A desktop review of HIV and AIDS curricular responses in the Higher Education Sector – with a particular focus on the local, African And internationally published literature

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TABLE OF CONTENTS

EXECUTIVE SUMMARY

Purpose

The purpose of this review is to undertake a desktop analysis of all the published work on the integration of HIV and AIDS into the curriculum of higher education. This will determine what has been done in terms of integration; what work has been evaluated as successful; and what lessons have been learnt. The various questions that this review will answer include the following:

- Why do we need to include HIV and AIDS education into the curricula of higher education?
- How can this be done; and what factors influence the choice of model of integration?
- What are the various theoretical underpinnings that influence how HIV and AIDS education is viewed; and how does this, in turn, influence how it is conceptualised and operationalised at the higher education level?
- What successes and challenges have been reported internationally, in Africa and in South Africa; and how valid might these findings be for the South African context?
- What challenges exist in terms of the integration of HIV and AIDS into the curricula, specifically within the South African context?
- What conclusions can be made on the integration of HIV and AIDS into higher education curricula in South Africa, in order to inform the next step of the research process?

Methodology

Sixty-four studies were identified by conducting key word searches (HIV and AIDS education and higher education, HIV and AIDS and FET colleges, curriculum integration on HIV and AIDS in higher education and colleges, faculty and HIV and AIDS) in three main search engines: Science Direct, Ebscohost and Google Scholar. References contained in journals sourced from these search engines were then consulted, in order to provide more sources. In addition, back issues of the African Journal of AIDS research, the South African Journal of Higher Education, the South African Journal of Education, AIDS Care and SAHARA (Social Aspects of HIV and AIDS research) were consulted.

All identified studies were reviewed and grouped, according to whether they were: South African/African/international examples of HIV and AIDS integration into the formal curriculum at higher education level. Any that did not meet the criteria of being an example of integration into the formal curriculum of higher education were then discarded. In total,

106 publications were included. Details of the publication were then entered onto Excel spreadsheets, indicating the exact reference, a summary of the abstract, the model of integration, the theoretical underpinnings, the curriculum content, the curriculum outcomes deemed successful, and the lessons learnt (see Appendix A). References gleaned from these initial 64 studies yielded another 39 sources; therefore, in total 103 sources were consulted.

There could be many more instances of integration, which have not been published; and therefore, could not be accessed. The literature pertaining to HIV- and AIDS-related topics, such as gender, poverty, social injustice and so on, were not searched; since this would have been outside the brief given for this review. There may be courses/programmes that address HIV indirectly through these topics; but they could not be included. In addition, only HIV and AIDS content in the formal curriculum (i.e. registered, accredited and fee-paying courses) were consulted; since this comprises the focus of the review and the intended project.

Conclusions

- ✓ The literature supports the need to move beyond university-wide stand-alone modules, compulsory or not, that focus solely on the prevention and the protection of students' own health. Although these are needed, they are not sufficient; and they should be supplemented by discipline-specific HIV and AIDS education.
- ✓ As with any topic, didactic lectures do not promote deep learning. Several studies found that these lectures would need to be supported by experiential learning/interactive learning/service learning that allows students to interact with the reality of HIV and AIDS in their own communities/professions.
- ✓ Online modules/e learning open up many opportunities for HIV and AIDS education; and this field should be further investigated. No literature could be found on the use of the social media for HIV and AIDS education, for example.
- ✓ Service learning activities are reported to be excellent vehicles for HIV and AIDS education.
- ✓ HIV and AIDS education is best approached from a critical paradigm that recognises the need to challenge and change social norms/human behaviour/laws/policies/practices etc. – particularly in societies impacted by the pandemic. Such an approach would also help to transform curricula at higher education levels, in order to make them more responsive to South African societal needs.
- ✓ Viewed from a holistic perspective, HIV and AIDS education can be integrated into every discipline – examples from law, health sciences, education, science, engineering, medical sciences, economic sciences, arts were found in the literature –

but this needs to be done at the programme level, when the curricula are being designed/changed, in order to avoid repetition/omission of important knowledge. If done at programme level, then programme co-ordinators could ensure that all students enrolled in a specific programme (e.g. BSc, BEd, BCom) are exposed to the necessary HIV and AIDS learning opportunities; however, if done only at module level, then only students who take that specific module would be able to benefit.

- ✓ All content should be relevant to both the discipline and the context in which the students live and work. For example, teachers/doctors/lawyers have to be able to deal with constraints imposed by the socio-cultural norms on HIV and AIDS, sexuality, gender etc.
- ✓ There are instances of integration that appear to be promising in many institutions; but these need to be researched; and the results need to be disseminated across disciplines and institutions.
- ✓ There is a need to establish virtual and real learning ecologies/communities of practice for HIV education in higher education, preferably discipline-related.
- ✓ Due to the nature of the topic and the sensitive issues it covers, research should be primarily qualitative, in order to access the nuances and intricacies of student responses to HIV and AIDS-related issues.
- ✓ Integration needs to be supported/led by institutional management; and it should, therefore, be included in strategic management plans.
- ✓ Leadership at programme curriculum development level is also vital, in order to avoid duplication/omission of relevant content.
- ✓ Faculty needs to be supported, in order to integrate HIV content into specific modules. Such training should also address personal fears on addressing HIV and AIDS, personal biases, and stereotypical discourses, as well as discipline-related factors. Because the topic evokes emotional responses in students, some studies suggest the need for faculty to become competent in containing their own emotions and those of students before referral. Several studies suggest using an outside expert to help in curriculum development.
- ✓ Research needs to be built into all integration work. Several studies suggest a self-study action research approach would be ideal, in order to help faculty develop ways to integrate.
- ✓ Funding to support faculty training and re-curriculation/research needs to be budgeted for in strategic planning at faculty level.

1. INTRODUCTION

The HIV and AIDS pandemic is not something that higher education in South Africa can ignore. The most at-risk population for HIV infection is reported to be women between the ages of 20 and 34 (32.7%) and men between the ages of 25 and 49 (23.7%) (Shisana, Rehle, Simbayi, Zuma, Pezi, 2009), a range which includes the ages at which people are either pursuing studies or have recently graduated. More than 15% of the population aged 15-49 are living with HIV (Shisana et al., 2009). These grim statistics require a national, multi-sectoral response, in order to curb the spread of the virus.

The Higher Education HIV and AIDS Programme (HEAIDS) was established by Higher Education South Africa (HESA) in recognition of the fact that higher education 'has a critical role to play in the fight against the spread of the disease' (HESA 2008, 3). Higher education has a responsibility, not only to protect students from infection, but also to produce graduates who will create knowledge and promulgate discourse conducive to the eradication of the factors that drive the pandemic (HESA, 2008:5). Policy formulated by HESA calls for the prioritisation of *prevention* interventions by higher education institutions, and the provision of *care and support* for faculty and students (HESA, 2008).

Although the reported mean HIV prevalence for students (3.4%) is lower than that for the general population (HEAIDS, 2010b), higher education institutions still have a responsibility to ensure that students have the necessary knowledge to help them to make safe sexual choices, or to keep themselves healthy if they are already infected. This requires higher education to educate students on the biomedical facts of the virus and AIDS, on prevention measures, and also to develop a sense of compassion for those who are infected and affected (Wood, 2011a).

The provision of voluntary counselling and testing services, medical care and the implementation of human-resource practices that protect and support those infected/affected by the pandemic is recommended by policy; and, for the most part, this has been well implemented in South African universities (HEAIDS, 2010b).

However, the mission statements of most higher education institutions emphasise the importance of preparing students – not only for the market place, but also to develop into responsible citizens, people who are committed to contributing to and improving society, through the operationalization of values that promote the social good (cf.: http://ufh.ac.za/?q=ethical-principles-and-values; http://www.nmmu.ac.za/default.asp?id=163&bhcp=1; http://web.up.ac.za/default.asp?ipkCategoryID=1767&subid=1767&ipklookid=2; http://www.ru.ac.za/rhodes/introducingrhodes/visionandmission ; http://www.uwc.ac.za).

Since HIV and AIDS impact on almost every aspect of our lives in South Africa, in order to prepare graduates to live and work in such contexts, there is also a pressing need to integrate HIV and AIDS education into the curriculum. However, curriculum integration at tertiary level has remained a rather neglected area in HIV and AIDS research (HEAIDS, 2010b; HEAIDS, 2004), apart from the work of a few 'champions'.

Many education bodies, specifically in Africa, have issued policies addressing curriculum integration (van Wyk & Pieterse, 2006); but integration into the formal curriculum still remains the exception, rather than the rule (ACU, 2001).

