

Developing teacher self-efficacy via a formal HIV/AIDS intervention

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Abstract

This study investigated the effects of a HIV/AIDS module on teachers' sense of self-efficacy regarding their ability to bring about behaviours in their learners which contribute to responsible living and a reduction of the spread of HIV in their communities. The sample was 128 in-service teachers studying in nine different centres in three South African provinces in their second year of a part-time degree in education. A modified Science Teaching Efficacy Belief Instrument (STEBI) was used to generate quantitative data, while semi-structured individual and focus group interviews provided qualitative data. Statistical analyses (ANOVA and MANOVA) revealed statistically significant differences between the participants pre- and post-test self-efficacy scores. Interview data suggested that improved confidence enabled the teachers to gain a better understanding of cultural barriers to HIV/AIDS education and the impediments to developing an effective HIV/AIDS policy in their schools. The study also highlighted the importance of leadership from school management for the successful adoption and implementation of an effective HIV/AIDS policy in schools. Enhanced confidence is noted as a motivating factor for teacher participation in community efforts to support those affected by HIV/AIDS.

Keywords: *Self-efficacy, teachers, HIV/AIDS module, changing behaviour.*

Résumé

Cette étude a examiné les effets d'un module VIH/SIDA sur le sentiment d'efficacité personnelle des enseignants. Elle s'est intéressée à la capacité des enseignants à provoquer des changements de comportements chez leurs élèves, ce qui est essentiel pour que ceux-ci vivent de manière responsable et que cela contribue à une diminution de la propagation du VIH dans leurs communautés. L'échantillon était composé de 128 enseignants alors en formation continue dans neuf centres différents situés dans trois provinces sud-africaines. Etudiant à temps partiel, ces enseignants étaient dans leur deuxième année de cursus pour obtenir un diplôme d'enseignement. Partiellement modifié, l'outil dénommé Science Teaching Efficacy Belief Instrument (STEBI) a été utilisé pour produire des données quantitatives, tandis que des entretiens semi-structurés individuels et en groupe ont fourni des données qualitatives. Les analyses statistiques (ANOVA et MANOVA) ont révélé des différences statistiquement significatives entre les scores des participants aux tests de sentiment d'efficacité personnelle réalisés avant la mise en place du module VIH/SIDA et ceux réalisés après. Les données extraites des entretiens ont suggéré qu'une plus grande confiance en soi a permis aux enseignants d'avoir une meilleure compréhension d'une part, des barrières culturelles s'élevant lors des discussions en classe sur le VIH/SIDA, et d'autre part, des obstacles au développement d'une politique efficace sur le VIH/SIDA dans leurs écoles. L'étude souligne également l'importance des qualités de leadership de l'équipe dirigeante pour l'adoption et la mise en œuvre avec succès d'une politique VIH/SIDA dans les écoles. Augmenter la confiance en soi apparaît enfin comme un facteur de motivation en termes de participation de l'enseignant aux efforts communautaires visant à soutenir les personnes touchées par le VIH/SIDA.

Mots clés: *sentiment d'efficacité personnelle, enseignants, module sur le VIH/SIDA, changement de comportement.*

Introduction

Researchers such as Vandemoortele and Delamonica (2000) feel that education has the potential to influence family and community environments and promote socially acceptable behavioural change. The South African Department of Education, via its policy documents, has high expectations of its educators in this regard (Department of Education, 2000; 2002a, b). Psychological research (Bandura, 1997, 1986; Milson, 2003) suggests that teachers with a strong sense of self-efficacy are more likely to have an impact on the behaviour of their learners than those with a low sense of self-efficacy. Self-efficacy refers to an individual's belief in his or her ability to act in a manner that will produce desired outcomes (Bandura, 1997). In other

words, it involves one's sense of competence in a given situation (Milson, 2003). In this study the effect of a module designed for in-service teachers, which focused explicitly on the nature of HIV and AIDS, and developing viable policies related to the pandemic in schools, was investigated. In particular it explored the effect of the module's impact on teacher's sense of self-efficacy towards bringing about behaviours which contribute to responsible living and reduction of the spread of HIV in their communities.

