HIV/AIDS and RHE curriculum

The 'Life Skills HIV and AIDS Education for the South African Deaf Learner' programme was launched by SLED in 2004 by the Minister of Health, and since 2005 SLED has reportedly hosted training workshops aimed at empowering educators of D/deaf learners with the necessary skills to be able to use the programme (SLED, 2006). However, the present study found that only 9.4% of participants use the programme developed by SLED, only 11.1% of participants have received HIV/AIDS and RHE materials from SLED and only 6.1% have received HIV/AIDS training from SLED. As the current study represents LO teachers from 61.5% of South African secondary schools for the D/deaf, it is possible to conclude that there have been difficulties in the roll-out of the SLED programme and that the programme has been unable to reach as many educators as originally intended.

In the current study, only 9.4% of participants reported using the SLED HIV/AIDS programme targeted particularly for D/deaf learners, while the majority (84.4%) of participants reported using the Government School (LO) Curriculum. Research has shown that HIV/AIDS and RHE materials developed for the hearing population are inadequate in disseminating information to the D/deaf population (Gannon, 1998; Getch, Branca, Fitz-Gerald & Fitz-Gerald, 2001) and American research on HIV/AIDS education for D/deaf

youth has highlighted the necessity of including visual materials such as pictures, films, photographs, graphics, drawings, overhead projector presentations and highly tactile objects, as well as the use of D/deaf persons in these various materials (Getch et al., 2001; Winningham, Gore-Felton, Galletly, Seal et al., 2008). Given how inadequate mainstream HIV/AIDS programmes are for D/deaf learners, it is problematic that the majority of LO teachers use the mainstream Life Orientation curriculum to teach their learners, and problematic that the SLED programme has not been rolled out at its optimal level.

HIV/AIDS and RH education training

This study found that 25% of the participants had not received training to teach HIV/AIDS and RHE. The number of LO teachers not trained in HIV/AIDS and RHE seems to be higher in D/deaf schools, as research conducted in South African (hearing) schools found that only 10% of schools did not have trained teachers to conduct life-skills programmes (Brown et al., 2003). Qualitative findings echo the quantitative findings, with participants communicating a request for the Department of Education, NGOs, even the researcher, to involve their schools in HIV/AIDS programmes and to provide learners and teachers (especially LO teachers) with more information about HIV/AIDS; the participants' call for workshops, programmes and information suggests that their has been inadequate provision of programmes and teacher-training to date. The role of the teacher is critical for the success of school-based RHE and for a programme to be faithfully implemented teachers must be properly trained for, and committed to, the programme (Gallant & Maticka-Tyndale, 2003). It is thus problematic that a large percentage of LO teachers have not received HIV/AIDS and RHE training. Indeed, training of teachers at schools for the D/deaf is particularly pertinent due to the communication barriers that hinder D/deaf learners from gaining important information from parents and other spheres (Getch et al., 2001); qualitative findings echoed this literature as LO teachers recognised their essential role in disseminating information to D/deaf youth due to existing information channels being inadequate for the D/deaf.

One of the themes observed in the qualitative findings seems to highlight a lack of understanding and knowledge among a few participants, which could be linked to a lack of HIV/AIDS and RHE training or to inadequate training. Indeed, a moralistic undertone linking HIV infection to poor discipline among adolescents and promiscuous dress by girls was communicated by two of the participants. This suggests that there may be a lack of understanding regarding the complex contextual variables that play a role in the HIV/AIDS

pandemic. Such a moralistic viewpoint is problematic in numerous ways; indeed, discourses revolving around morality-implemented by religion, culture, parents and schools- hinder open dialogue and discussion (Posel, 2004). Also, these discourses are actually counterproductive to HIV/AIDS prevention as they can result in a belief that if sexual intercourse (before marriage) is morally wrong, then so is planning for it (Moore & Rosenthal, 1993). That some LO teachers in South African secondary schools for the D/deaf may adhere to such moralistic beliefs is thus extremely problematic.