Van Wyk and Pieterse (2006) highlight four major institutional responses to the epidemic: promoting and advancing leadership on HIV and AIDS; its prevention, care and support; mitigating the impact of HIV and AIDS; and research – with no mention of integration into the formal curriculum. Many universities address HIV education through extra-curricular activities, such as a part of the Orientation Programmes (HEAIDS, 2010d, http://heaids.files.wordpress.com/2012/10/08-5388-heaids-investigation-of-graduate-competency.pdf).

There is thus a need to develop an understanding of why and how HIV and AIDS should be given attention in the curriculum at post-school level. It is for this reason that HEAIDS have embarked on a project to build the capacity of academic staff at higher education to integrate HIV and AIDS issues into the various curricula. This project will also aim to support the development of new approaches to the integration of HIV and AIDS that will become an accepted and, therefore, sustainable feature of the curriculum in the long term.

2. PURPOSE OF THE REVIEW

Before beginning with any research into how best to integrate HIV and AIDS into the curriculum at tertiary level, it is first necessary to conduct a review of what has been published to date. The identification of best practices, as well as those that were not so successful, would help to inform the current research endeavour, rendering it more effective, relevant and evidence-based. The integration of any subject matter into the curriculum requires careful consideration of the following (Bitzer, 2011): The 'why' of teaching and learning (theoretical standpoints that underpin the outcomes of the process); 'what' should be taught (specific content to meet the outcomes); and 'how' it should be taught (pedagogical processes). It is also important not to forget the 'who' – what role do faculty and student attitudes, knowledge, skills and preferences play in curriculum decision-making?

The purpose of this review is to undertake a desktop analysis of the published work on the integration of HIV and AIDS into the curriculum of higher education. This will determine what has been done in terms of integration; what work has been evaluated as successful; and what lessons have been learnt. The various questions that this review will answer include the following:

- Why do we need to include HIV and AIDS education into the curricula of higher education?
- How can this be done; and what factors influence the choice of a model of integration?
- What are the various theoretical underpinnings that influence how HIV and AIDS education is viewed; and how does this, in turn, influence how it is conceptualised and operationalised at higher education level?
- What successes and challenges have been reported internationally, in Africa and in South Africa; and how valid might these findings be for the South African context?

- What challenges exist in terms of the integration of HIV and AIDS into the curricula, specifically within the South African context?
- What conclusions can be drawn on the integration of HIV and AIDS into higher education curricula in South Africa, in order to inform the next step of the research process?

3. METHODOLOGY

3.1 Identification of studies to be included in review

Studies were identified by conducting key word searches (HIV and AIDS education and higher education, HIV and AIDS and FET colleges, curriculum integration on HIV and AIDS in higher education and colleges, faculty and HIV and AIDS) in three main search engines: Science Direct, Ebscohost and Google Scholar. References contained in journals sourced from these search engines were then consulted, to provide more sources. In addition, back issues of the African Journal of AIDS research, the South African Journal of Higher Education, the South African Journal of Education, AIDS Care and SAHARA (Social Aspects of HIV and AIDS research) were consulted. Since HIV and AIDS comprise a fast-developing field, only sources dated from 2000 on were considered.

3.2 Process of analysis

All identified studies were reviewed and grouped, according to whether they were: South African/African/international examples of HIV and AIDS integration into the formal curriculum at higher education. Any that did not meet the criteria of being an example of integration into the formal curriculum of higher education were then discarded. In total, 106 publications were included. Details of the publication were then entered onto Excel spreadsheets, indicating the exact reference, summary of abstract, model of integration, theoretical underpinnings, curriculum content, curriculum outcomes deemed successful, and the lessons learnt (see Appendix A). Since only published, peer-reviewed work was included, the methodology used to evaluate the specific examples was deemed to be valid, and the findings therefore trustworthy. References gleaned from these initial 64 studies yielded another 39 sources; therefore, in total 103 sources were consulted. Saturation of knowledge was deemed to have been reached with this number, since repetition was evident. Many of the works drew on knowledge from each other, as is to be expected, given the relative scarcity of integration of HIV and AIDS into the formal curriculum at higher education level.

3.3 Limitations of the analysis

There may be many more instances of integration, which have not been published; and therefore could not be accessed. However, to judge the effectiveness of a specific example of integration, it would require evaluation. It is assumed that if an example had been evaluated, it would have been published; since publishing is one of the core areas of higher education. Also, the literature pertaining to HIV- and AIDS-related topics, such as gender, poverty, social injustice and so forth was not included; since this would have been outside the brief given for this review. There may be courses/programmes that address HIV indirectly through these topics; but they were not able to be included – such inclusion would have necessitated a review on each topic.

In addition, only publications containing information on HIV and AIDS content in the formal curriculum (i.e. registered, accredited and fee-paying courses) were consulted; since this is the focus of the review and the intended project. Consequently, publications on peer-education programmes, non-compulsory online HIV and AIDS courses for students, and other such programmes were not consulted.

4. THE RESULTS

4.1 Rationale for inclusion of HIV and AIDS into the curriculum

This section addresses the research question:

Why do we need to include HIV and AIDS education into the curricula of higher education?

The two usual reasons cited why HIV and AIDS should be included in the curriculum of higher education were as follows – 1) To safeguard the health of students, whether they be HIV negative or positive; and 2) to ensure that they have the necessary competencies to deal with the issue of HIV and AIDS in their respective professional arenas (HEAIDS, 2008; HEAIDS, 2010c). The reasoning here is self-evident; and it cannot be disputed. However, the literature also suggests that there are more complex reasons for addressing HIV and AIDS in the curriculum. As Wood (2011: 820) says:

> Given the comprehensive impact of the pandemic, and its influence on many aspects of peoples' personal and professional lives, every academic discipline should be able to find meaningful ways to integrate it into their programmes. However, while the bio-medical, support and human-resource initiatives seem to have been implemented on a comprehensive basis at most higher education institutions (HEAIDS 2010b), less attention has been paid to the transformation of the curriculum, to ensure that it enables graduates to become 'leaders in society ... able to address the impact of HIV and AIDS among all communities (HESA 2008: 15).

HIV and AIDS is an important vehicle for transformation and diversity (Volks, 2012). Due to the tremendous social challenges presented by the pandemic, Volks (2012:1) argues that they "reveal themselves as an intellectual conundrum; and therefore a core function of tertiary institutions is to address them." This requires not only taking action to address the health and professional needs of students, but also to recognise the potential that the inclusion of HIV and AIDS issues has for the general transformation of the curriculum to enable the institute to better prepare students to live in this global, diverse and challenging world.

According to Volks (2012:2), if higher education institutions can equip students to find ways to develop new understandings of the social issues in our country, which are intricately intertwined with the causes and consequences of HIV and AIDS, then positive social change should ensue. Hence, as the leading thinkers in a society, academics should be striving to find ways to meaningfully integrate HIV and AIDS into the curriculum and research (van Wyk & Pieterse, 2006). There is a need for academics to help students understand that AIDS is a universal problem, affecting every one of us: not just specific demographic groups; that we as humans need to understand the suffering it inflicts on those affected,

so that we can respond both personally and professionally in helpful ways; and that AIDS is thus an important aspect of all academic work (Volks, 2012:8).

The work of higher education is to develop students' ability to think critically and to question continually the *status quo* (Steadman & Adams, 2012). HIV and AIDS requires academics to open up dialogue on issues, such as race, class, gender and culture, issues that may make them feel uncomfortable, but are necessary to develop students' understanding of what it is to live in a diverse and socially unjust world. The exploration and critique of such issues leads to the creation of new knowledge, the core function of a university and further education (Crewe, 2012). Universities are perhaps the most important institutions in society in terms of knowledge creation; therefore, they have a moral obligation to apply this knowledge to pressing social problems (Elkana, 2009).

As van Wyk and Pieterse (2006:42) conclude in their survey of SADC institutions:

> The university's curriculum should reflect the institution's commitment to institutionalise HIV/AIDS as a primary object of research and development; and university resources should be mobilised to facilitate the institution's unique position to respond innovatively to the disease. Several institutions in this study make barely any mention of HIV/AIDS in their curricula...

This observation indicates the realisation that higher education is failing to educate society's leaders and future leaders to respond to the social, health, economic, developmental and political challenges that the pandemic brings.

A HEAIDS (2010d) research report also indicated that both graduates and employers thought that the former were not being prepared to deal with HIV and AIDS issues in the workplace. Graduates thought that they needed to be prepared to deal with the personal, human side of HIV and AIDS, particularly in the case of disclosure and the associated stigma. The same report indicated that, even where HIV and AIDS were integrated into the curriculum, this was done in a fragmented and uncoordinated manner. Skills that students and employers identified as being important to develop during the period of study, in addition to basic facts about the nature and prevention of HIV and AIDS, included:

- The development of interpersonal skills to deal with someone who is HIV positive, and to be able to respond with empathy to both infected and affected persons;
- The ethical and legal issues of dealing with HIV-positive employees/colleagues;
- The management of performance issues related to HIV and AIDS;
- Dealing with the stigma of HIV-AIDS;
- Handling the emotions of self and others.