Background

The South African government's strategy to meet the challenges of the high prevalence of HIV/AIDS focuses on prevention by promoting public awareness and delivering life skills and

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HIV/AIDS education (HIV/AIDS in South Africa, 2007). The Department of Education has instructed schools to work towards developing a practical HIV and AIDS policy for the entire school community. Guideline documents have been made available to assist in the development of such policies, and literature has been published to provide support to parents (Department of Education, 2003a), school governing bodies (Department of Education, 2003b), and provincial and district managers (Department of Education, 2003c). Similarly, the new curriculum statements for South African schools demand that educators develop HIV/AIDS awareness amongst learners, and guide them towards responsible behaviour (Department of Education, 2002b; 2003b, c).

The National Curriculum Statement for Life Orientation addresses health promotion issues including HIV/AIDS and describes the need for young learners to be given guidance to make informed decisions regarding personal health (Department of Education, 2002b). Sexuality education is introduced in the Intermediate phase (grades 4 to 6), and Senior Phase (grades 7 to 9) learners are challenged to plan strategies for living with diseases, including HIV infection and AIDS (Department of Education, 2002b). Teachers are required to assist them to evaluate resources on health information, health services and a range of treatment options (Department of Education, 2002b).

HIV and AIDS education is also included in the Natural Sciences curriculum (Grades 7 to 9), where emphasis is on prevention of sexually transmitted diseases (STDs). The programme in these grades also includes guidance for responsible behaviour choices (Department of Education, 2002a). HIV and AIDS education in the Life Sciences curriculum for Grades 10 to 12 requires learners to examine the impact of the pandemic on society, report on the impact of AIDS on the lifestyle of peers, and compare the use of modern medicines in treating AIDS (Department of Education, 2003d).

These curriculum imperatives clearly indicate that educators across the school spectrum are expected to play a major role in health education in general and HIV/AIDS education in particular. If, as Bandura (1997) proposes, these expectations will only be met by individuals who have a high degree of self-efficacy in the field, HIV/AIDS education for teachers becomes an issue of major import. As such, this study investigated changes in the self-efficacy of teachers who participated in a semester long, credit-bearing module on HIV/AIDS.

Self-efficacy

Bandura's research in the field of social learning and personality development introduced the notion of self-efficacy, which he defined as "people's beliefs about their capabilities to produce designated levels of performance that exercise influence over events that affect their lives" (Bandura, 1994, p. 1). Individuals with high self-efficacy believe that they have the power to influence and even control their environment, while people with low self-efficacy believe that failure is a result of low ability (Peeler & Jane, 2006). Efficacious teachers believe that they can influence children's lives (Gibbs, 2002). Teachers who have high self-efficacy tend to take

more risks with the curriculum and use new teaching approaches. They also usually have more motivated students (Gibbs, 2002). Thus, high self-efficacy has been associated with successful teaching (Andersen, Dragsted, Evans & Sorensen, 2004). The concept is however context specific (Bandura, 1994) and subject-matter related (Tschannen-Moran, Woolfolk Hoy & Hoy, 1998). In other words, a teacher may have a high self-efficacy for one task or in one area of study but a low self-efficacy for another (El-Deghaidy, 2006). As such, teacher training programmes should be geared towards providing authentic experiences to teach them what to do (raise competence) and also how to do it well in a variety of contexts (Pajares & Schunk, 2001).

There are no African studies on changes in teacher self-efficacy as a result of a specific intervention course in HIV/AIDS, but numerous researchers have shown the general link between teachers' sense of self-efficacy and learner achievement (Armor et al., 1976; Ashton & Webb, 1986; Moore & Esselman, 1992; Ross, 1992). Also, there are many reports of interventions that have led to an improvement in teenagers' self-efficacy with regard to responsible sexual behaviour (Lawrence, Levy & Rubinson, 1990; Walter & Vaughan, 1993; Weeks, Levy, Zhu, Perhats, Handler & Flay, 1995). Family Health International (2005) in the United States has shown improved self-efficacy increases the ability of teenagers to refuse unwanted sex and to demand condom use when sex is desired.

