Life skills training as HIV/AIDS preventive strategy in secondary schools: evaluation of a large-scale implementation process

M J Visser

ABSTRACT
A life skills and HIV/AIDS education programme was implemented in secondary schools as a strategy to combat the spread of HIV/AIDS among school-going young people in South Africa. As part of a joint effort of the Departments of Health and Education, two teachers per school were trained to implement life skills training and HIV/AIDS education in schools as part of the school curriculum. The implementation of the intervention was evaluated in 24 schools in two educational districts in Gauteng province using an action research approach. Data about the implementation were gathered through interviews and focus group discussions with school principals, teachers and learners. A repeated measurement research design was used to assess the impact of the intervention in terms of knowledge, attitudes and reported risk behaviour in a sample of 667 learners representing learners from grades 8 to 12 from different population groups. Results showed that the programme was not implemented as planned in schools due to organisational problems in the schools, lack of commitment of the teachers and the principal, non-trusting relationships between teachers and learners, lack of resources and conflicting goals in the educational system. In an outcome evaluation over the period of a year it was found that learners’ knowledge of HIV/AIDS increased and their attitudes were more positive although the changes may not be attributed to the programme alone. In the post-test more learners were sexually active, although preventive behaviour did not increase. The programme as implemented in the area did not succeed in changing high-risk behaviour patterns among school-going young people. From the evaluation of the intervention a few valuable lessons were learned about the content and implementation of HIV/AIDS preventive interventions, which could be useful in the implementation of various other HIV/AIDS preventive interventions in the community.

Keywords: Life skills training, HIV/AIDS prevention, large-scale intervention, secondary schools, action research, programme evaluation.

RÉSUMÉ
Un programme de l’enseignement des compétences (life skills) et du VIH/SIDA a été mis en œuvre dans des lycées à titre de stratégie contre la dissémination du VIH/SIDA parmi les jeunes écoliers en Afrique du Sud. Faisant partie d’un effort commun des Ministère de la Santé et de l’Éducation, deux enseignants de chacune des écoles ont subit une formation avec le but d’intégrer l’éducation sur le VIH/SIDA et les compétences (life skills) dans le cursus scolaire. La mise en œuvre de l’intervention a été évaluée dans 24 écoles situées dans deux régions éducatives de Gauteng où on a utilisé l’approche de la recherche active. Les données sur la mise en œuvre ont été recueillies par le biais des entretiens et des discussions de groupes de foyer avec les proviseurs, les enseignants et les élèves. Le modèle de recherche-à-mesure répétée a été utilisé pour évaluer l’impact de l’intervention par rapport à la connaissance, les attitudes et le comportement-à-risque signalé, auprès de l’échantillon de 667 élèves qui représentent des élèves de grade 8 à 12 originaires de différents groupes de la population. Le résultats ont montré que le programme n’a pas été mis en œuvre dans les écoles comme cela était prévu. Ceci à cause des problèmes d’organisation dans les écoles mêmes, les relations de non-confiance entre les enseignants et les élèves, le manque de ressources et les buts contradictoires du système éducatif. A l’occasion de l’évaluation de résultats, qui a eu lieu tout au long d’une année, on a constaté que la connaissance du VIH/SIDA chez les élèves avait augmenté et que les attitudes étaient devenues plutôt positives malgré que le comportement préventif ne s’est pas amélioré. La mise en œuvre de ce programme dans ces régions n’a pas réussi à changer le comportement à haut-risque des jeunes.
Introduction

HIV/AIDS has reached epidemic proportions in South Africa and has serious consequences for individuals as well as for the country’s health resources and economy. According to the latest national statistics, an estimated 12 - 15% of the population was already HIV-infected by the end of 2002 (Department of Health, 2003; Shisana & Simbayi, 2002). The largest percentage of HIV-infected people was in the age group 15 - 29 years. Of pregnant women under the age of 20 years attending public antenatal clinics, 16.1% tested positive in 2000 and 14.8% in 2002 (Department of Health, 2003). Although exact figures about HIV/AIDS among young people in the population as a whole are not available, research findings show that many youth engage in high-risk sexual behaviour including early sexual onset, infrequent condom use and multiple sexual partners. Kushlick and Rapholo (1998) reported that 49% of a stratified sample of 18 500 learners from 600 secondary schools throughout South Africa indicated that they were sexually experienced. Half of these sexually experienced learners indicated that they had used a condom during their last sexual experience. The average age of becoming sexually experienced was 13 years for this group. These results confirm behaviour patterns that have been identified over the past decade (Eaton, Fisher & Aarø, 2003; Fisher, Ziervogel, Chalton, Leger & Robertson, 1993; Mathews, Kuhn, Metcalf, Joubert & Cameron, 1990; Mathews, Everett, Binedell & Steinberg, 1995; Mogotsi, 1997; Siegel, DiClemente, Durbin, Krasnovsky & Saliba, 1995; Steward, McCauley, Baker, Givaudan, James, Leenes et al., 2001; Sunday Times, 2001; Visser, 1995, 2003). These studies also showed that secondary school learners have basic knowledge of HIV/AIDS, but that knowledge alone is not enough to assure ‘safe’ sexual behaviour (Eaton & Fisher, 2000).

The prevention of HIV/AIDS among South African school-going young people is therefore a priority (Bennell, 2003). Given the lack of a vaccine or cure, prevention of the spread of the virus is the only way to combat the disease (Lamptey, 2000). Among young people, HIV/AIDS awareness programmes that focus on the delay of sexual activity and on behavioural change towards ‘safe’ sexual practices are priorities and remain the only means of primary prevention (DiClemente, 1992; O’Grady, 2000; World Health Organisation, 1992; 1993; 1999).

Over the past two decades various preventive efforts have been implemented in South Africa. The development of theoretical approaches in the conceptualisation of preventive interventions (Botvin, 1995) also seen in the development of conceptualisation, focus and strategies of HIV/AIDS prevention programmes. Thus preventive efforts started as mere dissemination of information and developed to more participative community-based interventions (Hobfall, 1998; MacPhail & Campbell, 1999). Each preventive strategy has specific goals and advantages:

• Educational programmes and media campaigns focus on creating awareness of HIV/AIDS and the dissemination of information about the illness and alternative behaviour (Linddegger & Wood, 1995; Parker, Dalrymple & Durden, 1998). It was found that awareness and knowledge about HIV/AIDS do not necessarily encourage changed behaviour patterns (Kelly, Murphy, Sikkema & Kalichman, 1993).