All of these skills can be developed within the formal curriculum, as well as a deeper knowledge of the intricate interplay of the social, political, economic, historical and cultural causes and consequences of the pandemic.

Probably one of the fields that has most attempted to integrate HIV and AIDS into the curriculum, is teacher education, given that teachers are in a favourable position to influence young people, and that schools are targeted in educational policy, as sites of prevention, care and support (Department of Basic Education, 2012).

However, there is ample evidence that this is not being done at enough teacher training institutions (Katahoire & Kirumira, 2008). Where it is done, it is not really effectively preparing students to engage learners in meaningful learning about HIV and AIDS (Jacob et al., 2007; Nzioka & Ramos, 2008; UNESCO IIEP, 2001).

Similar findings have been reported for other fields, where graduates are likely to come into contact with HIV and AIDS as part of their daily work – e .g. medicine (Buskin et al., 2002); dentistry (Seacat et al. 2003) and nursing (Brown et al., 2002; Wight et al., 2006).

It is thus apparent from the literature that there is a pressing need to integrate HIV and AIDS within and across the curriculum, in order to prepare graduates to cope with the reality of it in the wider society.

4.2 Modes of integration for HIV and AIDS into the curriculum at higher education

This section provides answers from the literature to the research question:

> *How can this be done; and what factors influence the choice of a model of integration?*

4.2.1 Common terminology

It is first necessary to define some terms that are commonly found in the literature, and how they are used in this paper.

Mainstreaming: There are various definitions of mainstreaming (see e.g. UNAIDS, the World Bank and UNDP 2005; UNESCO, 2008b; SIDA, 2005); but the common link appears to be that it refers to a sector-wide response to the pandemic. Higher education policy provides guidelines on how to mainstream HIV and AIDS in the sector as a whole, covering strategic responses of all aspects, such as employee care, treatment and support; student care, treatment and support; prevention measures; and *curriculum integration*. HIV and AIDS thus should feature as a key component of strategic planning in higher education institutions; and analysis has to be done to determine how best the sector can develop effective curricular responses.

Institutionalising: Some literature (e.g. van Wyk and Pieterse, 2006) refers to the process of institutionalising the response to the pandemic. This pertains to the decisions each higher education institution takes with regard to their specific needs and contexts. An HIV and AIDS policy needs to be compiled for each institution, based on the guidelines promulgated by HEAIDS (2007), but adapted to their own circumstances.

Integration of HIV and AIDS: In this paper, integration refers specifically to the inclusion of HIV and AIDS-related outcomes in the formal curriculum, rather than institution-wide responses. The formal curriculum comprises both undergraduate and post-graduate programmes, the latter linking curriculum integration closely with research. Curriculum integration moves the response beyond prevention – to create a holistic understanding of how HIV and AIDS manifest in all areas of life – and thus, they have a universal impact on a nation's population.

4.2.2 Approaches to curriculum integration

Integration can be done in one of three main ways:

Stand-alone module on HIV and AIDS;
Integrated into one specific "carrier" subject; and
Integrated in more than one module, or infused throughout the programme.

Each of these approaches has advantages and disadvantages, as indicated in Table 1 below:

Table 1: Advantages and disadvantages of different forms of integration (Wood, 2009)

	ADVANTAGES	DISADVANTAGES
STAND-ALONE	Has a legitimate place in curriculum Can recruit and train lecturers Trained lecturers used as resource persons Specific timetabling allows all aspects of HIV to be covered Assessment of learning made easier	Space needs to be created New modules take a long time to approve Students may not link relevance of HIV to real life and other modules Difficult to find people who specialise in this and also know faculty specific subject matter Excludes other academics from developing capacity in this regard May only focus on bio-medical aspects, knowledge for prevention
INTEGRATED INTO CARRIER SUBJECT	Clear where and when to include and who is responsible for it Fewer specialised lecturers needed Assessment is facilitated	Need to decide what to drop to make time for HIV – may cause resistance May only allow certain aspects to be covered Cannot guarantee faculty assigned to module will be motivated May be ignored in comparison to other learning outcomes of module
INFUSED INTO SEVERAL MODULES	Curriculum revision usually not needed Can cover a wide range of HIV aspects in different modules Lecturers complement each other with knowledge, skills Sharing of responsibility promotes collaboration Students see the relevance of HIV from different perspectives It becomes the responsibility of many	Needs careful analysis of existing curriculum to organise coherently It may disappear in reality when teaching takes place Many faculty need to be trained Sharing of responsibility can become shedding of responsibility Assessment more complicated Can result in duplication, omissions

The literature suggests that there is a need to adopt a holistic view of HIV and AIDS in the curriculum; therefore a stand-alone module, if used, needs to be supplemented by some form of curricular infusion at programme level (Wood, 2011b).

Van Wyk and Pieterse (2006:47) put it succinctly:

> Some higher education institutions ... have implemented generic HIV/AIDS modules as compulsory courses for all their students. This is commendable, yet for an institution to provide intellectual leadership, and to produce individuals effectively engaging with the epidemic, a generic HIV/AIDS model is not sufficient. In addition to a compulsory course, a university must also provide education on HIV/AIDS, which *is profession-based in nature* and *skills-equipping in quality*. Thus, higher education must not only study the disease in depth within each profession and discipline, but must also equip the student with knowledge and skills to effectively engage with the epidemic. A generic HIV/AIDS module simply will not facilitate enough meaningful engagement with the disease, but could still be utilised as a [means for] providing students with an introductory exposure to the epidemic and its attendant social complexities.

In any case, the disadvantages of each method need to be carefully considered, and provision made to minimise them. Also, capacity-building of lecturers needs to be undertaken to support integration (HEAIDS, 2010c). In South Africa, there have been varied attempts to integrate HIV and AIDS into the curriculum across disciplines; but many academics still do not see this as a pressing issue (HEAIDS, 2010c; Wood, 2011a). Integration also works best when it is worked out at a programme level (Wood, 2011a), in order to ensure adequate coverage and the omission of duplication

4.3 Theoretical frameworks informing curricular responses to HIV and AIDS education

This section addresses the research question:

What are the various theoretical underpinnings that influence how HIV and AIDS education is viewed; and how does this, in turn, influence how it is conceptualised and operationalised at higher education level?

It is clear from the literature reviewed that the theoretical lens used to think about HIV and AIDS education influences, according to the way in which it is integrated into the curriculum. The choice of theory usually depends on the discipline concerned and the underlying theoretical and pedagogical theories on which the curriculum was developed. In developed countries, with a low HIV prevalence (e.g. USA, Canada, Australia, Western Europe), a more technical-rational approach to HIV education at tertiary level seems to be the norm; since the main focus is to protect students in their personal capacity, rather than to position HIV and AIDS as a social issue (Ergene et al, 2005).

However, in countries where HIV prevalence is of epidemic proportions, a more nuanced and critical approach is preferred.

Some of the common theories of change are given in Table 2 below, with those contained in Table 2 being predominant and reasonably effective in low-prevalence countries, and those in Table 3 being more suited to high-prevalence settings (Wood, 2013).

Table 2: Theories based on behaviouristic assumptions

THEORY	BASIC ASSUMPTIONS	RELEVANCE TO THE AFRICAN CONTEXT
AIDS Risk reduction model (e.g. Fisher & Fisher, 2000)	A person must first *recognise* the risk of HIV infection, and then make a *commitment* to change. This second step is influenced by factors, such as their self-efficacy beliefs, the information they have about the virus, the prevailing social norms, whether they perceive the change as enjoyable or not and how effective they believe it would be. The final stage is *enactment*, where they seek information and engage in safer sexual practices.	Implies the individual actually possesses the necessary skills to effect change and has a high level of self-efficacy. Although most South Africans have access to information about the risks of unsafe sex, they may not possess the skills to stand up to peer pressure, or to make the desired change, due to cultural influences, gender inequalities and poverty. This theory does not take into consideration the other factors influencing sexual behaviour in the African context, such as poverty, gender imbalances and traditional beliefs about sexuality which are very deep rooted.
Diffusion of Innovation model (e.g. Bertrand, 2004)	According to this model, change is influenced by the efficacy and availability of communication channels, the opinion of community leaders and the time/process of the communication.	Campaigns such as *Love Life* are based on mass communication of certain norms and beliefs about behaviours, but the danger is that "overkill" occurs and youth no longer really pay attention to it. Criticism of LoveLife type programmes includes the fact that although these programmes portray the ideal youth as being responsible, able to make informed decisions and to act on them, the truth is that many youths in South Africa do not have the power to change, due to incapacitating economic circumstances. They live in environments, which are characterised by gender violence and male domination, and find it almost impossible to live up to the ideal youth portrayed by these campaigns. Therefore, the information cannot be translated into action.
Health Belief Model (e.g.Obregon, 2000)	The influencing factors here depend on 4 beliefs of the individual, namely: • How susceptible they perceive themselves to be to HIV infection • How severe they consider the harm caused by infection to be • How they believe they will benefit from changing their behaviour • What barriers they perceive to stand in the way of change	Presupposes that the person has the ability and educational level to process information in a logical way. In South Africa, especially in the rural communities, there are a lot of cultural beliefs and myths which influence how people behave e.g. condoms keep the sickness inside of you or that you have to have many girlfriends to prove you are a man. From a youth perspective, they may consider themselves to be "untouchable" – the young live for today and believe that sickness is for old people. The hopelessness and sense of fatality that people may possess in light of the debilitating circumstances in which they live also detract from their ability to process information in an objective manner. There are many social and cultural barriers to changing sexual behaviour in South Africa, especially for women, therefore this model may not be very successful in bringing about behavioural change.