Rationale for the study

Prior to 1998 the response to HIV/AIDS in South Africa was mainly restricted to the health sector. Since then, other government departments have come on board in the fight against HIV/AIDS, notably the Department of Education. The main aim of educational prevention strategies is to ensure that the youth of South Africa have the information available to them to be able to make informed choices about their sexual behaviour (Simelela, 2002). Since 2007 government funding has been pledged and teacher training had been selected as a special focus for HIV/AIDS curriculum and skills development (Human Sciences Research Council, 2009)

If these programmes are to be implemented effectively teachers need to be empowered, trained and supported to meet the requirements of the adapted curricula and new didactic material (Programme for HIV and AIDS education, 2006). However, recent evaluations of HIV prevention education in South African schools highlight a number of shortcomings (UNESCO, 2005). Within already crowded curricula, HIV/AIDS education gets little or no attention; when it is in the curriculum, HIV/AIDS is not covered comprehensively; teaching and learning material is poor or not available; and, most importantly, teachers are not adequately trained or supported to provide effective HIV prevention education (UNESCO, 2005).

In the light of these shortcomings, an investigation into the effect of a particular HIV/AIDS 'stand-alone' module was undertaken to assess its influence on the self-efficacy of senior-phase teachers. This study does not interrogate the curricular appropriateness of

the module, but is primarily an attempt to contribute to the debate around improving teacher self-efficacy for reducing HIV infection rates and promoting responsible living.

Methods

A modified Science Teaching Efficacy Belief Instrument (STEBI) was used to generate quantitative data that were analysed statistically. Semi-structured interviews were used to probe issues highlighted by the statistical treatment of the quantitative data and to further interrogate the participants' perceptions.

Sample and setting

The sample was a convenience sample of all 128 Nelson Mandela Metropolitan University students (in-service teachers) in their second year of a BEd degree focusing on mathematics and science. Most of the participants were Senior Phase teachers, with the minority being Intermediate Phase or Further Education and Training teachers. The students live, work and study in nine different centres in three provinces, namely in the urban areas of Port Elizabeth and George; in the semi-rural areas of King Williamstown, Queenstown, Mthatha, Isipingo and Kokstad; and in the rural areas around Ngcobo and Lusikisiki.

The intervention programme in which all students took part was a module in HIV/AIDS education which forms an examinable part of the curriculum of the BEd degree. The lectures took place in all nine centres, and the same lectures were presented by a different lecturer in each centre. The outcomes of the module include dealing with misconceptions around transmission and treatment of HIV infection, developing skills to help people live positively with the AIDS pandemic, and working with students from similar school backgrounds to develop a suitable HIV/AIDS policy for their school.

Data collection instruments

The questionnaire used was based on the Enochs and Riggs (1990) Science Teaching Efficacy Belief Instrument (STEBI). The original wording of the STEBI instrument was altered to collect information of teacher self-efficacy regarding HIV/AIDS. The questionnaire has a five point Likert-scale with responses ranging from 'strongly agree' (SA) to 'strongly disagree' (SD) (See Appendix A). Semi-structured interviews were used because they allow for two-way conversation and discussion on a focused topic. Individual interviews were undertaken in two centres, while four teachers were interviewed in a focus group in the third.

Data collection

Students completed the self-efficacy questionnaire before the first lecture of the module commenced. Although the students were informed about the fact that the data were being collected for purposes of research, no discussion about the content of the module was held prior to students completing the questionnaire. The students completed the same self-efficacy questionnaire after the last lecture of the module at the end of the semester. Each lecturer administered the questionnaire at his/her own centre.

Interviews (n=12) were held by one researcher in three of the nine centres, mostly because of geographical convenience. The interviewees were chosen to represent a variety of backgrounds,

and in each centre these varied from students who were actively involved in their communities to reduce the spread of HIV infection, to those who lived in a community in which there was little or no mention of the AIDS pandemic. Individual semi-structured interviews were conducted in two centres, namely George and King William's Town. At the Port Elizabeth centre a semi-structured focus group interview was conducted with four participants in order to test whether the group responded differently from the individual interviews, but no differences were found and the data were pooled. Equal numbers of male and female teacher volunteers were chosen as interviewees based on the first two males and females who volunteered in each case. All interviews were audio-taped and recorded verbatim. The duration of each interview was ten to fifteen minutes.

