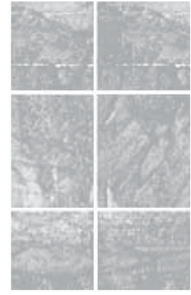


Cartoon drawing as a means of accessing what students know about HIV/AIDS: an alternative method



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ABSTRACT

Combating the spread of HIV/AIDS in Uganda has involved massive public education campaigns. One of the challenges of these campaigns has always involved the need to simultaneously respect and transcend cultural taboos around direct discussions about sexuality and sexual issues, particularly among youth. Research consistently shows that drawing, as a means of investigating what students know, has the potential to reveal students' perceptions of given concepts and provides an alternative to predominantly language-based methods. Visual methods, however, have rarely been taken up in research on students' sexual health and HIV/AIDS knowledge. This interpretive case study examines the use of cartoon drawing as a unique tool for understanding Ugandan secondary students' conceptions of HIV/AIDS, particularly concepts that are not directly discussed culturally.

KEY WORDS

cartoon drawing • cultural taboos • HIV/AIDS knowledge • multimodality

AIM AND RESEARCH QUESTION

This article examines the use of cartoon drawings as a viable means for secondary school students in Uganda to communicate and represent culturally and psychologically sensitive information about HIV/AIDS. A major challenge of HIV/AIDS education in Uganda has been that reproductive health and sexuality — key components of HIV/AIDS education — are considered taboo topics for face-to-face discussion. Our study implements

cartoon drawings as an alternative method for eliciting students' knowledge on HIV/AIDS that does not rely on language-based modes alone. Research consistently shows that drawing as a means of investigating what students know has the potential to reveal prior knowledge on given concepts under study (e.g. Chambers, 1983; MacGregor et al., 1998; Reiss et al., 2007). Yet only a limited number of educational researchers have used visual methods such as drawing to investigate students' knowledge and understanding of particular topics and concepts (Chambers, 1983; MacGregor et al., 1998; Reiss et al., 2007; Thorley and Stofflet, 1996). In this study, we examine the use of drawing as a tool for understanding students' conceptualizations of HIV/AIDS by addressing the question: 'How do Ugandan Senior Three students use cartoons to represent their knowledge of HIV/AIDS?' Understanding what students know about HIV/AIDS is a critical component of ensuring both individual and national health and well-being. This is important given that Uganda's national broadcast media HIV prevention campaign is viewed as 'the window of hope for raising an HIV free generation' (Presidential Initiative on AIDS Strategy for Communication to Youth: MoES/PIASCY, 2005). Investigating what secondary school students have internalized from such campaigns and other forms of formal and informal education may provide some insights into whether the messages reach their target audience.

BACKGROUND AND RATIONALE FOR THE STUDY

HIV/AIDS was first diagnosed in Uganda in 1982; the prevalence rate reached a staggering 30 per cent in the 1990s (Blum, 2004). In 1994, the Ugandan Government launched a rigorous campaign against HIV/AIDS, which included ensuring that people had access to accurate and current information about the disease (Stoneburner and Low-Beer, 2004). This campaign was critical to repositioning attitudes toward HIV/AIDS, which had previously been shrouded in myth, fear and stigma (Blum, 2004). Today, Uganda is considered the first African country to successfully reduce and sustain low prevalence rates of HIV infection in the larger populace (United States Agency for International Development : USAID, 2002). The apparent success of combating the spread of HIV/AIDS in Uganda has been attributed partly to the use of various media for communicating messages about AIDS, media that are sensitive to the sociocultural worlds of Ugandans, and the country's political commitment and policy of open discussions and access to accurate information (Kickbusch, 2001; Stoneburner and Low-Beer, 2004).

Children in Uganda have the lowest HIV prevalence rates (Ministry of Health: MoH, 2006). As they enter adolescence, however, they constitute a high-risk group because of the onset of sexual activity (Uganda AIDS Commission: UAC, 2004); there has consequently been a special focus on youth in recent HIV/AIDS campaigns. Current public education messages are geared towards having an 'HIV-free generation' in Uganda. The messages

are designed to increase individual and community awareness of HIV/AIDS risk and encourage appropriate health action; stimulate and support community action to HIV control; and advocate for an environment that enables the prevention and control of HIV in Uganda. The information is disseminated through various media such as radio, television, newspapers, billboards, community leaders, health providers and workers in various departments such as Agriculture and Gender.

Uganda uses a multi-sectoral approach to HIV/AIDS education. In schools, HIV/AIDS education includes discussion of both the biomedical context of the epidemic and the social–environmental context (Ministry of Education and Sports: MoES/PIASCY, 2005). The biomedical context includes the known scientific facts on HIV/AIDS and the infection trends, which are integrated into the secondary school biology syllabus (Mirembe, 2002). As indicated previously, in more traditional communities in the country, the epidemic has been shrouded in myth, fear and stigma. Key stakeholders, such as government and curriculum developers, responded by providing scientific information on the disease in order to increase students' knowledge levels and counteract the myths (MoES, 2005; Mutonyi, 2007). The current curriculum addresses how HIV is transmitted, methods of prevention, condom use and HIV, the difference between HIV and AIDS, nutrition issues, testing for HIV, and antiretroviral treatment. Students most typically communicate their understanding of this information in written tests, expository papers and oral responses.

