

Integrating gender and HIV/AIDS into food security initiatives: Policy making 'from the ground up'

Claudia Mitchell* and Cora-Lee Conway
McGill University 3700 McTavish St. Montreal, Quebec, H3A 1Y2
*Corresponding author: E-mail: claudia.mitchell@mcgill.ca

ABSTRACT

In this article we consider how an orientation towards "policy making 'from the ground up'" that draws on participatory visual methodologies can have an impact on how issues of food security are addressed, particularly in relation to the incorporation of gender and HIV/AIDS awareness in higher education. Higher Education Institutions (HEIs), we argue, especially those working in the area of agriculture and food security, could take the lead in adopting strategies that help to ensure the mainstreaming of gender and HIV/AIDS in curriculum and pedagogy, and improve the general climate for teaching and learning for both male and female students. To date, few food security initiatives have looked directly at who is learning, what is being learned and how is it being learned in Faculties of Agriculture. In a country like Ethiopia, however, where agriculture is at the centre of development and where close to 80 per cent of the population live and work in rural areas, HEIs have a key role to play.

INTRODUCTION

"You cannot just go to someone in the rural areas and say 'I am here to do a demonstration on poultry' without taking into consideration their situation. They might need food; they may not know where to get medicine. A child may be struggling in school because they have missed so many

days of schools. You have to deal with those issues first." (XYZ, female lecturer)

"We are morally obligated to give complete and thorough attention to HIV. There is no way, given today's context of HIV/AIDS that one could not. If a lecturer were to ignore HIV/AIDS, she should be asked to leave". (female lecturer)

The comments above come from two lecturers who work in sub-Saharan universities (HEAIDS, 2010). In response to the interview question, "How do you address HIV/AIDS in your teaching?" both remind us of the responsibility Higher Education Institutions (HEIs) have in preparing professionals for community-based work. In the case of the first comment, the respondent notes that teaching and research is not 'business as usual' as long as there are high prevalence rates of poverty and HIV/AIDS. She acknowledges that her teaching must be about more than simply the technical aspects of poultry management. The second comment is offered in relation to the necessity of addressing the issue of keeping students alive, and the importance of ensuring that the teaching community makes space for students to express directly and explicitly their concerns about their own health and sexuality. Case studies carried out in a number of African universities point to the diverse ways in which HEIs have responded to the issue of addressing HIV/AIDS. These responses range from systematically developed HIV/AIDS-related policies and programmes, to research, service provision, peer education, and various academic responses, including the integration of HIV/AIDS into curriculum (as part of a course or module, as a set of assignments, or as stand-alone HIV/AIDS-focused modules). Notwithstanding the centrality of research in the area of HIV/AIDS and the important place of universities in initiating and sustaining a research agenda, teaching itself remains a core mission of universities. What type of teaching and learning in relation to HIV/AIDS is currently being carried out? What are the key models and approaches? What are some of the critical challenges of engaging in academic work in such areas as waste management that, up to a few years ago,

was not a curricular issue that included HIV/AIDS content? The two introductory comments serve to frame this article. First, they help to establish some of the critical issues linked to HIV/AIDS, and indirectly to gender, as far as addressing food security in the work of HEIs is concerned in Ethiopia and other parts of Southern and Eastern Africa. Second, these comments suggest the need to identify tools and methods that work towards ensuring what Choudry and Kapoor (2010) refer to as a 'from the ground up' approach to curriculum and pedagogy that place our students and communities at the centre of the teaching and learning cycle.

Curriculum, Pedagogy and Food Security in Higher Education Institutions: What does Gender and HIV/AIDS have to do with it?

A study of the capabilities of five agricultural universities and colleges in Ethiopia in relation to the participation of female students and female staff points to the under representation of women at all levels (Bekele, 2006). Gender-sensitive recruitment strategies, where they exist, have often not been successful, and improving retention rates has also been a challenge. Thus, young women are not only under-represented even at the time of entering university, but also have high drop rates in the first year. Amongst the many recommendations of Bekele's report, key ones include strengthening access to resources and learning centres for female students, offering strong support services such as separate discussion groups, ensuring access to separate facilities, developing support for role models (including recruiting more women staff), and ensuring the collection of sex disaggregated data on participation. The Bekele study (2006) also pointed to the relative absence of mainstreaming strategies which are a critical

component if we are to ensure that gender is also part of the curriculum in these same institutions, bearing in mind that young Ethiopian women and girls are still disproportionately affected by the HIV and AIDS epidemic. The country's 2005 Demographic and Health Survey indicated that 55 % of the 1.32 million people in Ethiopia living with HIV were female (a 1.9% prevalence contrasted with 0.9 % among men), with women accounting for 53.2 % of all new HIV infections. HIV prevalence among women is twice that among men (1.9% compared with 0.9%). Seven years later, the 2012 *Country Progress Report Response on HIV/AIDS* (FDRE, 2012) indicates that Ethiopia has made remarkable progress in curbing the epidemic, but also notes that there remains a gendered 'face of AIDS' that suggests the need for continuing and scaling up programs that incorporate a focus on gender.