• Cognitive behaviour change programmes are often based on the health belief model (Rosenstock, 1990) and social learning theory (Bandura, 1989; 1992) and focus on the evaluation of personal risk, motivational and hindering factors in behavioural change. Training in life skills such as interpersonal skills, decision-making skills, assertiveness and personal control often form part of these interventions, which are presented in a small-group context.

• Based on the ecological theory, preventive programmes also focus on changing the perception or impact of social norms on risk behaviour. St Lawrence, Eldridge, Reitman, Little, Shelby and
Brasfield (1998) found that when people expected their social group to approve of condom use, the use of condoms increased. The change in social norms involves the support of leaders, the visibility of HIV through more disclosure of HIV status as well as open discussions and commitment to overcome the problem.

• Community interventions involve multiple systems and the use of community resources to restructure communities with the aim of changing the context in which the illness flourishes. Community interventions focus on understanding the underlying reasons for risk behaviour and how to change these processes (Lachenicht, 1993). This often involves changes in health policy, enhancement of quality of life, empowerment of women, and the forming of social networks to support health protective behaviour (Campbell & Williams, 1998).

In this paper a life skills approach to the prevention of HIV/AIDS will be discussed. The focus of the intervention is on primary prevention of risk behaviour, as well as change in lifestyle of individuals who already engage in risk behaviour. The intervention involves dissemination of information, development of cognitive and behavioural skills and aims at changing social norms related to sexual behaviour among young people. Although the focus is on the individual and behavioural change, the strategy used to implement the intervention involves various sectors of community networks.

Life skills training as HIV/AIDS prevention strategy

Life skills can be described as the ability for adaptive and positive behaviour that enables individuals to deal effectively with the demands and challenges of everyday life (World Health Organisation, 1997). Although innumerable life skills are necessary for different situations, ages and cultures (Nelson-Jones, 1993; Powell, 1985), it is suggested that there is a core set of skills at the heart of the skills-based initiative for the promotion of health and well-being of children and adolescents. In the context of the HIV/AIDS epidemic the aim of life skills training is to develop young people’s knowledge, and the skills needed for healthy relationships, effective communication and responsible decision-making that will protect them and others from HIV infection and optimise their health (World Health Organisation, 1992).

Life skills training originated from an educational perspective and is based on a humanistic, cognitive and behavioural frame of reference (Ebersohn & Jacobs, 2000). In this research an individual is seen as consisting of multiple sub-systems such as the physical, affective, cognitive, interpersonal, moral and behavioural – all in close relationship and part of the whole – functioning within a family and social context (Ford & Lerner, 1992; Nelson-Jones, 1993). Life skills programmes focus on the development of various sub-systems of the individual with the aim of facilitating change in the individual, often observed through behavioural processes. For example, by changing how an individual thinks, feels or makes decisions, changes can also take place in the individual’s behaviour. Life skills training can contribute to the development of an individual’s capacity for adaptation and the development of new interactional patterns between the individual and his/her social context. Life skills training can therefore also impact on risk behaviour related to HIV/AIDS, which is associated with various processes at the individual (such as self-esteem, awareness of personal risk), interpersonal (such as peer group norms, gender roles) and community and cultural levels (Campbell & Williams, 1998).

There is growing evidence that preventive life skills programmes have a positive impact on the lives of children and adolescents (Albee & Gullotta, 1997; Durlak, 1995; 1998; Durlak & Wells, 1997; Van der Merwe, 1996; Weissberg & Greenberg, 1998). Specifically related to HIV/AIDS, it was found in meta-analyses of research results that life skills programmes contributed to some extent to change in risk behaviours (Kim, Stanton, Li, Dickersin & Galbraith, 1997; Kirby, Short, Collins, Rugg, Kolbe, Howard et al., 1994; Kirby, Korpi, Barth & Cagampang, 1997; Oakley, Fullerton & Holland, 1995). In evaluations done in southern Africa (Berkhof, 2003; Peltzer & Promtussananon, 2003; Rutenberg, Kehus-Alons, Brown, Machtrey, Dallimore & Kaufman, 2001; Visser, 1996) it was found that life skills and HIV/AIDS education programmes for school children contributed to increased levels of knowledge regarding HIV/AIDS, more assertiveness, more positive attitudes towards people with HIV and some indications of delayed sexual activity (Peltzer & Promtussananon, 2003), more condom use (Berkhof, 2003; Rutenberg et al., 2001) and fewer sexual partners (Berkhof, 2003).
In the evaluation of HIV/AIDS programmes, methodological shortcomings limit the conclusions that can be made about the impact of programmes. Most evaluations focus on the impact on knowledge, attitudes and reported behaviour. Little information is available about the impact on actual behaviour and the sustainability of change. Little information is also available about the impact of different prevention messages on different cultural groups. Political and moral agendas often form barriers in the implementation of life skills programmes in diverse communities because different skills and values are emphasised in different contexts (Maclachlan, Namangala & Kabambe, 1995; Mathews et al., 1995; Perkel, Strelbel & Joubert, 1991; Reddy, Everett & Steinberg, 1992). Evaluations are often done on small-scale and pilot projects in controlled situations. There has been little research done on the dissemination and implementation of school-based HIV/AIDS programmes on a community-wide level.

Description of the national life skills and HIV/AIDS education intervention

In response to the HIV/AIDS epidemic, the South African Departments of Education, Health and Welfare embarked on a national programme to implement life skills training, sexuality and HIV/AIDS education in secondary schools in 1995 (Department of Health and Department of Education, 1997/8). The goal of the intervention was to increase knowledge and skills needed for healthy relationships, effective communication and responsible decision-making that would protect learners from HIV infection, and to promote positive and responsible attitudes towards people with HIV/AIDS. In the planning of the intervention a position was taken to maintain a balance between the time needed to follow a scientific approach to the intervention and the urgency of the HIV/AIDS crisis. Various sub-committees were formed to deal with curriculum development, teacher training, marketing and liaison and co-ordinating of provincial efforts in implementing the intervention nationally (Department of Health and Department of Education, 1997/8). The national committee agreed to the following content, training and implementation process to be implemented by the provincial departments.