Social Cognitive Theory (e.g. Bandura, 2004)	This theory is based on the premise that behaviour is influenced by both personal and environmental factors. People learn through experience and/or from observing others. Change in behaviour is determined by: • How much the person values the perceived outcome • How much the person believes in their own ability to change	Presupposes a high sense of self-efficacy and the presence of appropriate role models. Many of the role models (parents, community members, politicians) that young people are exposed to in South Africa do not live out the desired values or model responsible sexual behaviour for various reasons.
Stages of change model (e.g. Munro et al, 2007)	This theory postulates that change occurs as a six stage process: 1. Pre-contemplation – not aware of risk 2. Contemplation – thinking about changing 3. Preparation – makes intention to change 4. Action – first six months of behavioural change 5. Maintenance – maintained change for 6 months Termination – no danger of relapse evident	Does not really take context into consideration and focuses only on the individual. It describes the process of change without stating any of the factors which influence it.
Theory of reasoned action (e.g. Montano et al., 2008)	This theory presupposes that the individual has an intention to change which is influenced by two factors: 1. Attitude: the change is perceived to be beneficial 2. Subjective norms about behaviour: they believe that others will view the behaviour in a positive light.	Assumes that abstinence, for example, will be perceived as a desired state and will be beneficial, but in the SA context the social pressures facing youth to have sex often outweigh the view that abstinence is desirable. Also, the act of having sex is mostly not a reasoned action, but an impulsive response to a situation and physical arousal. Youth tend not to be able to delay gratification and act on the moment e.g. will not delay sex until a condom is available.

Table 3: Theories based on socio-structural assumptions

THEORY	BASIC ASSUMPTIONS	RELEVANCE TO THE AFRICAN CONTEXT
Empowerment theory (e.g. Zimmerman, 2000)	Social change happens through dialogue to build up a critical perception of the social, cultural, political, and economic forces that structure reality, and by taking action against forces that are oppressive.	Change is limited by social/economical/environmental factors and these need to be addressed by integrating HIV education with economic and social development. Participation is required from all concerned to negotiate social norms and environmental cultures that will support safer sexual choices. This is very applicable to South Africa.
Ecological Systems Theory (e.g. DiClemente et al, 2007)	Recognize that successful activities to promote health, including HIV risk reduction, not only address changing individual behaviours, but address multiple levels surrounding individuals, such as families, communities, institutions, and policies.	This is more applicable to the South African context, where social norms and structural issues fuel the epidemic.
Theory of Gender and Power (e.g. Wingood & DiClemente, 2000)	Social-structural theory addressing the wider social and environmental issues surrounding women, such as distribution of power and authority, and gender-specific norms.	Very applicable in South Africa, where gender is a main driver of HIV infection.

Although these theories refer to behavioural change, which may not be the direct aim of HIV education within a specific curriculum, they offer a way of thinking about HIV and AIDS that should influence what curriculum developers think necessary to include, and what HIV and AIDS education actually comprises.

4.3.1 Theories based on a critical approach to teaching on HIV and AIDS

Within the South African and international literature, criticism of a behaviouristic approach to HIV and AIDS education is prevalent (e.g. Aggleton, 2002; Baxen & Breidlid, 2009; Baxen & Wood, 2013; Francis, 2010; Macedo, 2006; Morrell, 2003; Rosiek, 2006; Semali, 2006; Wood, 2012). There is strong support for a more critical approach to HIV and AIDS education that positions it as a social justice and developmental issue. Such a paradigm recognises the complexity of the pandemic and acknowledges that there are no uniform and final solutions. It advocates continual critique and disruption of existing ideologies and structures, an approach that requires the critical thinking that is expected at higher education level (Elkana, 2009).

A critical paradigm argues that comprehensive HIV and AIDS education requires a global understanding of the material conditions that produce social inequalities and render some populations more vulnerable than others (Macedo, 2006, xii). Graduates who will fill professional and/or managerial/leadership roles in society should be educated about the discriminatory political, social, economic and health practices within and across their disciplines that create fertile terrain for HIV transmission. For example, gendered social practices are one of the undisputed drivers of HIV infection (Brown, Sorrell & Raffaelli, 2005; Dowsett, 2003; Lesch & Kruger, 2005) and the raising of critical awareness (Freire, 2004) around these should be embedded into the curriculum of all students, in a discipline-

appropriate manner. HIV and AIDS education is complex, and necessarily touches on almost all aspects of our lives (Karim, Karim and Baxter, 2010: 45) – sexuality, human rights, social interaction – and on our role as responsible citizens. If the pandemic and education around it is framed in a critical paradigm, as described above, inclusion into the curriculum can only help to transform higher education programmes to be more relevant to the current South African social, economic and health contexts**.**

From the perspective of a critical paradigm then, HIV and AIDS education can be integrated into the curriculum by addressing the causes and consequences of the pandemic – for example, all social justice issues, including gender inequalities, such as poverty; legal implications; developmental implications; management and workplace issues; social and psychological issues; ethical issues; human rights issues; health issues. In short, every faculty could find some meaningful link to HIV and AIDS education (Wood, 2012) from a disciplinary perspective. HIV and AIDS can also be used as meaningful examples, when teaching discipline-related concepts (e.g. Craig, Xia, & Venter, 2004).

4.4 Curricular responses of Higher Education to HIV and AIDS

This section will address the research question:

> *What successes and challenges have been reported internationally, in Africa and in South Africa; and how valid might these findings be for the South African context?*

The following sections discuss approaches from an international, African and South African perspective. The respective spreadsheets in Appendix 1 give an overview of the literature consulted, in terms of mode-of-delivery of the curriculum; curriculum content; curriculum outcomes; and lessons learnt. The sections below cover the same content; but the discussion is presented in an integrated way.

4.4.1 Curriculum integration of HIV and AIDS: international literature

A comprehensive survey of the international literature revealed very little actual examples of curriculum integration. Most of the articles focused on research that supported a need for curriculum integration, rather than reporting on any actual programmes/modules. Not surprisingly, most of the publications focused on medical/health education for doctors and nurses (Williams et al., 2004; Mak & Yui et al., 2010), as well as pharmacists (Balfour et al., 2010), health-care workers (Burr et al., 2006), dentists (Giuliani et al., 2011; Rohn et al., 2006; Seacat et al., 2009) and even veterinary students (Davis, 2008).

The literature on teacher education was not examined in depth; since previous HEAIDS reports have presented detailed literature studies on that (HEAIDS, 2010a). Since most of the studies were conducted in low-prevalence countries, the focus tended to be on the preparation of students with HIV and AIDS information relevant to their intended profession, and the reduction of the stigma and the increasing empathy of graduates towards HIV positive people with whom they may have come into contact during their work.

- ***Integration to increase discipline-specific HIV and AIDS knowledge***

Examples of these types of programmes were not always included in the formal curriculum, but tended to be extra-curricular. For example, In Iran, **dental students** volunteered to spend two days at a centre for disease control, observing HIV and AIDS patients being consulted; and they then attended a two-day workshop on infection control.

This intervention significantly increased students' knowledge of and attitude towards HIV and AIDS, in terms of treating HIV positive patients and the implementations of Universal Precautions (UP) (Jafari et al., 2011). Other articles highlighted the need for the inclusion of HIV and AIDS into dentist-preparation programmes, in order to increase graduate knowledge on the implications of treating an HIV positive patient; but no programmes were evaluated (Seacat & Inglehart, 2003: Seacat et al., 2009). Zaninovic et al. (2013) showed that didactic components (lectures) need to be supplemented by behavioural components (e.g. role plays) and clinical components (actually interacting with patients) – in order to render the curriculum more effective in its implementation.