Data analysis

The 18 items on the questionnaire were grouped so as to provide data regarding four different aspects of the participating teachers' self-efficacy. Each different aspect was calculated as an average of the scores on the 1 - 5-point scale, where 5 represented a strongly efficacious response. Where the questions were phrased negatively, the numerical values were reversed for statistical analyses. The four topics were:

- Teachers' understandings of HIV/AIDS
- Teachers' ability to help learners to develop skills to cope in a society affected by the AIDS pandemic
- Teachers' ability to develop and implement an HIV/AIDS policy at their school
- Teachers' role in the community as an HIV/AIDS educator.

Data from the questionnaires were statistically analysed using Analysis of Variance (ANOVA) and Multivariate Analysis of Variance (MANOVA) techniques, in order to investigate changes in teacher efficacy over the semester period. The data from the interviews were transcribed, analysed and trends identified.

Issues of reliability and validity

Several researchers have used the STEBI instrument to measure teacher self-efficacy, and the robustness of the instrument in a variety of contexts and with a number of modifications has been proved (Bleicher, 2004). This study used a modification of the STEBI instrument in order to collect data about teacher efficacy in a HIV and AIDS context. The validity of the data thus rests on the initial validity of the instrument developed by Enochs and Riggs (1990). Reliability of the questionnaire data was calculated using Cronbach α .

Ethical considerations

The participants were advised of the aims of the research before they completed the pre-intervention questionnaire. They were verbally assured of confidentiality when revealing information and the questionnaires were completed anonymously, i.e., without names or any other identification codes. The fact that the pre- and post-questionnaires could not be matched meant that the statistical analyses were less powerful, nevertheless statistically significant changes in group efficacy were still evident. The teachers had the right not to participate or to withdraw from the research at any time. They were told that they would be informed of the outcomes of the research and this was done at the end of the

project. The standard ethics clearance for research was obtained from the NMMU Education Faculty Human Ethics Committee.

Results

There was a 100% response rate to the questionnaires. The overall self-efficacy mean scores, as well as each of the self-efficacy groupings, increased statistically significantly from the pre- and post- intervention administration of the self-efficacy questionnaire. These increases are shown in Table 1.

The Cronbach α scores indicate a high level of reliability of the data generated, the p values were highly significant statistically, and the Cohen's d scores indicate that the effect size was large in all cases (0.2-0.5 = small effect; 0.5-0.8 = medium; ≥ 0.8 = large). Cronbach α is an unbiased estimator of reliability and is most appropriately used when the items measure different substantive areas within a single construct (as in this case). Effect size helps to determine whether a statistically significant difference is a difference of practical significance, i.e. a difference that is spread throughout the group, rather than by one or two large changes within the group.

The data generated were further treated statistically using multivariate analysis of variance (MANOVA), which is an extension of analysis of variance (ANOVA) methods to cover cases where there is more than one dependent variable and where the dependent variables cannot simply be combined. As well as identifying whether changes in the independent variables have a significant effect on the dependent variables, the technique also seeks to identify the interactions among the independent variables and the association between dependent variables, if any. The data regarding the effect of lecturers on the changes mean scores are presented in Table 2, which indicates that the effect of the lecturers was only of statistical significance for the respondents' perceptions of their knowledge of HIV and AIDS.

Data from the interviews with the 12 students suggest that cultural barriers inhibited not only HIV/AIDS education, but also the introduction of age-appropriate sexuality education. The data also suggests improved confidence in a number of areas as a consequence of participation in the intervention module. The interviewees generally felt that the development of an AIDS policy for schools was a relevant and enlightening exercise, which prompted them to become more involved in AIDS education and care giving at community level. The trends described above are discussed in more detail below.

Cultural barriers to HIV/AIDS education

A recurring theme in the responses of the interviewees was that cultural values inhibited appropriate delivery of part of the Life Orientation curriculum. Some interviewees stated that one of the barriers to teaching sexuality and HIV/AIDS education was the fear of criticism by parents, as many felt that "it is not in our culture". Two of the teachers explained that sexuality education was only introduced in Grade 7 at their schools. One teacher also mentioned that sexual reproduction was not properly taught in Grade 9. That meant that if a learner did not take Life Sciences as an FET (Further Education and Training) subject, he or she was unlikely to cover this topic at all. Three male teachers noted that many males felt uncomfortable teaching sexual health issues, and pointed out that it was not permissible in Xhosa culture to discuss the issue of circumcision in the presence of girls or women.