The social–environmental context of HIV/AIDS is addressed in the life-skills curriculum (United Nations AIDS: UNAIDS/UNESCO, 2004). Skills-based health education was initially aimed at providing young people with access to critical prevention interventions, including services to develop the life skills needed to reduce their vulnerability to HIV/AIDS infection (Norton and Mutonyi, 2007). Life skills include topics such as self-awareness, self-esteem and empathy; private communication and interpersonal relationships; decision-making and problem-solving; creative and critical thinking; and coping with emotions and stress (UNAIDS/UNESCO, 2004). Learning materials developed for the life-skills curriculum are partially incorporated into classroom lessons, especially in subjects like English and religious education, but most often the materials are used in peer-led HIV/AIDS after-school clubs. The HIV/AIDS clubs are a major resource for secondary school students (Mutonyi, 2005). These clubs receive teen-targeted resources, such as the teen newspaper *Straight Talk*, and comic books, such as *Shattered Dreams* and *Kikosi*, which are multimodal texts (i.e. they use both language and images to communicate information). Currently, curriculum developers are designing a new HIV/AIDS curriculum for secondary schools code-named PIASCY (Presidential Initiative on AIDS Strategy for Communication to Youth), which incorporates culture and life-skills HIV/AIDS education (MoES/PIASCY, 2005).

Given that youth have been the target audience of most of the HIV/AIDS messages in Uganda, we undertook an investigation into what

knowledge students have internalized from public campaigns, school, community and family. The study draws on social semiotics, which, according to Kress and van Leeuwen (1996), is an attempt to explain and understand how signs are used to 'produce and communicate meanings in specific social settings be they "micro" settings such as the family or settings in which the sign making is well institutionalized and hemmed in by habits, conventions and rules' (p. 264). Students in Uganda have been exposed to multimodal tools of representation on matters relating to HIV/AIDS (e.g. *Shattered Dreams* and *Kikosi*). It is atypical, however, that they are given opportunities to use these available modes of representation within classroom contexts: pedagogies in classrooms in Uganda, similar to many other global contexts, emphasize oral and written language as the predominant form of expression (Kress, 2000). As MacGregor et al. (1998) observed, drawings are predominantly included in science textbooks used in health centres and psychological assessment, yet talk and writing remain the major means of representation and expression in science classrooms. Furthermore, very few researchers and teachers privilege alternative representational resources such as drawing (Jewitt and Oyama, 2001; Kress, 2000).

Based on the assertion that spoken and written language are privileged in classrooms, the study reported here encouraged students to become authors of multimodal texts, which involved combining linguistic and visual modes of representation. Specifically, we asked students to use cartoon captions and illustrations to represent what they know about HIV/AIDS. As Piaget (1969), Vygotsky (1978) and Kress (1997) have all asserted, the signs learners create through drawing might simultaneously communicate the local social context while representing the available resources from the world around them. The sign-makers' meanings reflect reality as imagined and influenced by their beliefs, values and biases.

Studies on multimodal representation and young people's images of HIV/AIDS have predominantly captured drama clips or used photography (see Mitchell, 2006; Mitchell et al., 2006). Our study is unique in that the cartoons capture students' current representations of HIV/AIDS. When students are asked about their understandings of particular topics, ideas and concepts, they respond by presenting 'representations' (Bruner, 1964). Gilbert and Boulter (2000) refer to such representations as mental models – personal cognitive representations held by an individual. The only way to understand students' mental models of a particular phenomenon is by eliciting one or more of their expressed models of that phenomenon (Reiss et al., 2007). Although there are multiple ways of collecting information about students' understandings of scientific phenomena, the vast majority of these methods rely on talking or writing. The need to take a completely fresh look at multiple modes of representation in theories of communication and re-evaluate how we use different symbol systems to represent meaning has been well argued by Kress (2000). He stresses that it is critically important for this new agenda to include

the full range of semiotic modes and a full understanding of their potentials and limitations in particular societies and cultural settings.

Visual anthropology also broadly informs our understanding of multiple modes of representation. Visual anthropologists contend that: 'much that is observable, much that can be learned about a culture can be recorded most effectively and comprehensively through film, photography or by drawing' (Banks and Morphy, 1997: 14). These authors also argue that neglecting visual data may be a reflection of privileging the intellectual over the experiential or phenomenological, or neglecting the importance of visual phenomena across cultures. Traditionally, researchers rather than research participants have used visual modes for recording culture. We put the visual tools for drawing in the hands of our participants to enhance our understanding of what they know about HIV/AIDS.