Within the context of **nursing education**, Mak and Yui (2010) found that knowledge-only programmes were rendered more effective when combined with the opportunity to come into contact and interact with HIV-positive patients and their caregivers. Those students, who received knowledge-only programmes, did not retain the information as long as those who had interacted with patients. Williams et al. (2006) also suggest that didactic lectures need to be supplemented by actual contact with HIV-positive patients, or with the opportunity to observe other nurses interacting with them. A four-day course for nurses in India proved to be helpful in reducing their fears on interacting with HIV-positive patients (Pisal et al., 2007).

Within **veterinary science** (Radford & Davies, 2008), HIV is considered to be an important topic; but little integration into graduate programmes has occurred. Veterinary students need to learn about HIV and AIDS, to be able to dispel any misconceptions about inter-species transmission; to be able to advise HIV-positive clients on which pet choice would be suitable for them – given their health problems; to advise employees/fellow workers on the dangers of HIV-positive people being bitten by animals; to identify discrimination issues in the workplace. However, no research on an actual programme could be found. The recommendations are based on the literature on the increased risk of zoonitic diseases for HIV-positive people.

In the USA, 650 different Bachelors and Master's students of **social work** programmes were surveyed, in order to determine their HIV and AIDS status (Rowan & Shear, 2011). The 153 participants that responded indicated that HIV and AIDS-related topics were covered in foundation-content modules, such as human behaviour in the social environment, populations at risk, and social-work practice, delivered through the medium of guest speakers, lectures and reading material.

In addition, field placements were used to familiarise students with HIV-related matters. Textbooks that covered HIV material were also insisted on. However, the study concluded that more HIV/AIDS-specific content is needed to adequately prepare student social workers for practice. Natale et al. (2010) propose resources to prepare social workers to address HIV and AIDS, that they claim are globally relevant for social-work practice. They provide information and resources for addressing HIV and AIDS-related issues, such as poverty, the stigma, and the lack of political power. The suggestions also cover working with vulnerable groups (women, men who have sex with men, sex workers, injection-drug users and orphans/vulnerable children).

However, these are suggestions do not form part of an actual course. These same authors conclude that the social-work curriculum in many countries does not include enough HIV-related content. In the West Indies, Sogren et al. (2011) developed a comprehensive social-work curriculum that incorporated training on how to work more closely with the health professions. This curriculum also raised awareness of the intricate interplay of social, health, cultural, psychological and economic issues that social work clients face – as a result of HIV. This was not just an add-on to the existing curriculum, but a total revamp, which placed HIV as a critical issue of contemporary social work practice.

In terms of **psychology courses**, Bristow (2000) came up with some recommendations for curriculum integration, based on a literature survey, and her own experience as a lecturer. She suggests HIV and AIDS content should prepare students to deal in an empathetic way with HIV-positive clients, who may also be associated with high-risk populations, such as injection-drug users, sex workers and homosexuals (a conclusion valid mostly in developed countries with non-generalised epidemics). She also suggests the use of outside speakers, where faculty do not feel adequately trained to deal with the content and the introduction of HIV and AIDS-education opportunities through service learning.
Research on the psycho-social implications of HIV can be used to engage students to think critically about HIV as a social issue.
Another area where the need for HIV and AIDS education was highlighted was in **dance education** and the **performing arts** (Risner & Thompson, 2005). The performing arts are an excellent vehicle for addressing the social-justice aspects of HIV and AIDS, such as the stigma, gender inequality and homophobia (Douglas et al., 2000). Knowledge is needed on the physical health, emotional issues and psychological issues that HIV-positive performers face, given that up to 50% of male dancers are homosexual, and the high incidence of HIV among this population in the USA (Risner, 2002).

Tao and Mitchell (2010) used photo voice as a strategy to engage Chinese students of **English** to explore HIV and AIDS, and how they could respond from a disciplinary perspective. They conclude that this strategy could be used with a wide range of subjects in Faculties of Arts and the Humanities.

Teacher education has perhaps received the most attention in terms of HIV and AIDS education, specifically in high prevalence countries; but this has been discussed in depth elsewhere (see HEAIDS, 2010a for a concise overview of national/international literature, http://heaids.files.wordpress.com/2012/10/03-4979-hesa-hiv-and-aids-in-teacher-education-cs4.pdf). Consequently, it will not be included in this report. However, on-line learning courses to prepare pre-service teachers as preventive agents are a possibility worth mentioning. California State University, partnering with Langton University (traditionally black), and the University of Puerto Rico (Spanish-speaking), designed a bilingual online course for preventive education that student teachers had to deliver to high-risk children between the ages of 12 and 17.

They were able to evaluate it, as they presented it, and to increase their own knowledge of HIV and AIDS, and discuss with other students the problems that relate to HIV and AIDS in the public schools (Mitchell et al., 2006). The curriculum was based on the principles of health-behaviour change; and it covered the socio-ecological, structural, interpersonal, behavioural,

emotional, scientific and cognitive aspects. Some of the lessons learnt from this programme include the need to ensure that software is compatible across the institutions; that cultural issues are attended to; that project-leaders need to communicate face-to-face at some points, in order to build relationships. Overall logistics must be clear and simple and the course presentation dates must be aligned to the respective academic calendars. No details on evaluation were given, however.

Integration to reduce stigma towards HIV positive and HIV-affected people

Again, in **dentistry,** the importance of enabling students to feel comfortable interacting with HIV-positive patients is stressed. Rohn et al. (2006) recommended, based on research done with undergraduate dental students, that they be taught how to discuss confidential information, and that they actually be given the opportunity to interact with HIV-positive patients while training. This becomes vital, given that one study (Giuliani et al., 2011) found that 47% of dentists still refused to treat HIV-positive people. Similarly, when **nurses** were given the chance to interact with HIV-positive patients during training, it significantly reduced their stigmatic attitudes and negative effect (Mak & Yui, 2010).

Another study (Williams et al., 2006) found that nurses, who attended a 5-day workshop of didactic lectures, with the opportunity to discuss their feelings and values in relation to HIV and AIDS, reported increased HIV knowledge, empathy for these patients, and a desire to help them. **Health-care providers** who received 12 x four-hour workshops, aimed at increasing their knowledge on perinatal HIV transmission, and their ability to counsel pregnant women who were HIV-positive, also became less stigmatic and more caring towards patients (Burr et al., 2006).

In South America, Balfour et al. (2010) found that the completion of an HIV programme aimed at strengthening the ability of **health science students** to clinically manage HIV, helped to increase the HIV knowledge of public health students.

The **performing arts** is another area where HIV and AIDS education is needed, to reduce the stigma surrounding HIV-positive performers, who are supposed to portray the ideal body, and to whom physical injury or illness could mean the end of a career (Risner & Shear, 2005). Any illness or injury in these professions is stigmatised. A survey of dance courses in the USA indicated that only 37% actually had HIV components in their courses, mostly focusing on universal precautions and other biomedical issues (Risner & Shear, 2005). However, 87% of the respondents indicated that they would welcome more guidance on how to integrate HIV and AIDS into the curriculum.

Barriers attributed to the absence of integration included lack of time and expertise, and the stigma associated with illness/injury and homosexuality.

In summary, the international literature indicates relatively little published work on curriculum integration at higher education level, probably because of the low incidence of HIV in most of these countries, and the fact that it affects mostly minority populations, rather than being a generalised epidemic. In these countries, HIV is mostly regarded as a health issue; and therefore, it appears that the health professions have the greatest need to prepare students to address HIV-AIDS in their profession.

4.4.2 Curriculum integration of HIV and AIDS: African literature

As Otaala (2006) points out, most universities in Africa have not prioritised the integration of HIV and AIDS into core curriculum: the response tends to have been mostly in the health/medical faculties, in line with international trends. Kenyatta University, Kenya, however, offers a wide variety of HIV and AIDS-related courses at all levels, and additionally, a compulsory core module for all students. No information as to content is given; but these courses are popular with students, since they add value to their CV (ACU, 2001).

Katajivi and Otaala (2004) report on an initiative that seemed to aim at integration of HIV and AIDS into the curriculum, undertaken in 2001 by the then University of Natal and the UNDP. This programme aimed to train individuals from each of 31 African universities in HIV/AIDS and Development. The main aim was to contribute to the prevention of HIV/AIDS amongst students and staff; and the primary objectives were: 1) To enable participants to design and implement and/or elaborate a life-skills teaching programme for first-year students at their own universities, in order to provide students with the means to prevent themselves from being infected, and to be socially responsible; 2) To enable participants to design and implement discipline-based courses that lead to the production of graduates that have competency to apply knowledge about HIV/AIDS in their professional work.

To this end, they would also aim to train academic staff in the methodology and methods of curriculum development and teaching HIV/AIDS; to empower university teachers to integrate HIV/AIDS into their own teaching, and to provide similar training to their university staff; to enhance research related to HIV/AIDS in the university and among other related stakeholders. However, no reports on this project could be found; so it cannot be determined whether it was implemented.