Proportion of HIV/AIDS and RHE in the LO curriculum

Findings show that 74.2% of participants use 0-40% of the LO curriculum for HIV/AIDS and RHE and that 25.8% of participants use 41-100% of the LO curriculum for HIV/AIDS and RHE. According to the Revised National Curriculum Statement for Grades R-9 (Department of Education, 2003a), 15% of the Grade 8 and 9 LO curriculum should be used to teach health promotion (healthy lifestyles, sexuality, HIV/AIDS and safety); however, the National Curriculum Statement for Grades 10-12 does not in fact specify any curriculum weightings. Given the nature of the categories provided to participants in the questionnaire and the lack of specified weightings in the NCS for Grades 10-12, it is not actually possible to comment conclusively on whether the participants adhere to recommended weightings or not. However, as 25.8% of participants report using 41-100% of the LO curriculum for HIV/AIDS and RH education, it is possible to suggest that a number of LO teachers actually allocate a greater portion of HIV/AIDS and RHE to the LO curriculum that than mandated by the DOE. For educators to have clear guidelines regarding the LO curriculum, it is important that they are informed regarding the recommended weightings of LO focus areas, and that the NCS for Grades 10-12 is revised so as to include recommended weightings for older learners.

Hearing status and SASL proficiency

As related to HIV/AIDS and RH education

This study found that 60% of the participants were hearing, that only 12.1% reported excellent proficiency in SASL and that the most common mode of communication with their D/deaf learners was a combination of SASL, SEE and speech (48.5%). These findings are confusing as one would assume that if 36.7% of the sample is D/deaf then approximately the same proportion would have excellent proficiency in SASL; however, this was not reflected in the study's findings. Despite an uncertainty surrounding the meaning of these figures, what

they seem to show overall is that proficiency in, and comfort with, SASL is unacceptably low among LO teachers. Qualitative findings were certainly in line with these quantitative findings as participants mentioned having only basic skills in sign language and needing workshops to be taught signs for HIV/AIDS-related terminology. Both quantitative and qualitative findings are in line with research from the US which found that the majority of teachers at D/deaf schools are in fact hearing and do not possess the competence to teach in natural sign language (Simms & Thurman, 2007) and with research from Africa which found that teachers of the D/deaf are generally hearing and lack the appropriate training and certification in sign language (Kiyaga & Moores, 2003). The needs of D/deaf learners can only be met if HIV/AIDS and RH classes are conducted in sign language (Gannon, 1998; Getch et al., 2001) as the transfer of correct and comprehensive HIV/AIDS information can only take place when educators ensure that the learners can fully understand what is being said (Gannon, 1998). The inadequate SASL proficiency of LO teachers in South African secondary schools for the D/deaf is thus extremely problematic and is in fact hindering optimal HIV/AIDS and RH education.

As related to the overall education of D/deaf learners

Poor teacher proficiency in SASL seems to not only hinder HIV/AIDS and RH education, but also to hamper the overall education of D/deaf learners. Indeed, qualitative findings have highlighted how D/deaf learners are placed at a disadvantage as a result of them not being taught in SASL and as a result of schools for the D/deaf following the mainstream curriculum where tests and exams are not conducted in sign language. International documents, including the Salamanca Statement (1994) and the World Federation of the Deaf (1995), together with local documents such as the South African Constitution (1996), the Integrated National Disability Strategy (1997) and the Education White Paper (2001) indicate clearly that natural sign languages (such as SASL) are to be considered the first language of choice for the D/deaf population and that they are to be the official language of teaching and learning in D/deaf schools (DeafSA, 2006). That teachers at South African secondary schools for the D/deaf do not teach in SASL is actually an infringement of these documents and policies. This infringement has devastating consequences for the education of D/deaf learners as research shows that D/deaf youth often leave school functionally illiterate and excluded from tertiary education and from many employment opportunities (DeafSA, 2006); qualitative

findings echo the literature as participants highlighted the difficulty that D/deaf learners have in obtaining high grades and in completing high school.

Theory of Planned Behaviour Constructs

Outcome beliefs

Perceived Importance

Teachers' perceived importance of HIV/AIDS and RH education for D/deaf learners was found to be significantly associated with the area in which teachers' schools were placed, with teachers from rural and peri-urban schools having a stronger belief (mean score of 30 out of a possible 34) in the importance of HIV/AIDS and RHE than teachers from urban schools (mean score of 24) and, lastly, teachers from schools in informal settlements (mean score of 16). As people living in rural areas and urban informal settlements seem to be highest at risk for HIV infection (Department of Health, 2006), it is problematic that LO teachers at secondary schools for the D/deaf in informal settlements do not regard HIV/AIDS and RHE to be of critical importance.