Content of the intervention
A sub-committee developed guidelines for the content of the intervention aimed at the enhancement of health-protective behaviour and recommended that the following aspects should be included:

• information about sexuality and HIV/AIDS, especially on the transmission of and protection against HIV/AIDS, to facilitate critical assessment of personal risk for acquiring the HIV infection
• the development of life skills that would enable the learners to take up health-protective behaviour with regard to HIV/AIDS, such as self-awareness, decision-making, assertiveness, communication and negotiation skills
• the enhancement of a positive attitude among youth towards people with HIV/AIDS as preparation for interaction with and caring for infected people (Department of Health and Department of Education, 1997/8).

The programme was not developed as a single pre-prepared manual. The guidelines formed the core of the programme and programme material was provided to assist teachers in the development of interventions that addressed the needs of the learners in their own cultural context. The reason for this was that a single programme would not be able to address the diverse needs of diverse cultural groups (Perkel et al., 1991; Reddy et al., 1992; Sepulveda, Fineberg & Mann, 1992). It was therefore not a single programme implemented nationally, but various programmes were compiled by the teachers using a set of guidelines and provided resources.

Process of implementation
The decision to implement life skills training and HIV/AIDS education in schools was cascaded down in the educational system using a train-the-trainer approach (Kola, Rapholo, Schneider & Everatt, 1998). The provinces could decide if they wanted to be responsible for the training of teachers to implement the programme or if they wanted a non-governmental agency to be responsible for the training. The research reported on in this paper was done in Gauteng Province, where project teams at provincial and district levels were trained as master trainers and co-ordinators of the intervention. Nationally 840 master trainers were trained during a series of workshops (Department of Health and Department of Education, 1997/8; Social Surveys, 1999). Kola et al. (1998) evaluated the training of master trainers.

The master trainers in their turn trained two teachers in every secondary school in the country to present
life skills and HIV/AIDS education in their schools. Teachers’ training was done in small groups in each educational district and was presented in the afternoons after school. The 10 – 20-hour training focused mainly on knowledge and attitudes related to HIV/AIDS and how to use experiential learning techniques in life skills training. Evaluations of the teachers’ training in different areas were done by Foster (1998), Social Surveys (1999) and Visser (2001).

The role of the two trained teachers in each school was agreed to be the following:

- to develop a context-specific programme for their school according to the needs of the learners and the values of the community
- to present the programme to learners in their schools
- to act as change agents in the school by involving other teachers and parents in a change process to integrate life skills training and HIV/AIDS education as part of the school curriculum.

The implementation of the programme in schools started in 1998/99. In each province a different procedure was followed and was evaluated accordingly; for example, the evaluations done in KwaZulu-Natal (Rutenberg et al., 2001), the Northern Cape, Free State, North West and Northern Province (Rapholo, Mulaudzi, Monson, Kola & Segel, 1999). In the research reported on here the implementation of the life skills and HIV/AIDS education programme was monitored during the first 2 years of implementation in two educational districts in Gauteng Province.

**Aim of the research**

The aim of the research was to monitor the implementation of the life skills and HIV/AIDS education programme in schools and to evaluate the impact of the intervention in terms of the knowledge, attitudes and reported behaviour patterns of learners. The aim of the intervention was to prevent risk behaviour and to contribute to the decrease of already existing risk behaviour such as the number of learners being sexually active, having multiple sexual partners and not using condoms.

**Method of the research**

The researcher became involved in the implementation of the intervention as an external evaluator to monitor the effectiveness of the intervention in the schools in two educational districts in Gauteng. An action research approach (Lewin, 1947; McNiff, 1988; Walker, 1997; 1998) was used to monitor the implementation of the intervention in schools. Action research involves the implementation of an intervention and observation of the impact on the target group. The advantage of action research is that feedback about the process can be provided after each step of the process, and that adjustments can be made immediately to improve the implementation process. The study involved both process and outcome evaluations, using a multi-method approach, integrating qualitative and quantitative research methods (Goodman, 2000; Greene, 1994; Patton, 1997). The evaluation was done over a period of 2 years, and involved the perspectives of the different role-players in the school community. A systems approach (Bateson, 1979; Capra, 1997; Hanson, 1995; Keeney, 1983) was used as a theoretical framework to understand the interaction between various sub-systems in the school setting and the processes involved in implementing the intervention.

**Sample used**

The evaluation of the implementation was limited to two educational districts in urban areas, where all 24 secondary schools in the districts were initially included in the study. After the initial interviews with teachers in all 24 schools, the research continued in five of the schools, selected as a stratified sample to represent the population composition in the area. Five schools were selected to gain in-depth understanding of the implementation process from the perspective of various role-players in the schools. An evaluation of the impact of the intervention on learners’ behaviour patterns was also done in these schools.

**Process of programme implementation in schools**

After the training of the teachers in presenting life skills and HIV/AIDS education in schools, it was expected that they would develop programmes and present them to learners in their schools. Three months after the training, the researcher interviewed the teachers about their experience of implementing the programme. It was found that although the teachers were enthusiastic about the programme and were motivated to implement it, they experienced many obstacles in the functioning of their schools that made it almost impossible to implement the programme. As part of the action research approach the feedback about the obstacles was used to inform further
planning of the intervention. The interaction between
the implementation and evaluation of the intervention
is schematically illustrated in Fig. 1 (on the left side all
the interventions are given and on the right side the
evaluation and the feedback processes).

To address some of the obstacles in implementing the
intervention, the following further interventions were
put into place in the schools in the area:

- Workshops were conducted to inform the principals
  of the schools of the necessity of implementing
  HIV/AIDS education in schools. Suggestions on
  how to organise school activities to enable the
  implementation of the programme were discussed.