Van Wyk and Pieterse (2006) compiled a report for the University of Pretoria's Centre for the Study of AIDS, which reported on the Southern African universities response to the pandemic, in which curriculum integration was found to be minimal. One of the recommendations from this report reads as follows (2006: iii):

> Universities have a vital responsibility of providing intellectual leadership, and therewith producing informed and empowered individuals. This should be reflected in an institution's curriculum development, research activities, and resources devoted to HIV/AIDS.

Table 4 summarises the curriculum responses contained in this 2006 report, plus information from the more recent 2010 report of the Association of African Universities (AAU, 2010).

Table 4: Curriculum responses of specific African institutions of higher education (South Africa excluded) (ACU, 2001; Migumu & Nabadda, 2010)

Institution	Curriculum integration of HIV and AIDS
University of Botswana	Master's degree in counselling with HIV/AIDS component, but not in other disciplines – since efforts at integrating HIV/AIDS into teaching and research at the university have not been concluded in a systematic and concerted fashion
University of Namibia	Compulsory module for all students with an HIV component – not integrated into disciplines
University of Kinshasa (DRC)	Integrated into the curriculum of School of Medicine only
University of Kenyatta	Compulsory HIV module for all students
University of Lubumbashi (DRC)	Integrated into the curriculum of School of Medicine only
University of Lesotho	Curriculum integration is mandated by policy but not happening
University of Malawi	Generic HIV/AIDS module was developed in 2005 and curricula updated to match
University of Mzuzu (Malawi)	Compulsory HIV/AIDS course is provided for final year students in the Education Faculty of the university – plans to expand to other faculties
University of Kyambogo	Compulsory HIV module for all students
University of Rwanda	Compulsory HIV module for all students
University of Cocody (Cote d'Ivoire)	Compulsory HIV module for all students
University of Gaston Bergen (Senegal)	Compulsory HIV module for all students
University of Mauritius	Undergraduate elective course on HIV/AIDS, while on postgraduate level the university offers a graduate programme in social work which includes a focus on HIV/AIDS-related subjects.
University of Tanzania	Stand-alone HIV and AIDS module
Sokoine University of Agriculture (Tanzania)	HIV/AIDS in some undergraduate and graduate programmes
Midlands State University (Zimbabwe)	An HIV/AIDS module mainstreamed into the university's formal curriculum, and this module, as well as a Gender module, is a compulsory course for all students.
University of Zimbabwe	A multi-disciplinary approach to HIV/AIDS in the university curriculum (no details).,
Chinhoyi University of Technology	Workshops for all students and staff are available – not in formal curriculum

It, therefore, appears that curriculum integration is neglected in most institutions; although it is highlighted as vital in their respective policies (AAU, 2010). There are no data on the compulsory modules that many institutions present; but it is clear that there is also a need to integrate such modules into the disciplinary curricula (van Wyk & Pieterse, 2006). Limited access into the academic curriculum was cited as one of the main barriers by the Association of Commonwealth Universities' report (ACU, 2001) on curriculum integration of HIV and AIDS, as well as lack of leadership and expertise in this regard.

The AAU (2010: 35) report states:

> Tardiness in integrating HIV and AIDS into tertiary education curricula is itself a major obstacle to total response to the challenge of HIV and AIDS. The slow pace of Institutional bureaucracy is the major cause of this. In the Francophone institutions, strict adherence to regulations (the relative lack of institutional autonomy) is the problem**.**

The AAU report (2010) states that 48% of tertiary institutions in Africa (South Africa included) are in the process of developing stand-alone courses in HIV and AIDS; 39% offer a full course in specific disciplines (mostly health-related and teaching); and 13% already have stand-alone compulsory courses. These figures are disconcerting; since stand-alone courses are not sufficient to prepare graduates for dealing with the implications of HIV and AIDS in their professional and personal lives; and there is a need to undertake "curriculum reform to develop the new skills needed by graduates in an AIDS-affected society" (AAU, 2010:22). However, there were no specific recommendations on curriculum integration.
The following Table 5 is extracted from the AAU (2010:23) report, showing the status of HIV and AIDS stand-alone models in the formal curriculum:

Table 5: status of HIV and AIDS stand-alone models in the formal curriculum (extracted from the AAU (2010:23) report)

Sub-Region	Level 1 (generalized, compulsory course)	Level 2 (compulsory course only in specific fields of study)	Level 3 (still in the pipeline)
Western Africa (Anglophone)	University of Ibadan (a compulsory course for first-year undergraduates)	University of Ghana, Legon (Institute of Adult Education)	Kwame Nkrumah University of Science and Technology, Kumasi University of Education, Winnebago University of Agriculture, Abeokuta University of Ilorin University of Port Harcourt
Eastern Africa	Kenyatta University National University of Rwanda	University of Dar es Salaam (health sciences) Nkumba University, Uganda (social sciences)	University of Burundi Daystar University Maseno University Kigali Institute of Science and Technology Kyambogo University Makerere University
Francophone West-Central	Université de Cocody (medicine and dentistry)		University of Dschang Université d'Abobo

It may be assumed that the programmes in the pipeline in 2010 have now been implemented; however no related publications could be found. An example of a stand-alone compulsory module is the one presented at the University of Namibia (McGinty & Mundy, 2008). The HIV component consists of two mass lectures per week for five weeks, run by the Faculty of Medical and Health Sciences and the Faculty of Social Work and Community Development. The aim is to provide knowledge and to help students to adopt a positive approach to HIV and AIDS, and to discourage unsafe sexual behaviour. The lectures are supplemented by a reader. The content focuses on a medical orientation to HIV, followed by the psycho-social factors that contribute to the spread of the disease within the university context.

Research by McGinty and Mundy (2008) has indicated that the course had little positive worth for BEd students, in terms of knowledge, attitude, skills development and behavioural change. In fact, most of them could not relate it to their education course. It may be assumed that students from other disciplines could not relate it to their specific course either.

With regard to HIV and AIDS integration into carrier modules in specific disciplines, the report indicates some progress in this regard – especially in the integration of discipline-related issues, such as gender, development, migration, child and family wellness etc. through an HIV lens. The report concludes however:

> The ad-hoc model is widespread; and [it] is known to be fast gaining ground. In every higher institution, individual teachers (having gained improved awareness of the magnitude of the threat of the epidemic) are introducing HIV and AIDS issues into their courses. What is needed is for this unconscious energy to be fully harnessed and harmonized for systematic development of formal HIV and AIDS curricula in higher institutions (2010: 26).

The limited number of articles produced on this topic in the rest of Africa testifies to the lack of curriculum integration. Again, teacher education seems to have received the most attention, given the teachers' role as powerful mediators of the prevention knowledge and skills, and an important source of care and support (HEAIDS, 2010a; Mugimu & Nabadda 2009).

Uwakwe (2000) conducted experimental research on nursing students who had done an HIV module in their course; and this researcher found that the level of HIV/AIDS knowledge, positive attitudes towards HIV/AIDS disease and diagnosed patients, informed beliefs about the cause of HIV/AIDS and the condition of patients, and improved HIV/AIDS preventive behaviours in personal and professional practices had resulted in all these cases. The course consisted of a 7-week, 28-session course on knowledge about HIV/AIDS: The nature, mode of HIV transmission, outcome of HIV infection, risk factors, and preventive measures in their personal and professional lives. A sensitization problem-based participatory approach to learning was adopted, supplemented by the dissemination of print and audio-visual material.

Chilisa, Bennell and Hyde (2001) in a survey of practices at the University of Botswana reported isolated attempts in the Faculty of Social Sciences by lecturers to infuse HIV and AIDS into their teaching; but they gave no details on how this was done, apart from indicating that the Department of Law introduced seminars on HIV and AIDS and the law. They did, however, comment on the fact that lecturers who are attempting to integrate are usually the ones who have received further exposure to HIV and AIDS education through their connection with international agencies or other research bodies.

In Nursing, most of the lecturers infuse professional aspects into their lectures; and they have a three-credit course on it; and student projects are focused on HIV and AIDS in a couple of other departments. The authors recommend that it be infused into all curricula, and that a professional expert be appointed to do this.

At the University of Ghana, isolated attempts to infuse such information into the existing curricula have occurred, mostly from a medical approach in the health sciences (Anarfi, 2001). Other Faculties do address it (e.g. Gender and the Law; social work/psychology/women's studies etc.); but there is a need to equip all lecturers to introduce it meaningfully.

More recently, Tamale (2012) reported on the integration of HIV and AIDS material through a course on Gender, Law and Sexuality at the University of Zimbabwe. Although the focus is on sexuality, the course necessarily helps students to gain a wider understanding of HIV and AIDS and the stigma surrounding it.

Qualitative analysis of this course indicates that it is successful in changing student views on sexuality, gender and the law, empowering them to apply this understanding to their practice of law – and hopefully in their private lives also.
To summarise this section, the literature that outlines and evaluates curriculum responses in Africa is very limited. Most of the articles discuss the need for HIV and AIDS integration, often with research to show the lack of student/faculty knowledge; but few actually describe what is being done, and what effect it is having. Many of the articles/reports make recommendations; but few of these are based on empirical research.