Improved confidence

Numerous participants noted that they felt much more confident to answer questions on issues relating to AIDS than they were before the intervention. This was largely as a result of correcting their misconceptions about transmission of HIV. Some teachers had tried new activities in class, using material from the module. They reported that they were able to replicate activities such as role play and group work in their classrooms. The students

Table 1. Self-efficacy mean scores in the pre- and post-tests (n=128) with statistics on reliability (Cronbach α), statistical significance (t-test p), and effect size (Cohen's d)

Self-efficacy grouping	Mean scores			Cronbach α	p	Cohen's d
	Pre-	Post-	Change			
Knowledge of HIV/AIDS	3.17	4.03	0.86	0.80	0.000	1.39
Help learners cope	3.31	4.21	0.90	0.77	0.000	1.66
Help colleagues	3.35	4.17	0.82	0.84	0.000	1.30
Play role in community	3.27	4.25	0.98	0.84	0.000	1.68
Overall	3.27	4.16	0.89	0.93	0.000	1.75

Table 2. Statistical significance (p scores) of different lecturers regarding the changes in mean scores on the pre- and post-test questionnaire for each grouping and overall change (n=128)

Grouping	Change in mean score	F score	p value
Knowledge of HIV/AIDS	0.86	3.40	0.001*
Help learners cope	0.90	0.78	0.622
Help colleagues	0.82	1.26	0.263
Play role in community	0.98	1.43	0.183
Overall	0.89	2.28	0.000*

* Statistically significant at greater than the 99% level of confidence; degrees of freedom (df) is 8 for each grouping except for the overall combination of groups where it is 32.

who had never learnt about the biomedical side of HIV and AIDS were most appreciative that this topic was covered before the policy development work was introduced. Finally, most of the interviewees felt that they were better equipped to support learners and colleagues, saying that they had learnt what to do in order to help vulnerable people.

Respect

Some of the students interviewed reported that they felt both more respected by their colleagues as a result of their new knowledge and that they had learnt to discriminate less against those affected or infected by HIV and AIDS. Discussions with members of their class helped some of them to be more accepting of HIV+ people, and also resulted in greater awareness of the difficult situations of others. Furthermore, the assignment, in which the students were required to explore the work of a caregiver, prompted greater respect for those who look after AIDS sufferers. They explained that during one of the units of the module they had learnt how to identify vulnerable learners, and that they now had a feeling of greater responsibility towards them. The interviewees also recognised the need to support older people who look after extended family members are affected by the pandemic.

AIDS policy development for schools

The interviewees indicated that they recognised the need for an AIDS policy at schools. This was noted particularly by teachers who came from schools where no HIV/AIDS policy was in place. Furthermore, the respondents acknowledged the value of the Department of Education's policy development document which they had consulted during the module. In contrast, they felt that the training in HIV/AIDS policy development and the teaching of Life Orientation provided by the Department of Education was inadequate, and noted that there had been no follow-up since they had received initial training in 2002. While some participants indicated that they felt respected as role players in HIV/AIDS policy development at school, they emphasised the need for support from principals and school management teams in this regard. Some respondents pointed out that AIDS was "not a priority" in their schools.

Involvement in community

A number of interviewees reported that their enhanced confidence had motivated them to get involved in community efforts to support those affected by HIV/AIDS. Their motivation was often a result of talking to other students in their class. Examples of the type of work that the students were keen to do (or were already doing) are as follows: working in soup kitchens; running skills workshops for learners during holidays; working at AIDS havens looking after babies; participating in (or starting) support groups for people infected or affected by HIV/AIDS; visiting the elderly who were sick; and providing support for orphans in the community.

Discussion

The p-values and other statistics (Cronbach α ; Cohen's d) provide highly motivated data regarding probability and reliability, and suggest that the improvement in self-efficacy of the participants is most probably attributable to the intervention strategy, i.e. the HIV/AIDS module that was introduced. The data reveal that the self-efficacy of the teachers improved in all four categories

examined in this study and the Cohen's d scores indicate that the improvement in self-efficacy is significant in real terms (effect size) for the group as a whole.