APPROACH, SETTING, AND PARTICIPANTS

This study, which is an interpretive qualitative case study (Merriam, 1998; Stake, 1995, 1998; Yin, 2003), was conducted by two researchers: one is a Ugandan who has worked in the area of health education as both an educator and researcher; the other is a Canadian who for the past seven years has been conducting various literacy/health literacy studies with colleagues in Uganda. The study reported here involved Senior Three (S.3) or Grade 11 biology classes from four eastern Ugandan high schools. The four schools varied in status and represented typical public high schools in Uganda; that is, girls-only boarding, boys-only boarding, mixed-boarding and mixed-day schools. S.3 classes were selected because HIV/AIDS is part of the S.3 biology curriculum and, more importantly, this age group is considered high risk for contracting HIV/AIDS (Uganda AIDS Commission, 2007). The participants were those studying biology at the S.3 level. Biology students were chosen because the aim of the research was to investigate students' understandings of HIV/AIDS, including how their prior knowledge and experience impact on student interaction with classroom instruction on HIV/AIDS (see Mutonyi, 2005).

A total of 160 students participated in the study. As part of a larger questionnaire on HIV/AIDS, students were asked to take on the role of public educators and propose a new cartoon-type message about HIV/AIDS. The specific question was: 'What would be your own slogan for HIV/AIDS? Illustrate in a cartoon form the message your slogan would convey about HIV/AIDS. Explain the message your cartoon is conveying.' Of the 160 students who completed the questionnaire, 120 drew cartoons. Students were asked to produce cartoons rather than drawings because they had indicated that they associated the word drawing with 'artistic' drawing and they were not 'talented' in this way. Cartooning, on the other hand, allowed them to draw what they call 'stick images' without paying special attention to positioning and spatial relationships from a purely aesthetic perspective. For these secondary

students, cartooning was a familiar mode of communication used extensively in public education campaigns that target youth. As such, the students did not have preconceived notions of school-sanctioned standards for how cartoons should look or function. Of the 120 cartoons, only one had some semblance to the public medical charts educating people about HIV/AIDS and stigma; the others were the students' original creations. It should also be noted, however, that because the cartoons were produced in a school context, students may not have perceived that they had the same freedom to draw as they might have in their home or community contexts. In other words, what schools typically sanction as acceptable content may have influenced what the students created.

In the interdisciplinary field of visual analysis, interpreters of visual images broadly agree that there are three sites at which the meanings of an image are made: the site of production, the site of the image itself and the site of viewing (Rose, 2001). From a sociocultural perspective, and in relation to the research reported here, it is our position that the three sites at which meanings are made are inextricably connected and recursively relational to each other. We use Rose's three sites of meaning-making in combination with an adaptation of Warburton's (1998) analytic framework (i.e. initial description, immediate connotation, systemic connotation, narrative threads) to explore what the cartoons as mediated images might mean. Our collaborative interpretation of the images traverses the sites of viewing/audiencing and production in relation to the image itself (Rose, 2001). The students' own voices, evident in their written text (i.e. the inclusion of cartoon titles or captions), were critical to our interpretive process. We began with an *initial description* of the image itself (What visual and textual material is contained within the cartoon? Who and what are represented?), focusing on *immediate connotation* (What might the cartoon mean to the general public? What does the image/text signify?), then *systemic connotation* (What is the place and status of the cartoon with respect to the communication system or systems it is part of? What are the connotations of the image/text?). Finally, we *establish narrative threads* (For what/whom was the cartoon intended? What is the relationship between the cartoon and broader discourses on HIV/AIDS?), which provide a synthesis across the three sites of meaning-making.

Developing a method of analysis in this study was particularly challenging because our images were produced in non-Western contexts and dominant frameworks for visual analysis are based on the history of Western image-making (see, e.g., Baldry and Thibault, 2006; Kress and Van Leeuwen, 1996). Our combination of analytic frameworks allowed us to consider the unique sociocultural context of Uganda in order to uncover visual narratives that were not initially evident (see also Mutonyi and Kendrick, 2010). This narrative helped us raise questions about the possible meanings of the cartoons in relation to broader theories and discourses on literacy and health literacy, identity, and personal, public and cultural constructions of HIV/AIDS.

We identified three themes: sexual relationships; death and HIV status; and stigma and discrimination. We present eight illustrative examples that

exemplify the three themes and reveal the students' range of associations with HIV/AIDS, which included narratives – often with strong overarching emotional components – embedded in both biomedical and social–environmental contexts of HIV/AIDS. Pseudonyms are used throughout the article.

Sexual relationships

Ninety-five students (47 girls and 48 boys) out of the 120 who drew cartoons depicted sexual relationships in their representations of HIV/AIDS. These included multiple sexual relationships/networks, sexual assault, condom use and abstinence. We present four cartoons as representative of this theme.