Taken together, the available data on addressing gender in the curriculum of Higher Education Institutions and the need to consider the gendered landscape of HIV&AIDS highlight the role of universities in relation to curriculum integration. Here we consider the findings of a South African study that looked at the ways in which HEIs are addressing the integration of HIV&AIDS into the curriculum. A key component of the study explored the idea of 'champions' or faculty lecturers who had been identified by their deans and deputy vice- chancellors as advocates for the integration of HIV/AIDS content into their teaching and community outreach, (HEAIDS, 2010). While the study included faculty lecturers across nineteen different disciplinary areas, here we focus on those working in faculties of agriculture. Lecturers identified as champions and who agreed to be interviewed were asked to talk about their approach to teaching and, in

particular, their approach to integrating HIV/AIDS into their teaching. Informed by the work of Van Laren (2007, 2008, 2009) and Stuart (2007) in our analysis of these responses we noted that lecturers spoke about 3 types of knowledge: (1) personal knowledge, (2) disciplinary or content knowledge; and (3) workplace knowledge. While the responses of the lecturers focused less on gender as a category, many of their comments about interacting with students one-on-one often referred to the specific concerns of female or male students.

Personal knowledge

'Keeping students alive' was offered by many of the interviewees as a key consideration in their pedagogical approach. As one female instructor put it, "*How can I possibly teach just about poultry when my students are coming to me about testing positive? My first concern is to help them stay alive!*" Another instructor at the same institution and working in the area of waste management similarly comments:

You will see a student that had lectures, first and second year students and last year there were students that were very bright, they were 'A' students. This year they are dropping you can see and it would be alarming obviously to see student's marks drop just like that and you call them into the office and you speak to them what happened and it is a sad reality that almost each and every student is affected in some way or the other. You will find that most of the students are raised by grandparents; they don't have parents any more. Most of them they have sick mothers so they are not able to attend because they have to take care of their siblings. Their mothers are constantly sick in hospital; they can't walk so they don't have money to come to school. So these are the issues, to be honest, that I only found out about this year. I was not aware. female lecturer)

The responsibilities of the students beyond the classroom were also highlighted by another lecturer:

I also mentioned that some of the students they also have responsibilities. Some they are leading their households and some are orphans so if HIV/AIDS is integrated into the curriculum I think it will really help them when they finish their studies.

In some cases this acknowledgment of student issues extended well beyond the classroom in relation to contact time.

Content or Disciplinary Knowledge

This form of knowledge has to do with the actual discipline-specific content of the subject area. The responses of the participants indicate that this is one of the more challenging issues: some programmes such as psychology are more obvious areas for integration and some such as engineering are more difficult. Areas dealing with health-related topics seem to have had the most flexibility. In the case of pharmacy students, for example, integration could pertain to the chemical and biomedical aspects of anti-retrovirals (or particular topics around compliance. An instructor in Waste Management talked about her own research and advocacy in integrating HIV/AIDS, and then went on to talk about how this also informs her teaching in this area:

In South Africa when we talk of waste management they think about hospital waste without expanding, without thinking that waste is generated every day everywhere. Where there are people there is waste and chances are that there is medical waste and a lot of people are infected, you know, so you will find that nothing is safe anymore, so any waste generated is a cause for concern.

A lecturer in poultry production spoke about the ways in which the idea of the virus can be a cross cutting concept in

its applicability to the HI virus as well as the various viruses affecting poultry:

For me like it is actually good because the course that I am lecturing...if it is poultry it has got to do with physiology and all these things, you deal with viruses, you have to explain to the students what is a virus, what is bacteria and how does it work and why do you need a vaccine, how does the vaccine work and all that? So every time when I lecture let's say we are talking about a vaccine you are always going to make a reference to HIV and all those things and why we don't have a vaccine yet or why we don't have a cure for the virus and all of those things. So it is easy, so what I do, I don't have a lecture that says that I will put actually aside to say that this is for HIV and AIDS. We were told to actually do something like that but for me it will actually discourage students to actually attend. (female lecturer)

Another lecturer who also works in agriculture spoke about the ways in which HIV/AIDS has even influenced the development of, and teaching about, technologies:

We have realized that most of the projects like gardening where there are people who are HIV positive, it is actually difficult for them to actually plough and use the hand hoe and all that...so what we really tried to introduce there was the mechanical hand hoe, that one that you push and all that... And this should carry over into areas like engineering. I think even in engineering everything can be integrated if you actually understand your course, you can actually integrate it anywhere, because even the thing that I was telling you about [the hoe]...it was really the people from engineering who did this...because these people who are affected and they don't have energy so what can you come up with from the engineering side. So you have all these sectors.