Although the data indicate that the lecturer played a significant role in improving the self-efficacy of the participants, it is only in the area of knowledge of HIV and AIDS where this was statistically significant. As about half of the module focused on the biomedical issues of HIV/AIDS, it is likely that students who had not dealt with the latter topics in previous studies would have relied on the lecturer to help them master the content of this part of the module. This inference is supported by the fact that a classroom exercise on the topic of transmission of HIV revealed that many students held numerous misconceptions relating to the issue of unprotected sex.

The mean change in self-efficacy with reference to their ability to help learners cope with HIV/AIDS-related issues was 0.9 on the self-efficacy scale, with no marked difference between the tuition centres. This change in mean self-efficacy value is statistically significant, and the Cohen's d value of 1.66 suggests that the intervention had a significant effect on the group being studied. This change may possibly be attributable to the nature of the material provided (reading case studies of vulnerable children; doing a survey to establish how safe learners felt at school; working with colleagues to develop a part of the school's AIDS policy dealing with the issue of protection and support of learners), as the effect is not statistically attributable to the lecturers concerned.

The support of colleagues in the face of HIV and AIDS is seen as one of five critical priorities for schools (Department of Education, 2003). The mean change in self-efficacy with reference to teachers' ability to help colleagues cope with HIV and AIDS-related issues and their ability to develop an AIDS policy at their school was 0.82. This was the smallest change of the four aspects of self-efficacy considered in this study, suggesting that the intervention had the least impact on this aspect of teacher self-efficacy. This can possibly be explained by the fact that the portion of the module that dealt with ways in which to help colleagues cope with HIV and AIDS-related issues was relatively brief, being covered in two out of twelve contact sessions. However, the perceived value of support groups amongst teachers and the importance of not being "quick to stigmatise" those colleagues (and other adults) who were affected or infected by HIV and AIDS came to the fore on occasion during interviews. Students who were interviewed also stated that they believed that their efforts in policy development were of no value unless the principal led the initiative.

The greatest increase (change of 0.98) in all the aspects of self-efficacy under discussion was in the participating teachers' perception of their ability to play a role in the community. Teacher reflections suggest that the assignment in which students were required to interview a care worker (someone who looks after people living with AIDS) made a huge impact on them and influenced their motivation and self-efficacy.

Conclusion

If behavioural change can best be achieved by education (Vergnani, Frank & Johns, 2003), and the best HIV/AIDS education

programmes are those that enhance the esteem and self-efficacy of participants (USAID, 2003), the findings of this study warrant further consideration, as does the question 'will the self-expressed improved self-efficacy translate into meaningful attempts by teachers to meet the challenges of the AIDS pandemic in the future?' Although an effective HIV and AIDS policy should enable a school to articulate its aims, manage a coherent and consistent response to the impact of the disease, and clearly articulate what the school believes (Department of Education, 2003c), teachers in this study highlight the importance of leadership from school management for the successful adoption and implementation of any policy in their schools.

Similarly, teachers commented on the lack of support from parents when dealing with sexuality education at school. It appears that some educators felt intimidated by the criticism of parents, a situation which may lead them to avoid dealing with sensitive issues in the classroom. Negative responses from parents may include the traditional role of the parent in certain South African cultures, where sexuality education is excluded, even in the home. It therefore appears important that departments assume the authoritative mantle required for parents to be educated in matters concerning sexuality, and understand how important this type of education is for their children.

The issue of the role of both male and female teachers in sexuality education also needs to be considered in light of the fact that some male teachers reported feeling uncomfortable teaching about topics such as reproduction, pregnancy and the use of condoms. In addition, participants in this study reported that it was not permissible to discuss the issue of circumcision in class in the presence of women.

Despite the challenges noted above, the education sector has been identified as an important support system (Department of Health, 2005), and the limited findings of this study, plus the findings of other sometimes larger and more rigorous research projects (Andersen *et al.*, 2004; Kachingwe, Norr, Kaponda, Norr, Mbweza & Magai, 2005; Kirby, Laris & Rolleri, 2005; HEAIDS, 2006; Milner & Woolfolk Hoy, 2002; Page, Ebersohn & Rogan, 2006; Weeks *et al.*, 1995), suggest that research into initiatives which provide pointers towards 'best practice' in developing efficacious educators with regard to HIV and AIDS education are worthy of further support (USAID, 2003), if the large number HIV infected and affected South Africans (HSRC, 2009), and Africans in general (UNAIDS, 2006), is to be reduced to an acceptable level.