Subjective Norms

Motivation to comply

The study's findings showed that participants who reported teaching in schools *without* an HIV/AIDS policy were significantly *more* likely to comply with others' (teachers, parents, learners, for example) expectations of them, than those participants who reported teaching in schools *with* an HIV/AIDS policy. Although it is problematic that some participants seem unaware that all South African schools, in accordance with the National Education Policy Act of 1996, are mandated to have an HIV/AIDS policy (as previously discussed), these findings actually seems to be in line with Mathews et al.'s (2006) study. Mathews et al.'s (2006) Cape Town based study found that teacher implementation of HIV/AIDS education was not influenced by the perceived expectations of parents, teachers, learners or Governing Bodies; Mathews et al.'s (2006) findings contradicted the study upon which their research had been based, as Paulussen et al.'s (1994) Dutch study found that the implementation of HIV/AIDS education *was* influenced by the immediate (perceived) concerns of students, fellow educators and the school principal (ie., by participants' normative beliefs). Mathews et al. (2006) used the very different socio-political contexts of South Africa versus the Netherlands

to explain the discrepancy in findings. Indeed, they posited that as Dutch teachers have a greater degree of autonomy in deciding whether or not to implement HIV/AIDS education, as opposed to being dictated by policies and mandates, their decisions were very much influenced by the perceived expectations of learners, parents and so forth. As South African teachers are very much governed by directives from government mandates (such as the Department of Education), they are more responsive to these directives and less responsive to the expectations of others (such as learners, parents, teachers etcetera).This understanding could certainly be used to explain the current study's findings. Indeed, educators in schools with an HIV policy are more likely to be guided by that policy than by a wish to comply with teachers/ parents/learners expectations of them; educators teaching in schools without an HIV/AIDS policy (or in schools where the policy is implemented to such a lax degree that teachers are unaware of it) are influenced to a much greater degree by the perceived expectations of parents/learners/teachers/governing bodies.

Self-efficacy

Self-efficacy as related to the receipt of HIV/AIDS and RHE training

Interestingly, teachers who received HIV/AIDS and RHE training were found to have significantly *lower* perceived self-efficacy to implement certain HIV/AIDS and RHE techniques and processes, than teachers who had not received HIV/AIDS and RHE training ($p < .05$). If teachers who have received HIV/AIDS and RHE training have significantly lower perceived self-efficacy to implement HIV/AIDS and RHE than those who have not received training, it suggests that there may be a problem with the training that LO teachers at secondary schools for the D/deaf are receiving. As this study has found that only a very small minority (10.2%) of the participants have received HIV/AIDS and RHE training specifically for the education of D/deaf learners (ie. from SLED and DeafSA), while the majority has received the same HIV/AIDS and RHE training as given to teachers at mainstream (hearing) schools, it seems that the problem may lie with the fact that exposure to HIV/AIDS and RHE training designed for teachers with hearing-able learners actually has a *negative* effect on teachers of D/deaf learners, such that they consequently feel a lack of confidence in their ability to implement HIV/AIDS and RHE techniques and processes with their D/deaf learners. These findings suggest that HIV/AIDS and RHE training for teachers at schools for the D/deaf needs to be *specifically designed* to enhance teachers' capabilities and self-efficacy to educate *their D/deaf learners*. This again serves to highlight the importance of

rolling out the SLED programme to LO teachers at all secondary schools for the D/deaf, so that these teachers can be trained to educate their *D/deaf* learners in HIV/AIDS and RHE; it is hypothesised that the provision of a training programme tailored to the needs of LO teachers at schools for the D/deaf would then serve to increase their self-efficacy to implement HIV/AIDS and RHE to their learners.

Self-efficacy as related to SASL proficiency

In the current study, teachers who reported having excellent SASL proficiency were found to have a significantly higher perceived self-efficacy to teach HIV/AIDS and RHE than those who reported having good or basic skills ($p < .05$). This is in line with qualitative findings where teachers spoke about being reluctant to discuss HIV/AIDS and RH issues with learners due to their lack of sign language training and certification. No international or local studies have focused specifically on the relationship between (natural) sign language proficiency and teacher self-efficacy to implement HIV/AIDS and RHE, however, a number of international studies have highlighted how poor (natural) sign language proficiency can act as a barrier to the effective dissemination of HIV/AIDS and sexuality education (Fitzgerald & Fitzgerald, 1978; Gannon, 1998; Getch et al., 2001).