Jane's drawing depicts a woman who is saying 'no' to sexual advances from a man offering material gifts (see Figure 1). The woman is simultaneously holding the hand of another man. The exclamation and question marks drawn above his head convey the multiple dimensions of sexual networks. One potential meaning is that these signs are a marker of the man's confusion or surprise that another man is soliciting a relationship with his partner. Jane juxtaposes this image with an explanatory text that reads: 'Abstain [from] sex with other wrong partners and be with one faithful partner.' The image and words together raise the ubiquitous concern that 'one's faithful partner' may be engaging in unknown behaviours. In this cartoon, Jane portrays the B in the ABC (Abstinence–Be faithful–use Condoms) formula of the National HIV/AIDS campaign to emphasize what is expected of married couples – being sexually faithful to each other. Jane also includes the solicitation of a sexual relationship from another man in the presence of the woman's current partner. Within this potential sexual network, the woman's partner may also be questioning *her* fidelity. In Uganda, such incidences or questioning of one's partner's fidelity could result in domestic abuse which is a key component of the vicious cycle of the HIV epidemic (MoH, 2006).

Another potential meaning for this cartoon is that Jane could be demonstrating how some women have internalized the HIV/AIDS message that targets married/committed couples and focuses on sexual faithfulness. The accompanying text 'Abstain [from] sex with other wrong partners and be with one faithful partner' cautions people not to put themselves at risk by engaging in extra-marital relationships. In Uganda, one of the primary causes of the HIV epidemic within marriage is the sexual networks that married men and women might be engaged in (UAC, 2007). Jane is foregrounding the relation between sexual networks and HIV infection. Her choice of positioning the woman as having decision-making power in sexual networks is a departure from typical billboard messages that portray men as central in these networks. The cartoon advances the notion that women can stop sexual networks by saying 'no' to the 'wrong partners', as in the statement, 'Please not me, find them elsewhere.'

Janice's emotionally-laden cartoon depicts sexual harassment in graphic simplicity (see Figure 2). What immediately attracts the viewer's



Figure 1 Abstain [from] sex with other wrong partners and be with one faithful partner [Jane].

attention is the plus sign (+) beside the man's body to indicate that he is HIV positive, coupled with the disturbing statement: 'I want to rape you fast [first] come here.' Rape of young people has been reported as one of the major vulnerabilities to HIV/AIDS infection (MoH, 2006). A commonly held belief in some African countries is that having sex with a virgin will cure HIV/AIDS. Such myths have led to many infected persons raping young people under their care in the hope of an immediate cure (MoES/PIASCY, 2005). Janice captures the brutality of this practice in her cartoon. Although open discussion of rape in Uganda is very uncommon, this cartoon brings the issue to the forefront through the power of the visual. The need to find a culturally acceptable platform to communicate this issue is crucial, especially as it relates to HIV/AIDS infection, women and young people's vulnerabilities.

For Opondo, the visual mode of cartoons also allows him to talk about sex, in this case, metaphorically (see Figure 3). Although it is clear from his title that his cartoon is about condom use, in his words: 'to stay safe from HIV/AIDS simply by abstain[ing from] – using condoms if you can't abstain', the actual image he designs is a person wrapped up in a condom taking shelter from the rain labelled as AIDS/HIV. This image is juxtaposed with a person – or couple – not wrapped in a condom. The label on this side of the cartoon is 'unprotected sex'. The ambiguous nature of the image of the couple having unprotected sex opens possibilities for interpretation. The use of metaphoric language allows taboo topics to be discussed especially among peers or people who would otherwise have shied away from talking about sex, sexuality, and condom use in public (Mutonyi, 2007).

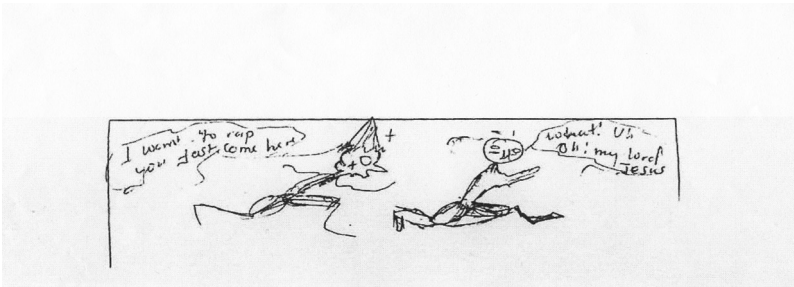


Figure 2 I want to rape you fast [first] come here [Janice].