- An HIV/AIDS awareness programme was
  implemented in the schools. This involved a team of
  professionals (nurses, social workers and
  educationists) from outside the schools presenting a
  2-day intervention at each school, informing the
  learners, teachers and principals about the dangers of
  HIV/AIDS, as well as life skills needed to enhance
  health-protective behaviour.

- After the awareness programme each school was
  asked to nominate an action committee consisting
  of learners, teachers and parents to assist the two
  trained teachers in implementing HIV/AIDS
  education in the school. This was done to encourage
  various role-players to take ownership and
  responsibility for the implementation of the
  programme in the schools.

- Thereafter, the implementation and outcome of the
  intervention were evaluated over a period of 1 year
  in the five selected schools. The results from these
  evaluations were used as recommendations to
  improve the implementation of the intervention.

Evaluation of the intervention
Programme evaluation involves the systematic
collection of information about the activities,
characteristics and outcome of a programme, in order
to make judgments about the programme, improve its
effectiveness and inform discussions about future
programming (Patton, 1997). In outcome evaluation
the focus is on studying the impact of an intervention
on the target group, in order to obtain information
about the value of the programme in reaching a
specific goal (Calder, 1994). Process evaluation focuses
on the ‘internal dynamics and actual operations of a
program in an attempt to understand its strengths and
Weaknesses' (Patton, 1997, p. 206). Process evaluation contributes to the understanding of the complex environment in which the intervention takes place, as well as the impact of the intervention on social processes in the context (Goodman, 2000; Patton, 1997). The majority of evaluations of HIV/AIDS prevention programmes have been done in the form of outcome evaluations. There is a lack of research about the complex social and multi-level community processes involved in preventive interventions (MacPhail & Campbell, 1999). An important focus of this research was therefore on the implementation process.

**Process evaluation**

The implementation of the programme was evaluated through interviews and focus group discussions with various role-players in the schools. About 3 months after the training of the teachers, interviews were conducted with the trained teachers in 24 schools to explore the implementation process. After introducing further implementation strategies (Fig. 1), about 2 years after programme implementation started, interviews and focus group discussions were conducted with various role-players in the five selected schools.

Interviews were conducted with the two teachers responsible for implementing the programme, and with the school principals in each school. Two focus group discussions consisting of 10 learners each were conducted in all five schools, one group for learners in junior classes (grades 8 - 9) and one group for learners in senior classes (grades 10 - 12). All the teachers in the five schools participated in focus group discussions. The various role-players provided different perspectives on the process of implementation, the meanings they attached to the intervention, the resources available and the mediating processes impacting on the implementation process.

**Outcome evaluation**

A repeated measurement design was used by implementing a questionnaire as a pre- and post-test to investigate possible changes in knowledge, attitude and reported behaviour patterns of the learners who were exposed to the intervention. The pre-test was done at the beginning of the year and the post-test at the end of the same year, after some interventions took place in the schools.

A national community-wide implementation of an intervention it is not possible to include a non-intervention control group in the design, since teachers at all schools have been involved in the training process. According to systems theory it also does not make sense to include different schools as control groups, since the response of a school as a system is determined by internal processes such as interpersonal and cultural processes and not only by the intervention (Capra, 1997). It was therefore decided to use the five schools in the study as control groups for each other, since processes in the schools differed and there were differences in the programmes that were implemented in each school.

**Sample of learners**

In each of the five schools the questionnaire was completed by learners in one class of about 35 - 40 learners in each grade group (grade 8 - 12). This was a stratified sample to represent learners in each grade group. This was done to comply with the agreement with the Department of Education not to interrupt the activities of the whole school. In the pre-test 873 learners completed the questionnaire and in the post-test 794 learners. The pre- and post-test questionnaires of 667 learners could be matched, using a numbering system that assured confidentiality.

**Questionnaire**

The questionnaire consisted of biographic questions such as gender, age and language group, as well as scales assessing HIV/AIDS knowledge, knowledge of protective behaviour, attitudes regarding HIV/AIDS and questions about high-risk behaviour patterns. The following scales were included:

**Scale 1: Knowledge of HIV/AIDS**

Ten knowledge questions from the World Health Organisation (1990) Research Package were included. Questions were answered on a three-point scale: 'True', 'False' and 'Don’t Know’. The Kuder-Richardson reliability coefficient for the scale was 0.55 using the data of the 873 respondents in the pre-test. The reliability was not high (Kerlinger & Lee, 2000) because of the variety of questions focusing on different knowledge areas. However the scale could discriminate between learners with good and superficial knowledge of HIV/AIDS.

**Scale 2: Knowledge about protective behaviour**

The respondents had to rate eleven types of behaviour as good or bad protection against contracting HIV/AIDS. These questions were also obtained from the World Health Organisation (1990) Research Package. The Kuder-Richardson reliability coefficient for the scale was 0.60 (N = 873).
Scale 3: Attitudes towards people with HIV/AIDS. Four questions were used to assess learners’ attitude towards people with HIV/AIDS. Questions relevant to the school and family situations were used. The questions were answered on a three-point scale: ‘Agree’, ‘In between’ and ‘Don’t agree’. A reliability coefficient of 0.67 was obtained for the attitude scale.

Reported high-risk sexual behaviour: Questions investigating learners’ reported high-risk sexual behaviour patterns were included to determine their level of sexual experience, use of condoms, having multiple sexual partners as well as the group norms related to sexual behaviour. These questions were answered and interpreted on a nominal scale: ‘Yes’, ‘No’ or ‘Don’t know’ and are dealt with as different forms of high-risk behaviour.

Data analysis
Quantitative data of the pre- and post-tests were statistically analysed using T-tests for repeated measurements (Kerlinger & Lee, 2000) and McNemar tests for data on the nominal level (Siegel, 1956). Through quantitative data, patterns of behaviour change over a period of time can be detected in a representative sample of respondents (Banyard & Miller, 1998).

The qualitative data were analysed by means of thematic content analysis (Miles & Huberman, 1994). Re-occurring themes were identified. The perspectives of the different role players were compared to get an integrated understanding of processes in the schools.

Results of the study
The results of the process evaluation focusing on the implementation of the intervention will be discussed first, and thereafter the outcome evaluation focusing on the impact of the intervention on behaviour patterns of the learners.