Self-efficacy as related to the existence of a school HIV/AIDS policy

Participants who reported teaching in schools with an HIV/AIDS policy were found to have significantly higher perceived self-efficacy to adapt an HIV/AIDS and RH curriculum to make it relevant for learners ($p< .05$). It is challenging to explain this particular finding as no previous research (local or international) has investigated the relationship between the existence of an HIV/AIDS policy in schools for the D/deaf and perceived self-efficacy to adapt HIV/AIDS and RH curricula. However, this finding may relate to the very characteristics of the policy itself, which may incorporate guidelines pertaining to the learning that should take place, thus enabling schools with an HIV/AIDS policy to adapt the curriculum accordingly.

School climate

School climate as related to proportion of HIV/AIDS and RHE in the LO curriculum

Findings of the study also showed that certain school climate constructs were positively associated with the proportion of HIV/AIDS and RHE taught in the LO curriculum. In particular, the beliefs that school decisions are made collaboratively, that the school principal is a constructive presence and that the school's conditions are favourable, were significantly related to teaching a greater proportion of HIV/AIDS and RHE in Life Orientation. Mathews et al.'s (2006) study, focusing on the implementation of HIV/AIDS education in (hearing) secondary schools in Cape Town, found school climate (specifically, equity and fairness and good school-community relations) to be a significant factor. School climate has also been found to be a significant factor by research in other health domains; for example, school climate has been associated with the number of hours educators taught a cardiovascular health promotion programme (Parcel, Perry, Kelder, Elder et al., 2003). These studies concluded that their findings showed how important it is that health programmes do not simply focus on the discrete health problem at hand, but also focus on the broader contextual environment. One could suggest that the current studies findings also point to the fact that the broader contextual school environment significantly affects the proportion of HIV/AIDS and RHE taught, and that it is thus imperative that efforts are made to ensure that teachers feel that they are an important part of the school decision-making process, that they are able to feel safe at school and that they are able to see the principal as a positive force in the school. Indeed, one could conclude that proportion of HIV/AIDS and RHE taught in the LO curriculum is not simply influenced by the mandated weightings of the NCS policies, but by contextual school factors as well. However, this study cannot comment conclusively on the meaning of these findings, as it is not known if participants who taught Grade 8 or 9 (with a 15% mandated weighting) answered significantly differently from participants who taught Grades 10-12 (with no mandated weightings); this is a confounding variable which may have skewed the findings and, as such, no conclusions regarding the significance of school climate as related to proportion of HIV/AIDS and RHE can be drawn.

School climate as related to additional demographic variables

The study also found a number of significant associations between school climate subscales and particular demographic variables. Indeed, 1) participants who reported teaching in schools with an HIV/AIDS policy were found to have a greater belief in the dedication of

school staff to learners' development 2) participants who reported teaching in schools with an HIV/AIDS policy were found to have a greater belief in the ability of learners 3) participants with better SASL proficiency were found to have a greater belief that school decisions were made collaboratively 4) hearing participants were found to have a greater belief that the school treats learners fairly and equally and 5) hearing participants were found to have a greater belief that learners are disciplined. It is challenging to explain these findings as no previous research has focused on the relationship between these particular variables.

Summary of Discussion

From the results of the study, it is evident that HIV/AIDS and RH education *is* being implemented at South African secondary schools for the D/deaf and that, overall, the LO teachers at these schools recognise the importance of HIV/AIDS and RHE for their D/deaf learners. Despite high coverage levels there are a number of obstacles hindering the optimum implementation of HIV/AIDS and RHE: 1) lack of learner assessment regarding the HIV/AIDS and RHE portion of the LO curriculum 2) unclear policy mandates regarding the weighting of HIV/AIDS and RHE in the LO curriculum 3) inadequate teacher proficiency in SASL 4) the use of a mainstream LO curriculum that was not specifically developed for D/deaf learners 5) the moralistic viewpoints of certain teachers 6) problems with teacher access to HIV/AIDS and RHE training (indeed, not all LO teachers have received training and those that have received training seem to have actually been *negatively* affected by it as for the majority the training programmes received have not been developed specifically for educators of D/deaf learners, but instead are developed for teachers of hearing learners). Although it was not the intention of the study to evaluate the overall education of D/deaf learners, findings have also highlighted the major dilemmas characterising the education of D/deaf learners at South African schools for the D/deaf; indeed, as the constitutional right of D/deaf learners to learn in their first language (SASL) is not being recognised and they are being forced to follow a curriculum developed for *hearing* pupils, their academic potential is being constrained and their possibility for successful futures is being impinged.