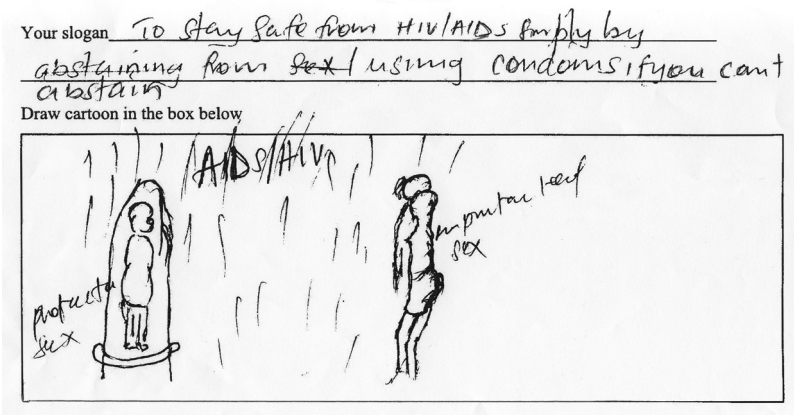


Figure 3 To stay safe from HIV/AIDS simply by abstaining – using condoms if you can't abstain [Opondo].

These three cartoons all demonstrate the sexual networks and risks that expose people to HIV/AIDS infection. In Uganda, 64 per cent of HIV infection is through heterosexual transmission (MoH, 2006), which is most likely why many students primarily created cartoons depicting sexual transmission of HIV/AIDS between men and women. All the cartoons highlight the social–environmental context of HIV/AIDS in their depictions of sources of vulnerability, especially for women, such as rape or having unprotected sex after receiving a ‘gift’ from men who are not exclusive in their sexual relationships. In Uganda, women have higher prevalence rates compared to men because of the nature of men’s sexual networks, in particular extra-marital sex. The multiple dimensions of sexual networks are provocatively captured in these students’ cartoons. An interesting pattern in the girls’ cartoon representations is their emphasis on abstinence (30 students) as it relates to sexual relationships and HIV/AIDS and the absence of images on condom use.

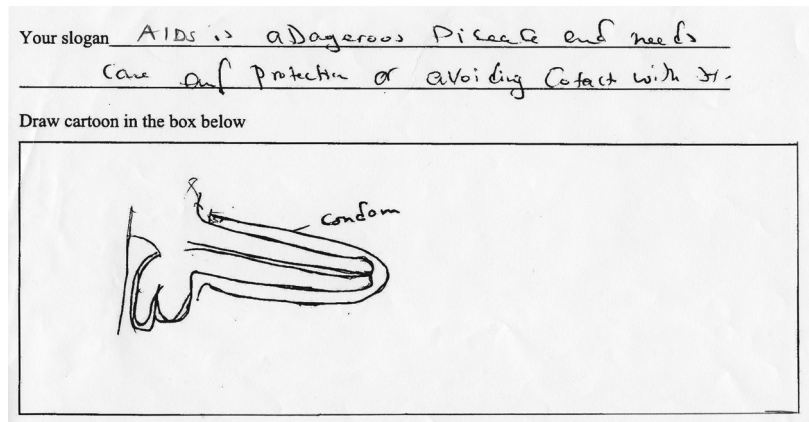


Figure 4 AIDS is a dangerous disease and needs care and protection or avoiding contact with it [Jude].

Jude takes a more direct approach in his depiction of condom use (see Figure 4). His statement ‘AIDS is a dangerous disease and needs protection or avoiding contact with it’, and the image of a condom drawn as a sheath around a penis are not enveloped in metaphor. Although the direct approach Jude uses would not be culturally acceptable in conversation, the use of drawing to convey his message allows him to transcend cultural practices and taboos.

The 95 students whose cartoons were categorized as sex-related representations depicted situations that may result in infection and how one can prevent infection. These include rape, having more than one sexual partner, engaging in sexual relationships with people whose HIV status is not known, having unprotected sex and abstinence. Although witchcraft as the cause of HIV/AIDS is a common myth in Uganda (International Development Research Center: IDRC, 1997), students did not generally depict this in their drawings; instead they focused on the sexual transmission of the disease. Janice’s graphic depiction of rape, however, draws attention to the belief that having sex with young virgins will cure HIV.

Death and HIV status

A total of 10 students (5 boys and 5 girls) created cartoons that communicated messages about death and HIV status. Jimmy’s and Jessica’s cartoons are typical of this theme. Although Jimmy’s cartoon (Figure 5) includes no written text within the cartoon itself, his title captures the message: ‘The cartoon carries a message that some people are seeing many graves in their homes, they begin to think am [I] in [that] state they were, positive or negative?’ In Jessica’s cartoon (Figure 6), she draws a man looking at a coffin. The title on Jessica’s