4.4.3 Curriculum integration of HIV and AIDS: South African literature

A report by HEAIDS in 2007 revealed several approaches to HIV integration at specific institutions. This document is comprehensive; and the results do not need to be repeated here. However, the later HEAIDS (2010e) research report of best practices at South African Higher Education Institutions did not reveal much progress in terms of curriculum integration, apart from stand-alone modules for all students, outside disciplinary curricula (e.g. UCT, Me and AIDS module). This report highlighted the fact, that while preventive work was being adequately done with students, there was little integration into the curriculum, to prepare students to become HIV-competent graduates entering the workplace (see http://heaids.files.wordpress.com/2012/10/09-5470-heaids-good-prevention-practice.pdf).

Another subsequent innovation is an online module for students (voluntary only) at Nelson Mandela Metropolitan University (Steenkamp, Busolo & von der Marwitz, 2012). The HEAIDS (2010e) report concluded that HIV integration is happening in many different ways in most of the 23 universities surveyed; and it is being done, according to interviews with 22 "champions". However, it is very much dependent on the work of such champions; as most academics either do not see the need to integrate, or do not even know how to begin.
Training of academics is thus vital; and this will not happen without the support of institutional leadership, and also leadership at programme level.

An earlier report, with no specified author (Anon, 2002), made several suggestions, as to how FET colleges and universities could promote health issues through the curriculum. These suggestions seem to be based on a successful programme in American community colleges. They propose that every faculty needs to integrate HIV and AIDS education into its degrees in a manner relevant to student-career paths and marketability. This report stresses the importance of making HIV and AIDS courses relevant to students' lives, and to shape them as critical, compassionate citizens. The importance of institutional leadership in any attempt to integrate is stressed.

Martin and Alexander (2002) also conducted a review of tertiary institutions' responses to HIV and AIDS in South Africa; and they concluded that there is no single best model in existence. Most have responded in various ways in terms of student and staff prevention and care; but very few have made any curriculum changes – and no details of these were given.
Lesko (2007) conducted a case study at the University of KwaZulu-Natal to ascertain how it was being integrated across the various faculties. She observed classes and interviewed students and administrators; and she concluded that there were two main approaches: technical-managerial and interdisciplinary-activist.

She advocated that the latter approach to HIV and AIDS education be implemented to help faculty/students to rethink the assumptions, beliefs and stereotypes that divide our society and promote the stigma of AIDS.

Lecturers who viewed HIV and AIDS as a social-justice issue were able to integrate it across a variety of courses, which addressed discourses, theories, actions, attitudes and knowledge. When HIV and AIDS are aligned with these views, this helps to transform the curriculum to bring it more into line with the reality of South African society. The techno-managerial approach resulted in compulsory, stand-alone modules that only focused on prevention, the stigma, and how to work with HIV in a professional setting, situating it as a health problem, and thus missing out on its transformative potential.

Barnes (2000) reported on a case study at the University of the Western Cape (UWC), where HIV was being integrated into dentistry (infection control), social work, community development, psychology, physiotherapy, public health and nursing; but he gave no details on how it was done, or to what extent. All of these efforts were done at an individual lecturer level, with no co-ordination at programme/faculty level. He also pointed out the lack of monitoring of the effectiveness of such integration. Since this report is now 14 years old, it is hoped that integration has increased; but no publications could be sourced on this matter.
A 2006 article (Cairns, Dickinson and Orr) critiqued the response of the University of the Witwatersrand to HIV and AIDS, claiming that it had failed to respond effectively, especially in terms of curriculum integration. These authors believe that integration is dependent on the development of the capacity of faculties to integrate, and on the provision of funds to support such development.

The HEAIDS (2010a) report on **teacher education** (http://heaids.files.wordpress.com/2012/10/03-4979-hesa-hiv-and-aids-in-teacher-education-cs4.pdf) made many recommendations as to how integration could be done in Faculties of Education, based on research in 23 universities. This report highlighted that experiential learning and innovative pedagogy enhance student learning. It also outlines the different methods for integration (see Appendix 1); and it stresses the need for choices to be made at the curriculum development stage, and at the programme level. The challenges include lack of time and credits, lack of leadership, and scarcity of relevant material.
An important finding relates to the need to help faculties to develop skills to contain their own and students' emotions on HIV and AIDS – when discussing it in class.

Still on teacher education, Holderness (2012) wrote about a spectrum of curriculum initiatives for *in-service teachers,* such as a short learning programme, an advanced certificate in education (ACE) programme on HIV and AIDS in Teaching, a module in an ACE for school leadership, an online course and doctoral studies. This was a desktop review of the existing programmes at Nelson Mandela Metropolitan University and the University of the Western Cape.

The ACE HIV and AIDS in teaching was evaluated in 2009 (Wood, 2009b) as being a successful way to equip teachers to take leadership in HIV and AIDS, and to integrate it into their teaching and community engagement. However, due to the Department of Basic Education's decision to cease bursaries for non-subject-related ACEs, this programme had to be

discontinued. The short-learning programme was also not continued, since it was too expensive for teachers to attend. The online course was an initiative run by UWC through INWENT, Germany.

No publications could be found on this course; but it has been running successfully for several years, although it is focusing more on other African countries now. Holderness (2012) concluded that HIV and AIDS education has to be relevant to the target audience, and that is should focus on reducing the stigma and breaking the silence; that learning should be experiential and context-based; and that curriculum must also cover care and treatment. Specific HIV and AIDS qualifications could help to build up a pool of HIV and AIDS experts within the teaching profession; but they would have to be accessible to all, and affordable.
Two articles were sourced on the use of simulation games, both in teacher education (Petersen, de Beer & Dunbar-Krige, 2011; Wilmot & Fraenkel, 2009): one as part of a first-year course, and the other as part of a Postgraduate Certificate in Education (PGCE) programme. Both found that the game prompted student reflexivity about their own risk, and that of their prospective learners, as well as broadening their perspectives on HIV and AIDS. The Wilmot and Fraenkel study supplemented the game with a case study on the societal impact of HIV and AIDS, since simulation games position HIV infection as an individual factor, which is not the case in South Africa.

Themane and Taole (2013) implemented the HEAIDS teacher-education pilot module; and they evaluated it by testing the relationship between HIV knowledge and the risky sexual behaviour of students in a rural setting. Their study highlighted the need to provide knowledge, which is adapted to the socio-cultural factors of the student, and to consider the psycho-social needs of the students when designing the curriculum. Participatory and self-reflective methods were advocated as optimal for helping students to make the link between HIV and human behaviour.

Wood (2011a) also reported on the perceptions of students – on a PGCE programme – students who had completed a five-credit course on HIV and AIDS, based on the HEAIDS (2010a) pilot module. She found that students had a need for more in-depth learning on how to integrate HIV into their teaching subjects; how to deal with learners in a school situation; and how to develop learning-support material – in other words ,they found a few lectures to be inadequate for learning all they needed to learn about HIV and AIDS – and teaching.
Since it was only part of one module, they could not see the link between HIV and AIDS – and inclusive education or citizenship education, for example.

Wilmot and Wood (2012) described in detail how an active learning approach was used in an HIV and AIDS module, covered in a 6-day block in a PGCE programme. Because the content was underpinned by pedagogical/curriculum theories, it was deemed to be relevant by the students to their training. There was emphasis, for example, on how to link HIV and AIDS to their subject-specific CAPS, and how to design and evaluate learning materials for HIV and AIDS, as well as appropriate teaching strategies. However, the students also requested more exposure to HIV-infected/affected people, so that they could develop confidence in interacting with them.

It was also noted that counselling services need to be available to students who do such courses, since they arouse many emotions.
Van Laren's work in mathematics education with foundation-phase student teachers (Van Laren, 2007; Van Laren, 2008; Van Laren, 2012) provides useful insight into how participatory methods, such as drawing and metaphor work, and self-study methods can be used to integrate a 'soft' topic like HIV and AIDS into a so-called 'hard' scientific subject. However, her work was based on research conducted with a small group of volunteer students; and it needs to be tested in a programme module, in order to see how it would work as part of the formal curriculum.

Webb and Gripper (2010) investigated the impact of a stand-alone HIV and AIDS module for in-service B Ed distance students in a biology programme. The module covered theories on the origin of HIV and AIDS; political responses to HIV in South Africa; education policies and general information on HIV and AIDS. Although the students were found to have higher self-efficacy on teaching about HIV and AIDS after the module, they were constrained by cultural and parental factors that prevented them from translating their learning into practice.