Process of implementing the programme
In the analysis of the interviews and focus group discussions major themes emerged. Selected themes focusing on the implementation process and barriers in the implementation are presented here.

Change took place on an individual level, since the trained teachers gained knowledge and relationship skills through the training sessions. They realised the need for the intervention and were motivated to implement it in their schools. In only a few schools were the teachers able to disseminate information about HIV/AIDS to learners during Guidance periods. In the majority of schools the teachers felt extremely frustrated because there were many obstacles that prevented them from implementing the programme. One teacher said: ‘I wanted to implement the programme and make a difference, but I will not be able to do it. With the workload I have, I cannot do it. There is no time. There is nothing I can do.’

In schools that were able to implement the programme, the following processes supported the implementation of the intervention:

- The teacher was highly motivated, committed, and had faith in the value of the intervention. One teacher said: ‘That is my dream to do something about the problem of AIDS. We make sacrifices; we do it after school. We work really hard and then we can do something. It seems to be working.’
- Time was allocated on the timetable for HIV/AIDS education.
- The teacher experienced support from the principal and other teachers for implementing HIV/AIDS education. One teacher said: ‘Our principal is very supportive. If he was not on our side it will not be working out.’

In the schools that could not implement the programme, the following were identified as the main obstacles:

- There was no time on the timetable to present the programme to the learners since all the periods were allocated to examination subjects. The teachers complained about their workload: ‘There are so many things to do. We are understaffed and our timetables are so full that we barely have time. Where we do it we just do it stealing time from other subjects we are supposed to be teaching.’
- There were only two trained teachers per school and they could not reach all the learners.
- The teachers did not have relationships of trust and openness with learners. One learner described it as follows: ‘Teachers’ attitude towards learners must change before we can talk to them. They do not care about us and will tell everything in the staff room.’
- The trained teachers experienced a lack of support from other teachers, the principals and the project teams of the Department of Education to overcome
the organisational obstacles in the school. The teacher in one school felt: 'The principal does not see it as important because it is a non-exam subject. He is very disinterested and does not take it seriously.'

• In the hierarchical structure of the school the status of the trained teachers (often the Guidance teachers) was low (also confirmed by Berard, Pringle & Ahmed, 1997; Vergnani, Fisher, Lazarus, Reddy & James, 1998). Therefore, they were not in a position to train other teachers or to change the organisation of the school.

In schools where the programme was implemented, the focus was on creating awareness and disseminating information about HIV/AIDS and not on building learners’ capacity and life skills.

The underlying processes that obstructed the implementation of the programme in many schools were mainly the organisation and structure of the school system. The majority of teachers in the schools did not want to become involved in the implementation of the programme. The most important reasons for their lack of involvement included the following:

• They were uninformed about the seriousness of the HIV/AIDS epidemic and the necessity of the intervention.
• They did not regard their relationship with the learners as appropriate to deal with intimate issues.
• Teachers did not conceptualise sex education and emotional involvement with learners as part of the teachers’ role: their role was to provide academic input.
• Due to financial constraints in the education system at the time, teachers were retrenched and there was a general lack of a culture of teaching and learning in these schools. This exerted a negative impact on the motivation of the teachers and the discipline in the schools. One teacher responded: ‘Teachers are very unsure about their future and the replacement issues. They feel anything can happen and then they are out of work. They are not motivated to take new assignments.’

From the interviews with school principals it could be seen that some of them did not see the implementation of the programme as a priority, since they did not regard HIV/AIDS as a serious problem or did not see it as the responsibility of the school. Principals who understood the urgency of the programme, experienced conflict of interests. On the one hand they wanted to implement the programme, on the other hand there were many different issues in the school:

• They felt overwhelmed by the magnitude of behavioural problems experienced by learners, the lack of motivation of the teachers and the organisational problems in the schools.
• The focus in the education system was on improving the standard of education in schools. Teaching of examination subjects therefore had a high priority. The principals felt that they could not simultaneously improve the academic standard of the school and implement the life skills and HIV/AIDS programme with the limited human resources available in the schools.

All these processes contributed to the lack of implementation of the intervention in the schools. These processes were related to decisions and policies in the Department of Education. Although the Department of Education was involved in the initiation of the life skills and HIV/AIDS education programme, there were other processes in the educational system that were of higher priority at the time, such as:

• the improvement of the standard of education in schools amidst a general lack of a culture of teaching and learning
• the introduction of new curricula and educational methods in many of the subjects
• organisational and financial restructuring as part of the racial integration in education after years of apartheid.

These processes obstructed the availability of resources to implement the programme in the schools. Against the background of the limited implementation of the programme, an outcome evaluation was done to determine the impact of the intervention on learners’ behaviour.

**Behaviour patterns of learners**

The behavioural patterns of learners were monitored through comparing the pre- and post-assessment done in the five selected schools. In three of the schools (School 1, 3 and 4) aspects of the programme were presented to the learners in Guidance periods or in sessions after school. The pre- and post-assessments of 667 learners were matched and statistically analysed.
The sample of learners consisted of 47% males and 53% females, 56% were in the age group 14 – 16 years and 44% in the age group 17 – 19 years. Seventeen per cent of the learners were English speaking (white and Indian), 32% were Tswana speaking, 31% were Sotho speaking and 17% spoke other African languages (3% did not report their home language). The sample seemed to be well representative of the population composition in the area.

The quantitative findings of the study are presented in Table 1 in terms of the t-test and McNemar results and significance of differences between the pre- and post-tests. The results of the five participating schools as well as for the group as a whole are given in Table 1.

In the group as a whole learners’ knowledge about HIV/AIDS ($p < 0.001$) and about protective behaviour ($p < 0.01$) changed significantly, as well as their attitudes towards people with HIV ($p < 0.01$). Because no control was built in for extraneous factors, it cannot be concluded that the changes were due only to the intervention. In three of the schools (School 1, 3 and 4) where information on HIV/AIDS was disseminated, there was an increase in the level of knowledge of the learners, while there were no significant changes in the two schools in the sample that did not implement aspects of the programme.