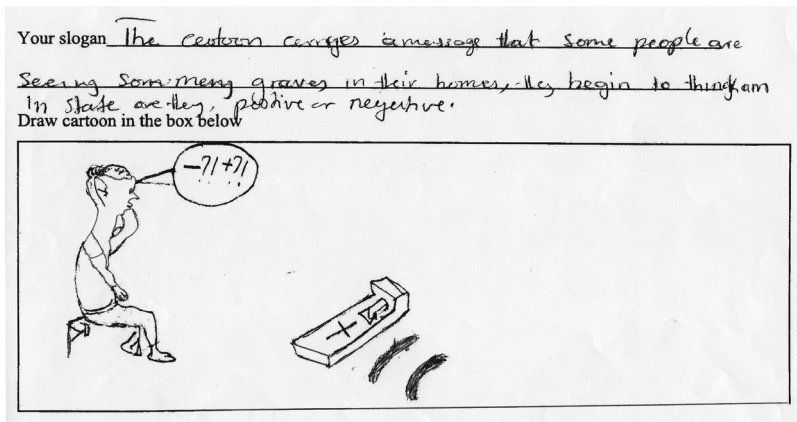


Figure 5 The cartoon carries a message that some people are seeing many graves in their homes, they begin to think am I in the state they were, positive or negative? [Jimmy].

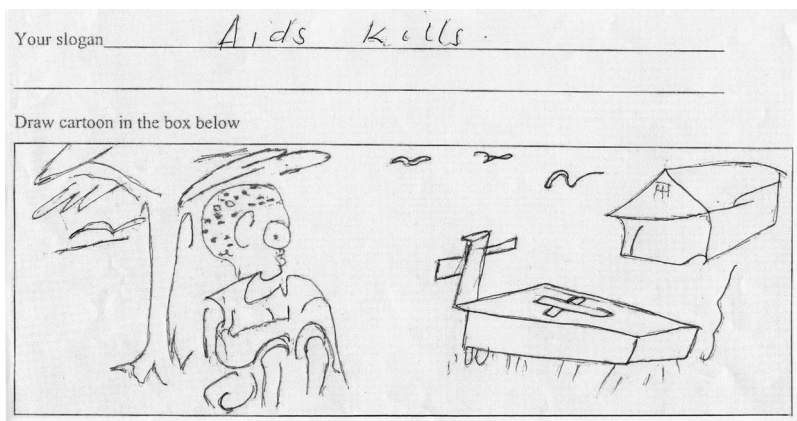


Figure 6 AIDS kills [Jessica].

cartoon is 'AIDS kills'. She uses the power of visual images to emphasize the devastating effect of HIV/AIDS. Such messages are said to have led to the drastic reduction of the epidemic in Uganda (Blum, 2004). When taken together, Jimmy and Jessica's cartoons have double messages: an emotionally-laden message, which is the impact of HIV/AIDS on people's lives and the trauma people experience, and the importance of knowing one's HIV status to avoid the stress or fear of the unknown. The fear around knowing one's HIV status has been well documented (see Kelly, 2006; UAC, 2007).

Uganda, like many African countries, has been dramatically affected by HIV/AIDS. Mitchell (2006) noted that, in Rwanda, many young people

suffer from depression because they have lost parents to HIV/AIDS. Jimmy's and Jessica's cartoons poignantly capture the layers of this emotion. As Blum (2004) stated, there is not a family in Uganda that has not seen a loved one succumb to HIV/AIDS. Perhaps the 10 students whose cartoons focused on death and HIV status have seen loved ones die and are capturing the emotions they live with or that they have observed at funerals they have had to attend. Jimmy highlights the ubiquitous question, 'Am I also infected?', whereas embedded in Jessica's cartoon is the helplessness associated with the question, 'What am I going to do?' These emotions are captured with limited words, yet they make visible the all too human dimension of the HIV/AIDS epidemic.

The two drawings included on this theme depict the emotional plight of the HIV/AIDS scourge. One of the central messages in the HIV/AIDS campaigns in Uganda is advocacy for HIV testing so that people learn to live positively and avoid feelings of isolation and depression (UAC, 2007). However, it has been noted that many people fear knowing their status, which has greatly impacted on the rates of infection, especially among married or co-habiting couples (MoH, 2006). A survey from 2004–5 found that, among those who are HIV positive, many did not know their status and so did not think of using prevention methods (MoH, 2006). One of the major reasons for not testing for HIV/AIDS is fear of the stigma and discrimination associated with HIV/AIDS (Kelly, 2006). Jimmy's and Jessica's cartoons and subsequent explanations capture this fear of isolation due to stigma, and the dilemma of not knowing one's HIV/AIDS status. However, these students' drawings also depict the extreme difficulties suffered by people who have seen loved ones die of HIV/AIDS. The potential impact of HIV/AIDS on young people's lives includes the extra responsibilities created by the rapid increase in households headed by children (see Mitchell et al., 2006). This uncertainty of the future is perhaps what Jessica so poignantly captures in the question, what am I going to do?

Stigma and discrimination

Ten students (6 girls and 4 boys) produced cartoons that depicted messages related to the stigmatization experienced by many of those who have contracted the disease. Kelly (2006) defines stigma as 'the judgmental approach to another person that arises from our values, prejudices, and taboos' (p. 4). We use Julius's and Jonah's cartoons to illustrate how the 10 students depicted stigma and discrimination. The two students approach the issue from very different perspectives, representing the range of responses within the collection as a whole.