Workplace knowledge

Workplace knowledge refers to the specific set of topics and skills that will be needed once the student graduates and begins work in a particular employment setting. Given the professional nature of the training students are receiving in their specific programs (e.g. Rural Extension and the training of Development Agents) the questions revolve around how their training should include information on what they would need in the actual workplace (i.e. working with colleagues, the nature of interaction with the public and so on). Workplace knowledge was poignantly described by a lecturer who prepares rural extension workers:

I focus more in extension on integration on educating rural people how to raise poultry. And then explain to the students that they need to go out and educate people because poultry is a good source of protein for people living with HIV and AIDS. They have a course that deals with community development, it's the extension, it used to be called agricultural extension so that is where I do a lot of integration because the students that we train in extension...after completion they go out and work with the communities and advise the communities on the issues of being able to plant vegetables properly, plant any other crops...or engage in many activities like nutrition that will help to boost their income in income generating projects which at the same time helped me to mitigate against AIDS, HIV and AIDS. And then the other course that I integrate HIV and AIDS in is the basic science. Our students are from disadvantaged backgrounds so we introduce them more to basic sciences and in basic sciences there is a section that deals with sexual reproduction and birth control. That is where I also fit it in because it fits properly into that section. So and then I give them some assignments and tests with some questions related to HIV and AIDS so as to test their level of understanding in terms of HIV and AIDS...HIV/AIDS is a very sensitive issue. That is why we have these technical courses

like poultry, crop production, animals...a person can have all these technical skills but without people skills it will be like... you cannot expect them...they can go out there and fail to convey the message because they do not have the skill of working with people. So extension deals with how to work with people in rural communities and taking into consideration their culture, their religious background, political backgrounds.

In some cases instructors focused on only one of these kinds of knowledge although in most cases there was a combination of two or a blend of all three. A good example can be seen in the case of the female instructor working in Waste Management noted above. Her opening comments in the interview were not about her disciplinary area at all. Rather, she went right to the point that she realized how serious the impact of HIV/AIDS was on her students; many of them were coming to her to report their HIV positive status. She also discovered that many of them were caring for sick parents and that there was very little food in the families. She saw herself in a counselor role. It was only well into the interview that she began to talk about her own disciplinary area of Waste Management and the ways that she has integrated HIV/AIDS into her teaching, research and community outreach. As she noted:

This is such a serious issue in this country. No one is checking on what is happening to syringes and needles outside of hospitals. And what about all the waste from schools and universities...sanitary towels...and in home-based care? We train all these home based care workers to go into homes of HIV positive patients and they change dressings. What do they do with the dressings? Does anyone know? What is happening at landfill sites where we know there are scavengers? (female lecturer)

Clearly her work would also have an impact on the students as they prepared for the workplace. An example of a lecturer combining the first and third knowledge areas (but not addressing disciplinary knowledge per se) can be seen in the narrative of a male Chemistry lecturer in his work in a Faculty of Agriculture where he teaches a course called "Becoming a professional". The course is designed for students who are about to go out to work in the chemical industry. Once a week in the students' final semester, the instructor dedicates a 90-minute session to talking about different aspects of HIV/AIDS that the students experience in their lives. He noted:

"I never really prepare. I just open it up to students and if they ask me questions or raise issues that I can't answer I come back to them the next session with the answers". ... It is a matter of trust. They trust that I will answer their questions and will take them seriously. I know that they could also go to the clinic on campus but they obviously don't have the same trust."

This lecturer commented on how he encourages his students to invite their friends as well. He noted that while the course has only 12 officially enrolled students, 38 students regularly attend. The students, using their own initiative (although supported by the instructor), arranged with the university administration to have the course time changed from early on a Friday morning to later on a Friday after all their other courses were finished so that the sessions could stretch on into the afternoon. In the case of this instructor the contact went far beyond the classroom. He spoke about a young woman who came to him in despair about her HIV-positive status. She worried about the effect on her father. The instructor asked the young woman to invite her father to the university so

that he could speak to him directly. This same instructor spoke about the steady stream of students (his own and others) who came to see him in his office in order to address issues around their health and sexuality.

These examples of what champions do in their teaching highlight the way in which lecturers look creatively at curriculum, but also how they see their teaching as transcending the four walls of the classroom. All the instructors who were teaching in Agriculture identified themselves as scientists and yet they also saw themselves filling the role of delivering social and bio-medical content as necessary.