In the group as a whole there was an increase in the reported high-risk behaviour of the learners over the period of a year. More learners were sexually experienced ($p < 0.01$) and perceived their friends to be sexually active ($p < 0.01$) in the post-test. There were no significant changes in their protective behaviour. Of the sexually experienced group, 21% reported having multiple sexual partners in the pre-test and 26% in the post-test, while 33% reported non-condom use in the pre-test and 36% in the post-test.

Regarding high-risk behaviour, no definite pattern could be identified related to programme implementation. In three of the schools (black township schools, where aspects of the programme was implement in two of the schools), significantly more learners were sexually active in the post-test ($p < 0.01$). In two schools more learners perceived their friends to be sexually active ($p < 0.05$ and $p < 0.01$) and in one school more learners did not use condoms in the post-

### Table 1. Changes between variables in pre- and post-test measurement

| Variables                              | School 1 (N = 120) | School 2 (N = 87) | School 3 (N = 174) | School 4 (N = 151) | School 5 (N = 135) | Group as a whole (N = 667) |
|----------------------------------------|--------------------|------------------|-------------------|-------------------|-------------------|--------------------------|
| Results of t-tests                     |                    |                  |                   |                   |                   |                          |
| Knowledge about HIV/AIDS               | 2.75†              | 1.95             | 5.82†             | 2.83‡             | 0.91              | 6.4 (1.9)               |
| Knowledge of protective behaviour      | -0.31              | 0.73             | 1.89‡             | 2.82‡             | 1.55              | 6.9 (2.2)               |
| Attitude towards HIV/AIDS              | 0.68               | 1.75             | 1.75              | 0.18              | 1.62              | 2.6 (1.3)               |
| Results of McNemar tests               |                    |                  |                   |                   |                   |                          |
| Sexually experienced                  | 2.58               | 0.08             | 11.01^ (45 - 59%) | 10.08^ (27 - 43%) | 9.32^ (37 - 50%)  | 33                       |
| Perception that friends are sexually active | 11.66† (57 - 69%) | 1.07            | 3.57              | 9.5* (40 - 56%)   | 4.66              | 56                       |
| Multiple partners last 6 months        | 3.57               | 2.0              | 0.53              | 3.0               | 0.67              | 21                       |
| Non condom use last experience         | 0.33               | 1.0              | 4.26* (28 - 42%)  | 3.0               | 3.6               | 33                       |

*Significant difference on 5% level.
†Significant difference on 1% level.
‡Significant difference on 0.1% level.
test \((p < 0.05)\). The results were not related to the implementation of parts of the programme or not.

Although the implementation of the programme did not contribute towards less sexual high-risk behaviour in this group of learners as a whole, there were responses like the following from focus group discussions, indicating that the intervention had an impact on some of the learners: ‘In a group you might laugh when somebody speaks about AIDS, but when you are alone you’re scared, you realise this is real, you have to be careful and know you have to go and take that test’ and ‘I think our teachers are getting through to us about AIDS’.

Discussion
The evaluation of the implementation of the life skills and HIV/AIDS education programme was done on two levels. On a behavioural level it was found that there were significant changes in the learners’ knowledge of HIV/AIDS, knowledge of protective behaviour and their attitudes towards people with HIV over the period of 1 year. Because of the research design it cannot be concluded that the changes can be attributed to the intervention alone, although changes took place, especially in schools where aspects of the programme were implemented. The differences in the pre- and post-test means that were statistically significant (Table 1) were, however, very small. It is known that large samples increase the likelihood of statistical significance, although the effect size is rather small.

Unlike in other studies (Berkhof, 2003; Kirby et al., 1994; Rutenberg et al., 2001; UNAIDS, 1997) there was an increase in reported sexual activity among learners during the research period, and a perception that more of their friends were sexual active, although their protective behaviour did not change significantly. This increase in sexual behaviour could partly be attributed to the development pattern of becoming sexually active with age. This development pattern was therefore not changed during the research period. It is also possible that the learners were more honest about their sexual behaviour in the second questionnaire after having been exposed to some information about HIV/AIDS (Miller, Turner & Moses, 1991). The higher perceived sexual activity of friends could indicate that the learners communicated about sexual activity or that the group norm became more accepting of sexual behaviour. Although more learners were sexually experienced, there were no significant differences in protective behaviour reported by sexually active learners. The intervention as it was implemented, therefore, did not have an impact on the normal sexual maturation process or the group norms related to sexuality among young people in schools. Perhaps the most important reason for the lack of change in high-risk behaviour was that the programme was not implemented as planned in many of the schools.

The process evaluation indicated that the life skills and HIV/AIDS education programme was not implemented as planned in most of the schools, and where it was implemented only parts of the programme were used. Various processes on all levels of the school system obstructed the implementation of the programme. It was found that organisational problems in the schools, such as allocation of time and human resources, relationships with learners, lack of communication in schools and attitudes of teachers, contributed mainly to the ineffective implementation of the life skills and HIV/AIDS education programme in these schools in the Gauteng province.

Although life skills training may be effective in promoting healthy behaviour in adolescent groups (Berkhof, 2003; Kirby et al., 1994; Kirby et al., 1997; Peltzer & Promtussananon, 2003; Rutenberg et al., 2001) many processes in the implementation of large-scale community interventions, such as the one studied here, can impact on the effectiveness of implementation and the outcome of the programme. The programme might have had a different impact in other contexts where a different process of implementation was used.

Conclusions and recommendations
Although the implementation of the life skills and HIV/AIDS education programme, aimed at preventing the spread of HIV/AIDS among South African young people, was an extensive effort of many government departments on the national level, many obstacles were experienced in the implementation of the intervention on the school-level. From this research various valuable lessons were learnt that could be used in the implementation of future large-scale life skills and HIV/AIDS education programmes.
Content of the programme
The intervention as implemented by the teachers focused largely on awareness and information about HIV/AIDS and not on the development of life skills that could assist learners to develop healthy life styles. A structured programme, developed and evaluated for the specific context, could have provided the teachers with more guidelines about the specific content they needed to address to change high-risk behaviour of learners.