References

Andersen, A.M., Dragsted, S., Evans, R.H., & Sorensen, H. (2004). The relationship between changes in self-efficacy and the science teaching environment of Danish first-year elementary teachers. *Journal of Science Teacher Education*, 15(1), 25-38.

Armor, D., Conroy-Oseguera, P., Cox, M., King, N., McDonnell, L., Pascal, A., Pauly, E., & Zellman, G. (1976). Analysis of the school preferred reading programs in selected Los Angeles minority schools. Report No. R-2007-LAUSD. Santa Monica, CA: RAND Corporation. (ERIC Document # ED 130 243).

Ashton, P.T., & Webb, R.B. (1986). Making a difference: Teachers' sense of efficacy and student achievement. New York: Longman.

Bandura, (1994). Self-efficacy. In V.S. Ramachandran (Ed.), *Encyclopedia of human behaviour* (pp 71-81). New York: Academic Press.

Bandura, A. (1986). *Social foundation of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice Hall.

Bandura, A. (1997). Self-efficacy: Towards a unifying theory of behavioural change. *Psychological Review*, 84, 191-215.

Bleicher, R.E. (2004). Revisiting the STEBI-B. Measuring self-efficacy in pre-service elementary teachers. *School Science and Mathematics*, 104,(8), 383-391.

Department of Education (2000). *The HIV/AIDS guidelines for educators*. Pretoria: Department of Education.

Department of Education (2002a). *Revised National Curriculum Statement Grades R – 9 (Schools) Natural Sciences*. Pretoria: Department of Education.

Department of Education (2002b). *Revised National Curriculum Statement Grades R – 9 (Schools) Life Orientation*. Pretoria: Department of Education.

Department of Education (2003a). *HIV & AIDS in your school. What parents need to know*. Pretoria: Department of Education.

Department of Education (2003b). *Develop an HIV & AIDS plan for your school. A guide for school governing bodies and management teams*. Pretoria: Department of Education.

Department of Education (2003c). *Manage HIV & AIDS in your province. A guide for Department of Education provincial and district managers*. Pretoria: Department of Education.

Department of Education (2003d). *National Curriculum Statement Grades 10 – 12 (General) Life Sciences*. Pretoria: Department of Education.

Department of Health (2005). *HIV, AIDS and Sexually Transmitted Diseases Strategic Plan for South Africa – 2000-2005*. Pretoria: Department of Education.

El-Deghaidy, H. (2006). An investigation of pre-service teacher's self-efficacy and self-image as a science teacher in Egypt. *Asia-pacific forum on science learning and teaching*, 7(2), Article 2.

Enochs, L., & Riggs, I. (1990). Further development of an elementary science teaching efficacy belief instrument. *School Science and Mathematics*, 93(5), 264-270.

Family Health International. (2005). *Final report for the AIDSCAP program in Kenya – country program description*. Retrieved on 6 June 2006 from the World Wide Web: <http://www.fhi.org/en/HIVAIDS/pub/index.htm>

Gibbs, C. (2002). *Effective teaching: Exercising self-efficacy and thought control of action*. Paper presented at the annual conference of the British Educational Research Association, University of Exeter, England, 12-14 September, 2002.

HEAIDS (2006). *Sounds of silence, difficulties in communicating on HIV/AIDS in schools*. Retrieved February 1, 2006 from the World Wide Web: <http://www.heaid.org.za/information/htm>.

HIV/AIDS in South Africa (2007). <http://www.avert.org/aidssouthafrica.htm>. Retrieved June 3, 2007 from the World Wide Web.

Human Sciences Research Council (2009). *South African national HIV prevalence, incidence, behaviour and communication survey 2008: A turning tide among teenagers?* Cape Town: HSRC Press.

Kachingwe, S.I., Norr, K., Kaponda, C.P.N., Norr, J., Mbweza, E., & Magai, D. (2005). Preparing teachers as HIV/AIDS prevention leaders in Malawi: Evidence from focus groups. *International Electronic Journal of Health Education*, 8:193-204.