The study also found a number of important findings related to TPB constructs: 1) teachers at schools placed in informal settlements have a lowered understanding of the importance of HIV/AIDS and RHE and 2) excellent SASL proficiency is positively associated with higher perceived self-efficacy to implement HIV/AIDS and RHE techniques 3) teachers receiving

HIV/AIDS and RHE training have significantly lower self-efficacy to implement certain HIV/AIDS and RHE techniques and processes.

Recommendations

For future research

- Given the small number of secondary schools for the D/deaf in South Africa, it is unlikely that a quantitative design would be adequate to enhance understanding of the factors influencing teacher implementation of HIV/AIDS and RHE or of the needs of LO teachers in secondary schools for the D/deaf. Given the important themes that arose from the small qualitative portion of this study, it is likely that a qualitative design would elicit a great deal of meaningful information. It is thus recommended that future studies in this area use focus groups and in-depth interviews so as to increase the amount of meaningful material garnered.
- Given the extensive literature supporting the introduction of HIV/AIDS and RH education at a primary school level (Gaskins et al., 2002; Gillian et al., 2001; James et al., 2006; Klepp et al., 1997; Maypole et al., 1998; Shuey et al., 1999), it is also important to gain information about the implementation of HIV/AIDS and RH education at South African primary schools for the D/deaf and about factors affecting primary school teachers' implementation of HIV/AIDS and RHE. It is thus recommended that future research use both quantitative and qualitative design components to gain a better understanding of HIV/AIDS and RH education at South African primary schools for the D/deaf.
- The current study serves to highlight exactly how important it is that extensive research be conducted on the SLED programme. Given that mainstream HIV/AIDS and RHE training programmes are having *negative* effects on teachers of D/deaf learners, it is imperative that the impact of the SLED programme is investigated and that any pitfalls in the programme are resolved so that the this programme can be rolled-out at a national level to LO teachers at all secondary schools for the D/deaf.

For future interventions

- It is imperative that the SLED programme is investigated, improved and rolled out nationally, as previously mentioned.

- Inadequate SASL proficiency is hindering optimum implementation of HIV/AIDS and RH education at secondary schools for the D/deaf and is also seriously hampering the *overall* education of these learners. The rights of D/deaf learners to be able to learn in their natural sign language is writ in numerous international and local mandates, yet in South Africa policy has not yet been put into practice and it is imperative that this crisis is redressed. This can be done at a tertiary level such that SASL would be a 4-year compulsory module for Bachelor of Education students thinking of pursuing a career in teaching at schools for the D/deaf. Teachers who do not have such experience and proficiency in SASL will then not be permitted to teach in schools for the D/deaf.
- A process of adaptation and modification needs to begin whereby the mainstream NCS curriculum currently being implemented at secondary schools for the D/deaf is amended to meet the needs of D/deaf learners. The input from teachers at schools for the D/deaf would be crucial here.
- The National Curriculum Statement for Grades 10-12 (DOE, 2003b) needs to be revised to include recommended weightings for each LO focus area. This would provide clearer guidance to LO teachers.

Limitations of the Study

- Although great effort was made to obtain data from all South African secondary schools for the D/deaf, the final sample actually represented only 61.5% of schools. It is difficult to generalise findings to all South African secondary schools for the D/deaf as no data was received from schools in the Northern Cape, Limpopo or the North-West Province. This is problematic as the findings of this study may thus not represent HIV/AIDS and RH education in these provinces. Indeed, while the study shows 100% HIV/AIDS and RHE coverage in the sample schools, telephonic conversations with school principals at two secondary schools for the D/deaf elicited that they do not in fact have LO teachers or teach HIV/AIDS and RH education to their D/deaf learners; as questionnaires were not returned from these two schools, findings do not represent this important information.
- As all the schools in the sample implemented HIV/AIDS and RHE, the intended dependent variable had to fall away and as a result the study's hypotheses could not be tested.

- The small sample size may result in lack of precision.
- As data was collected through the self-reporting of participants, there exists a possibility of information bias: social desirability responding may have influenced responses, and different respondents may have interpreted questions differently.

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Appendix A: Letter of support from DeafSA

Appendix B: Letter of approval from GDE

Appendix C: Ethical clearance from UKZN's Research and Ethics Committee

Appendix D: Informed consent form

Appendix E: Questionnaire