Van Laren, de Lange and Tanga (2013) and Wood (2011b) conducted research with faculty (the former only education; the latter across education, economic sciences, engineering, health sciences) to ascertain their views and practices regarding HIV and AIDS integration. The Van Laren article did not give much information on how it was being integrated; but it provided useful insight on the need to develop communities of practice to help faculties to share their knowledge and to encourage critical discussion among them. This finding corroborated the findings of Wood (2011b), who also suggested the need for real and virtual learning ecologies on HIV and AIDS across the various disciplines. The latter also found that fear stemming from lack of knowledge, of not knowing how to talk about HIV with people who are affected, and of not being able to handle such an emotive subject, was a strong barrier to integration.

However, a few champions were integrating this subject in an interactive and innovative manner, mostly those who had been affected by the epidemic; and so they had a better understanding of its personal impact. Other attempts at integration tended to be didactic, brief and strictly discipline-related.
In other faculties, there are a few publications reporting on the work of 'champions'. One example is that of Craig, Xia and Venter (2004), who introduced HIV and AIDS education into the curriculum in the Department of Electric, Electronic and Computer Engineering. Third/fourth year students were given a CD on HIV and AIDS and pre- and post-tests indicated an increase in knowledge, together with a reduction in stigma. The use of a CD was deemed appropriate for students who prefer to use a computer for learning and working. The students also had to apply a mathematical HIV/AIDS model in a third-year control systems course, which helped them to understand control-engineering concepts, which could be applied in many fields.

Dohr, Bongi Nzama and Murrman (2009) reported that 19 **nurse** training institutions in South Africa have adopted a standardised HIV curriculum; but they gave no details on this. An internet search could also not reveal any publications on this matter.
The Nursing Council is reportedly looking at developing a degree in HIV nursing; and there are specialised courses at postgraduate level.

Health Science students at a medical school interacted directly with HIV-positive patients; and they gave educational workshops in local communities (Mclean, 2005). Small group discussions were facilitated by community members, rather than lecturers, and this helped students to understand local myths on HIV, and to explore sensitive matters applicable to that specific community. Although this was beneficial for student learning and helped to establish networks in the community on HIV education, it is a very expensive method of teaching; since students have to be transported to the community, and community members have to be reimbursed.

In an **all-faculty** approach, Petersen et al. (2004) developed a programme aimed at reducing high-risk sexual behaviours among tertiary students. Although this was a peer-education module, it was integrated into an examinable, credit-bearing first-year module. It targeted knowledge, self-awareness and skills development regarding personal behaviour change. It was evaluated, and found to have facilitated greater social awareness in males of how social norms influence their behaviour, but not in females. It appears that the small group work helped males to make safer sexual choices.
It was noted that didactic lectures lead to AIDS fatigue in students, and that there is a need to devise curricula that would help students to challenge powerful gendered social norms.

Sexuality and gender education are intricately linked to HIV education. Bennett and Reddy (2009) conducted a review of South African university teaching, in order to establish a database of information on what was being taught, and how it was done; pedagogic principles and practices were emphasised; and feedback from students was sought, in order to understand the meaning the course had for their social, political and academic lives. They found that sexual education remains embedded in segregated disciplines, and is only viewed through that one disciplinary lens. They found that more communication on sexuality/gender issues needs to be opened up between disciplines, in order to prevent the domination of a biomedical approach.

With regard to TVET colleges, no published data could be found. However, the national curricula for the vocational certificates in Life Orientation do contain topics that might be a home for HIV and AIDS education. For example, one assessment outcome reads:

> *Identify situations, which are likely to lead to risky sexual encounters and behaviour*
> *Range: date-rape, unwanted pregnancies and STIs, including HIV.*
> *Explain how to avoid these situations, and make informed and responsible decisions in terms of sexuality and relationships*. (Level 2)

Levels 3 and 4 in Life-Orientation also include an outcome on sexual decision-making and how to access treatment. However, there is a focus on personal prevention/care, and not on the factors that promote a wider understanding of HIV and AIDS in society.
To summarise the responses of HEIs in South Africa, most of the studies found were in teacher education, or in the health sciences.

Very few studies on true integration into specific modules were available; again there were more studies that demonstrated the need for HIV education than actual examples.

5. CONCLUSION

It would appear that there is a dire need for publications on different approaches to the integration of HIV and AIDS into the curriculum, judging from the limited pool available at the moment. One may assume that many academics are integrating it; but they are not monitoring/evaluating, and/or they are not publishing their results. Teacher education appears to have done the most work, closely followed by the professions that have to deal the most with HIV on a daily basis, namely the health professions. The literature consulted on the need for the inclusion of HIV and AIDS in the curriculum (see section 4.1) provides ample evidence for doing so; and much research has also been done on the various theoretical approaches and paradigms to shape how it should be done (see section 4.3 and 4.3.1). However, publications on how to integrate, both peer-reviewed and grey, appear to be minimal.

This leads one to the conclusion that there is a need for a multi-disciplinary, multi-institutional research project to explore *what is being done* in the Higher Education Sector in South Africa; *what needs to be done;* and how *academics could be supported to do this.* The research project also needs to ensure that publications arise from each sub-project to contribute to the currently scant body of knowledge on the integration of HIV and AIDS in the curricula of tertiary education. This is particularly true of the TVET colleges; since searches revealed that no research has been published on HIV and AIDS integration at these institutions.

The following conclusions are based on all the literature consulted (see Reference list and Appendix 1).

Mode of delivery

- ✓ The literature supports the need to move beyond university-wide stand-alone modules, compulsory or not, that focus solely on the prevention and protection of students' own health. Although these are needed, they are not sufficient, and should be supplemented by discipline-specific HIV and AIDS education.
- ✓ As with any topic, didactic lectures do not promote deep learning. Several studies found that they need to be supported by experiential learning/interactive learning/service learning that allow students to interact with the reality of HIV and AIDS in their own communities/professions.
- ✓ Online modules/e-learning open up many opportunities for HIV and AIDS education; and this field should be further investigated. No literature could be found on the use of the popular social media for HIV and AIDS education at tertiary level, for example.
- ✓ Service-learning activities are reported to be excellent vehicles for HIV and AIDS education.

Curriculum content

- ✓ HIV and AIDS education is best approached from a critical paradigm that recognises the need to challenge and change social norms/human behaviour/laws/policies/practices etc. in societies impacted by the pandemic. Such an approach would help to transform curricula at higher education to make them more responsive to South African societal needs.
- ✓ Viewed from a holistic perspective, HIV and AIDS education could be integrated into every discipline – examples from law, health sciences, education, science, engineering, medical sciences, economic sciences, arts were found in the literature – but this needs to be done at programme level, when curricula are being designed/changed, in order to avoid repetition/omission of important knowledge. If done at programme level, then programme co-ordinators could ensure that all students enrolled in a specific programme (e.g. BSc, BEd, BCom) are exposed to the necessary HIV and AIDS learning opportunities; if done at module level, then only students who take that specific module would be able to benefit.
- ✓ All content should be relevant to both the discipline and the context in which the students live and work. For example, teachers/doctors/lawyers have to be able to deal with constraints imposed by socio-cultural norms on HIV and AIDS, sexuality, gender etc.

Outcomes

- ✓ There are instances of integration that appear to be promising in many institutions; but these need to be researched; and the results need to be disseminated across disciplines and institutions.
- ✓ There is a need to establish virtual and real learning ecologies/communities of practice for HIV education in higher education, preferably discipline-related.
- ✓ Due to the nature of the topic and the sensitive issues it covers, research should be primarily qualitative, in order to access the nuances and intricacies of student responses to HIV and AIDS-related issues.

Lessons learnt

- ✓ Integration needs to be supported/led by institutional management; and it should, therefore, be included in strategic management plans.
- ✓ Leadership at programme curriculum development level is also vital to avoid repetition/omission of material, and to ensure that all lecturers on a specific programme are supported to integrate HIV into their modules.
- ✓ Faculties need to be trained/supported to integrate this topic into specific modules. Such training should also address personal fears on addressing HIV and AIDS, personal biases and stereotypical discourses, as well as discipline-related factors. Because the topic evokes emotional responses in students, some studies suggest the need for faculty to become competent in containing their own emotions and those of students before referral. Several studies suggest using an outside expert to help in curriculum development.
- ✓ Research needs to be built into all integration work. Several studies suggest a self-study action-research approach would be ideal to help faculty develop ways to integrate.

- ✓ Funding to support faculty training and re-curriculation/research needs to be budgeted for in strategic planning at faculty level.

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Appendix 1 – Spreadsheet of main sources consulted

Appendix 2 - Database of Potential Partners/Networks

- HEAIDS HIV/AIDS COMMUNITY OF PRACTICE
- Association of Commonwealth Universities
- Association of African Universities
- Southern African Regional Universities Association (SARUA)
- UNESCO
- Forum for African Women Educators (FAWE)
- Global University Network www.guninetwork.org