Kirby, D., Laris, B.A., & Rolleri, L. (2005). *Impact of sex and HIV education programmes on sexual behaviours of youth in developing and developed countries*. Family Health International, Youth Research Working Paper No. 2.

Lawrence, L. Levy, S.R., & Rubinson, L. (1990). Self-efficacy and AIDS prevention for pregnant teens. *Journal of School Health*, 60(1):19-24.

Milner, H. R., & Woolfolk Hoy, A. (2002). *Respect, social support and teacher efficacy: a case study*. Paper presented at the AGM of the American Educational Research Association, April 3, 2002.

Milson, A. (2003). *Teachers' efficacy beliefs for the formation of students' character*. Paper presented at the annual meeting of the Association for Moral Education. Krakow, Poland.

Moore, W., & Esselman, M. (1992). *Teacher efficacy, power, school climate and achievement: A desegregating district's experience*. A paper presented at the annual meeting of the American Education Research Association, San Francisco.

Page, J.A., Ebersohn, L., & Rogan, J. (2006). *The impact of an HIV/AIDS module on the knowledge and attitudes of Grade 11 biology learners*. *African Journal of Research in Science, Mathematics and Technology Education*, 10(1):103-114.

Pajares, F., & Schunk, D.H. (2001). *Self-beliefs and school success: Self-efficacy, self-concept and school achievement*. In R. Riding & S. Rayner (Eds). *Perception* (pp. 239-266). London: Abex Publishing.

Peeler, E., & Jane, B. (2006). *Efficacy and identification of professional self*. *Academic Exchange Quarterly*, 9(4), 224-228.

Programme for HIV and AIDS education. (2006). Retrieved April 29, 2006 from the World Wide Web: <http://www.ibe.unesco.org/HIVAids.htm>

Ross, J.A. (1992). *Teacher efficacy and the effect of coaching on student achievement*. *Canadian Journal of Education*, 17(1), 51-65.

Simelela, N. (2002). *The South African Government on HIV/AIDS. Science in Africa*. <http://www.scienceinfrica.co.za/> Retrieved April, 2006.

Tschannen-Moran, M., Woolfolk Hoy, A., Hoy, W.K. (1998). *Teacher efficacy: Its meaning and measure*. *Review of Educational Research*, 68, 202-248.

UNAIDS (2006). From advocacy to action – A progress report on UNAIDS at country level. Switzerland, Geneva: UNAIDS.

UNESCO (2005). UNESCO's response to HIV and AIDS. Paris: HIV/AIDS Coordination Unit.

USAID (2003). Life skills and HIV education curricula in Africa: Methods and evaluations. Technical paper No.119. Office of sustainable development, Bureau for Africa.

Vandemoortele, J., & Delamonica, E. (2000). The 'education vaccine' against HIV. Current Issues in Comparative Education. 3(1), <http://hivaidsclearinghouse.unesco.org/> Retrieved May 2009.

Vergnani, T., Frank, E., & Johns, R. (2003). Making choices: Sexuality education for senior phase (Grades 7 – 9) teachers. Johannesburg: Heinemann Publishers.

Walter, H.J., & Vaughan, R.D. (1993). AIDS risk reduction among a multiethnic sample of urban high school students. Journal of the American Medical Association, 270(6), 725-730.

Weeks, K., Levy, S.R., Zhu, C., Perhats, C., Handler, A., & Flay, B.R. (1995). Impact of a school-based AIDS prevention programme on young adolescents' efficacy skills. Health Education Research. 10(3)329-344.

Appendix A: Pre- and post-intervention questionnaire

Teacher efficacy and HIV/AIDS education

Please indicate the degree to which you **agree** or **disagree** with each statement below by circling the appropriate letters to the right of each statement.

	SA = Strongly Agree	A = Agree	UD = Undecided	D = Disagree	SD = Strongly Disagree
1					
2					
3					
4					
5					
6					
7					
8					
9					
10					
11					
12					
13					
14					
15					
16					
17					
18					

Thank you for completing this questionnaire.

Your confidentiality will be ensured and your responses will not be used in any way to determine your mark for this module.

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