Julius shows a person infected with the virus being abandoned by a friend or family member (see Figure 7). The stigmatization of infected persons has been identified as one of the major challenges of HIV/AIDS education in Uganda (UAC, 2007). One of the main causes of stigma is lack of sufficient knowledge about how the disease is contracted and spread (MoH, 2006). Stigmatization has led to a 'don't ask, don't tell' strategy, with many

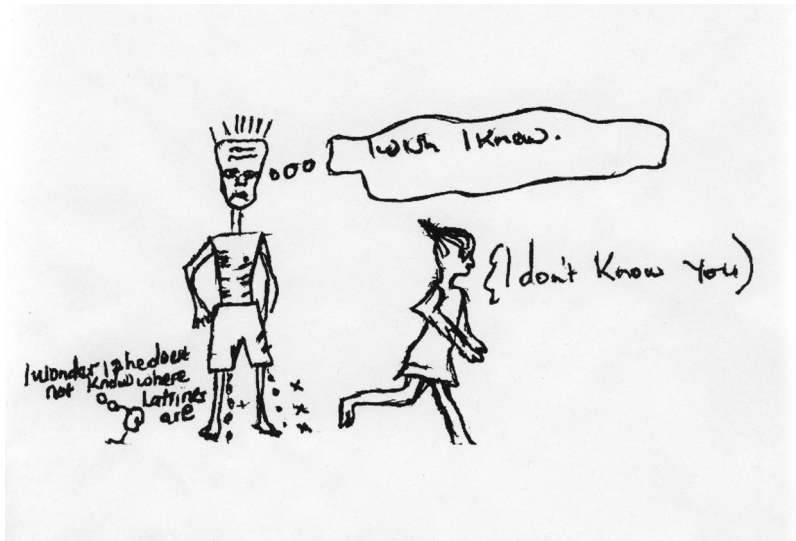


Figure 7 No title [Julius].

people not seeking to know their status and others, who do know their status, not telling their sexual partners for fear of abandonment (UNAIDS, 2001). Julius captures the raw emotion of this abandonment in his drawing of a woman turning her back on a man who shows obvious signs of critical illness: 'I don't know you' is her only response.

In contrast, Jonah created a cartoon to encourage people not to stigmatize infected persons (see Figure 8). By focusing the three frames of his cartoon on how HIV is *not* transmitted, for example: 'shaking hands with an infected person, sitting with an infected person and talking to them does not spread HIV/AIDS', he demonstrates his knowledge of the scientifically proven methods of transmission. As mentioned in the introduction, the HIV/AIDS epidemic has been associated with myth, fear and stigma, which resulted in people abandoning or being afraid of infected persons (MoH, 2006). Jonah's cartoon is in consonance with health charts on HIV and discrimination that can be found in many health centres dealing with the epidemic. His cartoon illustrates that national campaign messages that focus on how HIV *is not contracted* and that encourage people to provide care for infected persons have reached the target audience. Although both Julius's and Jonah's cartoons illustrate the problem of stigma as it relates to HIV, Jonah's cartoon presents possibilities for helping infected persons to live and integrate in the community.

Although not presented here, there were five cartoons (3 girls and 2 boys) that depicted other AIDS-related information including blood transfusion as a method of HIV transmission and the experience of helplessness associated with the incurable nature of HIV/AIDS.

Your slogan Shaking hands with ~~and~~ an infected person, sitting with ~~and~~ an infected person and talking to them does not spread HIV/AIDS.

Draw cartoon in the box below



Figure 8 Shaking hands with an infected person, sitting [sitting] with an infected person and talking to them does not spread HIV/AIDS [Jonah].

WHAT STUDENTS' CARTOON DRAWINGS REVEAL ABOUT HIV/AIDS

This study sought to understand Ugandan secondary school students' HIV/AIDS knowledge as represented through their cartoon messages. Across the collection, the cartoons show that students have a broad-based knowledge of various HIV/AIDS concepts including cause, effect, spread and prevention. An advantage of having students generate their own multimodal texts is that they can use language that makes sense to them. It is evident that most of the students did not use scientific vocabulary for HIV/AIDS and yet their drawings represented scientific knowledge. In addition, students used local expressions that fit their own cultural modes of representation. For example, Opondo (see Figure 3) alludes to being soaked by HIV/AIDS 'rain'. In Uganda, where many people have labelled HIV/AIDS with different names, this analogy is very apropos. As Hewson and Hamlyn (1985) argue, figurative language is always culture specific, and often cannot translate readily to another culture, as may be the case with metaphoric cartoons such as Opondo's.