Teachers as presenters
There are many advantages to using teachers as life skills presenters because they have contact with the learners on an ongoing basis, which contributes to the sustainability of the programme. However, in this research the teachers did not appear to have close and trusting relationships with the learners. They did not have the status in the school to impact on the organisation of the school by suggesting changes in the timetable and work allocation. The teachers needed much support from the project teams to facilitate change in their schools.

Community involvement
The HIV intervention was initiated by government departments and was cascaded down to the school level in a top-down fashion. During the implementation on school level various attempts were made to facilitate the involvement of various role-players in the implementation of the programme in the schools (Fig. 1). All these approaches were also top-down approaches that were not effective. It is suggested that the various role-players on school-level be given more responsibility for the programme and be involved in the whole process of change.

Capacity of the community to change
One of the most important reasons for the ineffective implementation of the programme was that the climate in the educational system and the school community did not adequately support the implementation of the programme. The capacity of a community to change involves the awareness and involvement of community members, effective leadership, a sense of community and commitment to community issues and the availability of resources (Edwards, Jumper-Thurman, Plested, Oetting & Swanson, 2000). It is therefore difficult to implement a programme in schools with low teacher involvement, lack of human resources, low awareness and commitment to deal with the problem situation, where there are conflicting goals and many changes taking place at the same time impacting on human resources. Davidoff (1997; p. 101) wrote: ‘It is very difficult for individual teachers to commit themselves to a process of change if the school environment is such that it does not support that change.’

To implement an effective school-based life skills and HIV/AIDS education programme the processes in the school community need to be identified in a situation analysis, and obstructive processes on each level of the system need to be addressed before the programme can be implemented (Sarason, 1996). The implementation of change in schools is a long-term process involving participation of stakeholders, mobilising of resources and support and feedback through continuous communication (Fullan, 1991). To implement an intervention on a community-scale, a comprehensive change management programme is essential and processes on different levels of the community need to be co-ordinated to support the implementation of the intervention.

Acknowledgements
I would like to acknowledge the contribution of Prof Johan Schoeman in the process of doing the research and Dr Neha Louw, Dr Johan Louw and Mrs Mornay Scott of the Gauteng Education Department for collaborating in this study.

References
Albee, G.W. & Gallotta, T.P. (1997). Primary prevention works: Thousand Oaks (CA): Sage.
Bandura, A. (1989). Perceived self-efficacy in the exercise of control over AIDS infection. In: VM. Mary, G.W. Albee & S.F. Schneider (Eds), Primary prevention of AIDS: psychological approaches: Primary prevention of psychopathology (Vol. XIII (pp. 128-141). Newbury Park: Sage.
Bandura, A. (1992). A social cognitive approach to the exercise of control over AIDS infection. In R.J. DiClemente (Ed.), Addictions and AIDS: A prevention in jeopardy (pp. 89-116). Newbury Park: Sage.
Banyard, V.L. & Miller, K.E. (1998). The powerful potential of qualitative research for Community Psychology American Journal of Community Psychology, 26 (4), 485-505.
Bateson, G. (1979). Mind and nature: A necessary unity. New York: E.P. Dutton.
Bennett, P. (2010). The impact of the AIDS epidemic on schooling in sub-Saharan Africa. Available at http://www.cfid.org/bulletin/impactofschooling.pdf
Berez, R.M.F, Pringle, E.F. & Ahmed, N. (1997). A preliminary investigation of high-school counseling resources on the Cape Peninsula. Adolescence, 32(126), 373-379.
Berkhof, F. (2003). HIV/AIDS and education in Botswana: The Stay Alive Programme. Perspectives in Education, 21(2), 167-175.
Bottvin, K.J. (1995). Drug abuse prevention in school settings. In G.J. Botvin, S. Schinke & M.A. O’Malley (Eds), Drug abuse prevention with multivariate youth (pp. 169-191). Thousand Oaks: Sage.
Calder, J. (1994). Programme evaluation and quality: a comprehensive guide to setting up an evaluation system. London: Kogan Page.
Life skills training as HIV/AIDS preventive strategy in secondary schools: evaluation of a large-scale implementation process

Campbell, C. & William, B. (1998). Evaluating HIV-prevention programmes: Conceptual challenges. Psychology in Society, 24, 57-68.

Cape Times (1998). Life and a series of words and notes. London: Flamingo.

Dardos, S. (1997). School organisation development in a changing political environment. In S. Hollingsworth (Ed.), International action research: A handbook for educational s jóvenes (pp. 100-113). London: The Palmer Press.

Department of Health and Department of Education (1997/1998). Life skills and HIV/AIDS Education Programme. Project report of the joint venture of the South African Departments of Health and Education. Pretoria: Department of Education.

Department of Health. (2003). National HIV and syphilis core-surveillance survey among attending public antenatal clinics in South Africa 2002. Pretoria: Department of Health.

DiClemente, R.J. (1992). Adolescents and AIDS, a generational in jeopardy. Johannesburg: Parkside Sage.

Durlik, J.A. (1995). School-based prevention programs for children and adolescents: Thousands Ours Sage.

Durlik, J.A. (1998). Primary prevention programs for children and adolescents are effective. Journal of Mental Health, 7, 463-469.

Durlik, J.A. & Wills, A.M. (1997). Primary prevention mental health programs for children and adolescents: A meta-analytic review. American Journal of Community Psychology, 25(2), 115-152.

Eaton, L. & Flisher, A.J. (2005). HIV/AIDS knowledge among South African youth. Southern African Journal of Child and Adolescent Mental Health, 12(2), 97-124.

Eaton, L., Flisher, A.J. & Aun, E.L. (2003). Unsafe sexual behaviour in South African youth. Social Science & Medicine, 56(1), 149-165.

Ellerson, L. & Jacob, L.J. (2000). A theoretical framework for life skills training in educational guidance and counselling. Presentation at the First International Conference on Educational Psychology: Creative, Rescource, counselling and assistance for the children in our country. Pretoria: University of South Africa, 14-18 June.

Edwards, R.W., Jumpa-Thurman, P., Plowit, B.A., Oeming, E.R. & Swanston, L. (2000). Community readiness. Research to practice. Journal of Community Psychology, 28(3), 291-307.

Flaherty, A.J., Mungai, J.W., Chakon, D.O., Leget, P.H. & Rotherman, B.A. (1993). Risk-taking behaviour of Cape Peninsula high-school students: Part VIII Sexual behaviour. South African Medical Journal, 83, 495-497.

Ford, D.H. & Levine, H.M. (1992). Developmental theory: Systematic approach. New York: Parkside Sage.

Foster, A. (1998). Life skills and HIV/AIDS Teacher Training Project 1997-1998: Final Report. Planned Parenthood Association of South Africa.

Fullam, M.G. (1991). The new meaning of educational change (second edition). New York: Teachers College Press, Columbia University.

Goodman, B.M. (2000). Bridging the gap in effective program implementation: From concept to application. Journal of Community Psychology, 28(3), 309-321.

Greens, J.C. (1994). Qualitative program evaluation. Practice and promise. In N.K. Donin & Y.S. Lincoln (Eds), Handbook of qualitative research (pp. 530-544). Thousand Ours Sage.

Hansen, B.G. (1995). General system theory beginning with wholes: Toronto: Toronto & France.

Hendler, S.E. (1990). Social psychology, community and AIDS prevention. Journal of Community Psychology, 26(2), 133-144.

Kerlinger, F.N. & Lee, H.B. (2000). Foundations of Social Research: A systematic conceptualizaiton and critique. New York: North Scritica.

Kim, N., Stanton, B., Li, X., Dickersin, K. & Galbraith, J. (1997). Effectiveness of the 40 Life skills and HIV/AIDS Programme, four provincial case studies. Research done for the National Life Skills Task Team. Johannesburg: Community Agency for Social Services.

Kodu, P., Flisher, A.J., de Bruijn, G.F., Chiron, D.O., Leger, P.H. & Rotherman, B.A. (1993). Risk-taking behaviour of Cape Peninsula high-school students: Part VIII Sexual behaviour. South African Medical Journal, 83, 495-497.

Kodu, P., Flisher, A.J., de Bruijn, G.F., Chiron, D.O., Leger, P.H. & Rotherman, B.A. (1993). Risk-taking behaviour of Cape Peninsula high-school students: Part VIII Sexual behaviour. South African Medical Journal, 83, 495-497.

Kodu, P., Flisher, A.J., de Bruijn, G.F., Chiron, D.O., Leger, P.H. & Rotherman, B.A. (1993). Risk-taking behaviour of Cape Peninsula high-school students: Part VIII Sexual behaviour. South African Medical Journal, 83, 495-497.

Kodu, P., Flisher, A.J., de Bruijn, G.F., Chiron, D.O., Leger, P.H. & Rotherman, B.A. (1993). Risk-taking behaviour of Cape Peninsula high-school students: Part VIII Sexual behaviour. South African Medical Journal, 83, 495-497.
Life skills training as HIV/AIDS preventive strategy in secondary schools: evaluation of a large-scale implementation process

Sunday Times (2001). Be afraid. Be very afraid. Newspaper article on 4 March 2001, p. 4. UNAIDS (1997). Impact of HIV and sexual health education on sexual behaviour of young people. Geneva: UNAIDS.

Van der Merwe, A. (1996). Life skills education: Empowering pupils for the future. In P. Engelbrecht, S. Kriegler & M. Booysen (Eds), Perspectives on learning difficulties, international concerns and South African realities (pp. 285-311). Pretoria: J.L. van Schaik.

Vergnani, T., Flisher, A.J., Lazarus, S., Reddy, P. & James, S. (1998). Health-promoting schools in South Africa: Needs and prospects. Southern African Journal of Child and Adolescent Mental Health, 1(3), 44-58.

Visser, M.J. (1995). The need for AIDS education in schools: An analysis of knowledge, attitude and behavioural intentions of students. South African Journal of Education, 15(3), 130-138.

Visser, M.J. (1996). Evaluation of the First AIDS Kit, the AIDS and lifestyle education programme for teenagers. South African Journal of Psychology, 26(2), 103-113.

Visser, M.J. (2001). Lewensvaardighede as MIV/VIGS voorkomstrategie: ’n Sisteemteoretiese evaluering (Life skills training as HIV/AIDS prevention strategy: a systems theoretical evaluation). Unpublished doctoral dissertation. Pretoria: University of Pretoria.

Walker, M. (1997). Transgressing boundaries: Everyday/Academic discourses. In S. Hollingsworth (Ed.), International Action Research: A handbook for educational reform (pp. 136-146). London: The Falmer Press.

Walker, M. (1998). Action research and participatory research in South Africa. In J. Meaneron, J. Mulder, P. Prins & T. Smit (Eds), Theory and method in South African human sciences research: Advances and innovations (pp. 239-255). Pretoria: Human Sciences Research Council.

Werneburg, R.-P. & Graenburg, M. T. (1998). School and community competence-enhancement and prevention programs. In W. Damon, I. E. Sigel & K. A. Reuminger (Eds), Handbook of child psychology (5th edition), Vol 4: Child psychology in practice (pp. 873-904). New York: John Wiley.

World Health Organisation (1990). Research package: Knowledge, attitude, belief and practice on AIDS, Phase 1: The Questionnaire: The Global programme on AIDS, Social and Behavioural Research Unit. Geneva: WHO.

World Health Organisation (1992). School health education to prevent AIDS and sexually transmitted diseases. WHO AIDS Series 10. Geneva: World Health Organisation.

World Health Organisation (1993). School health education to prevent AIDS and STD: A resource package for curriculum planners. Geneva: WHO/GPA.

World Health Organisation (1995). School health education to prevent AIDS and sexually transmitted diseases. WHO AIDS Series 15. Geneva: World Health Organisation.

World Health Organisation (1997). Prevention of HIV/AIDS and related discrimination: An important responsibility of health-promoting schools. WHO Information Series on School Health. Geneva: World Health Organisation.

World Health Organisation (1999). Preventing HIV/AIDS/STD and related discrimination: An important responsibility of health-promoting schools. WHO Information Series on School Health. Geneva: World Health Organisation.

Full text version of SAHARA J available online at www.sahara.org.za