Within the context of classrooms, one of the challenges faced by teachers in HIV/AIDS education is publicly discussing matters relating to sex and methods of HIV prevention (Burns, 2002). Burns found that most Ugandan teachers have a fear of transcending the cultural practices and choose not to discuss taboo topics (see also Kinsman and Harrison, 1999). It is evident in the students' cartoons that most of them have devised metaphorical ways of discussing taboo issues such as sexuality and sexual practices. The student-generated cartoon metaphors on sexual issues could be useful tools for teachers and other educators to productively address sex-related topics with students. Advancing HIV/AIDS education in Uganda requires that teachers and other educators provide students with opportunities for alternative modes of representation (e.g. cartoons, dramatic performance, art-based expressions)

because of the cultural limitations of language for addressing taboo topics. Such representations could be useful for building a conceptual foundation and bridge for understanding target concepts of HIV/AIDS or sex-related topics (Hamilton, 2000).

Cartoon representations served a unique dual role in that they allowed students to both maintain and transcend cultural barriers. Jude, for example, might not publicly talk about sex or the male reproductive organ but, through drawing cartoons, he was able to blend the linguistic with the visual to represent in a culturally acceptable way how condoms are used. Although Opondo's cartoon is culturally meaningful, it is important to note it could also be misleading, especially to a person from outside this sociocultural setting. As in figurative expressions, someone outside Opondo's sociocultural background who views his cartoon could develop misconceptions about condom use. Numerous studies have postulated that misconceptions are developed, especially in relation to the use of figurative expressions (Boers, 2003; Clement, 1993; Nashon, 2004; Pittman, 1999). In relation to HIV/AIDS, any misconceptions have the potential to lead to socially risky behaviour, such as not knowing when and how to wear a condom. The use of drawing alongside other modes of representation may help students avoid confusion or the entrenchment of misconceptions. As Kress (2000) observed, all modes of representation have limitations. In this study, the limitation of representing HIV/AIDS knowledge in a drawing is that someone might see the cartoon and take it as a holistic representation of a concept. Mitchell (2006) found that sometimes when HIV/AIDS topics included common misconceptions as areas for discussion, some of the students who just read these statements, but did not take time to further examine the issues, internalized the misconceptions instead of the intended message. The metaphorical nature of many of the cartoons adds another layer of complication because metaphors are also open to interpretation. Within the analytic/interpretive process, examining the students' written explanations as inseparable from their images needs to be emphasized.

The significance of the study is that using cartoon drawings to investigate HIV/AIDS knowledge provides students with opportunities to combine sociocultural and environmental knowledge with scientific knowledge, which demonstrates a more holistic representation of their understanding. Encouraging students to produce multimodal texts that include both words and images might make constructions and critiques of their social reality more visible to them. The cartoons indicate that the students associate certain HIV/AIDS information with particular images encountered through media and other sources. In addition, given that the vast majority of the Ugandan population has lost at least one loved one to HIV/AIDS (Cohen, 2003), the cartoons enabled the students to express emotionally laden knowledge which might have been more difficult to access through interviews alone. These texts offer a socially and culturally acceptable means for teachers and other public educators (e.g. health promotion workers) to more effectively build up and support students' possible learning challenges created by the topic.

The findings of this study clearly confirm the need for continued education on target concepts of HIV/AIDS, especially issues related to stigma and discrimination. Most cartoons depicted aspects of cultural understandings, canonical science and adequate understandings of modes of transmission and prevention. In addition, although students demonstrate extensive knowledge of HIV/AIDS, their ability to apply and act on this knowledge in real-world contexts is less certain (Mutonyi and Kendrick, 2010).

From a theoretical perspective, the findings suggest that visual images can play a fundamental role in capturing students' understandings of given concepts or issues. The study contributes to the scarce literature on student-generated multimodal texts in Uganda and the role they can play in framing the development of relevant learning activities. In addition, the study provides insight into the importance of visual images as modes of communication consistent with other researchers' findings (see, e.g., Chambers, 1983; Kress, 2000).

CONCLUSION

Using visual images can provide an insight into what students already know and understand about specific topics, in this case HIV/AIDS. Cartoons are unique cultural artifacts that both synthesize and amplify cultural and personal knowledge (Warburton and Saunders, 1996). They also allow for the expression of a much fuller range of human emotion and experience than spoken or written communication alone (Kress and Van Leeuwen, 1996) and simultaneously integrate and transcend taboo ways of discussing sexuality. The diversity of ways in which these students represent HIV/AIDS demonstrates that cartoons have considerable potential as a pedagogical resource for HIV/AIDS education and raise important questions about the potentials and limitations of other multimodal representations (e.g. dramatic performance, film production, photography) for HIV/AIDS curriculum design and implementation in schools. We hope that alternative methods, such as drawing, will open the way for the development of more effective working relationships between school-based educators (e.g. teachers) and those who are community-based (e.g. public health educators) for more effective health promotion and disease prevention.

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BIOGRAPHICAL NOTES

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