Participatory Visual Methodologies: From the Ground Up Policy Making in Addressing Gender and HIV/AIDS

The section above identifies some of the ways in which 'champion' faculty lecturers have integrated HIV/AIDS (and, to some extent, gender) into their teaching and community outreach. These are, for the most part, lecturers who have simply taken on these roles without necessarily being part of a university-wide initiative. But how do we institutionalize this kind of work, making it more systematic and explicit? One way to approach this work is to explore the ways in which universities might engage in addressing the issues more explicitly and through direct interventions that place students and communities at the centre. A key aspect of this work is a consideration of the ways in which participatory visual methodologies might be incorporated into teaching and community engagement. In particular, we are interested in the question: 'How do participants come to 'see for themselves' the issues in their everyday lives?' Various researchers in visual sociology have identified and explored a number

of visual tools, ranging from participatory video to drawing, and from working with archival photos and objects to photovoice (see for example the work of Pink, 2001; Banks, 2001; Milne, Mitchell and De Lange, 2012; Mitchell, 2011 and Pauwels and Margolis, 2011; Theron, Mitchell, Smith and Stuart, 2011). Here we consider some of the ways that photo-voice has been used as a participatory visual tool to explore ways of integrating gender and HIV/AIDS into curriculum and research.

The term photo-voice, as coined by Caroline Wang and as now used in a wide range of projects and studies which seek to study the world through the eyes of participants, typically those most marginalized, refers to a set of practices that involve giving cameras to participants to document the critical issues in their lives (1997). In Wang's case, women in rural China were given cameras to document their working in the rice fields. In another photo-voice study, Mitchell, De Lange, Moletsane, Stuart, Taylor and Buthelezi (2005) give cameras to rural teachers and community health-care workers to document how they see what we have called the face of AIDS in their community, and the ways in which their photographs might provide a forum for discussion. Some recent examples from Ethiopia offer insights into how these approaches can be incorporated into community outreach (working with youth as part of an environmental project) and into professional development (in addressing gender violence in and around campuses).

Wake Up and Smell the Coffee (Youth and environmental issues)

The context for 14-15 year olds in grade 8 and 9 participating in the *Wake up and smell the coffee* project in Jimma, Ethiopia, is one that acknowledges the

critical role of environmental degradation and climate change in a country whose economy and overall health in terms of food security depends on agricultural production.¹ Over 80 per cent of the population lives in rural areas and is attached in some way to agricultural production. The youth participants quite literally live in the land of coffee, Jimma, which is the birthplace of coffee. Inspired by Jimma University's focus on community outreach, the project asked the question 'What does it mean to grow up in the land of coffee?' and in so doing sought to study how young people see themselves as protagonists in addressing environmental issues.

In the project, we tried to capture qualitative data during the study. Figure 1, for example shows the photo-voice group in action, engaging in discussion with a group of female agricultural workers who are working on coffee production. Primarily, the photographers must decide whether the image of female farmers fits in with the issues of the environment they are meant to be capturing in relation to coffee production. In this case they decided that it was important to understand the division of labour between men and women. They then had to negotiate with the women whether they would be willing to be photographed and if so, how they would be represented.

¹ The Wake Up and Smell the Coffee study is part of the larger Post Harvest Management to Improve Rural Livelihoods project involving the Nova Scotia Agricultural College, Jimma University, McGill University and funded through the Tier 1 program of the Canadian International Development Agency. The project is led by Tessema Astatkie.



Figure 1. Negotiating images

One of the most important components of photo-voice projects is the work that participants themselves do with their images. This can include everything from looking at the photos, typically printed out and existing as material objects (Edwards, 2004), through to sorting and comparing, to selecting from the 30 or more photographs 9 or 10 for analysis (as either a poster-analysis or a PowerPoint presentation).



Figure 2. Working with the photographs

Not all photo-voice projects include a public exhibition and even when they do, not all photo-voice exhibitions are created by the participants themselves. The youth who participated in the *Wake up and smell the coffee* project participated in an exhibition, selecting 25 images, producing captions, and composing the curatorial statement for this exhibition

that took place at their school at an event that involved all the parents and various members of the university who had been involved in setting up the project in the first place.

What is significant about this participatory work is its deep engagement of people as young as 13 or 14 in identifying and working with disciplinary knowledge related to environmental issues. The success of the project suggests that undergraduate students working in such areas as food security and HIV&AIDS could similarly be engaged in putting forward their own knowledge and perspectives.

Feeling safe, feeling not so safe: What does our campus look like?

An important aspect of how universities take into consideration teaching and learning is to consider issues of safety and security. What awareness do lecturers have of what the landscape is like for students? How do they see the issues and what difference might this make to their teaching?

Two photovoice workshops were conducted with lectures. One group was made up entirely of 20 female lecturers. The second group was made up of a mixed group of 20 males and females. As with the case study above where youth used cameras to explore 'growing up in the land of coffee', participants took photos in small groups, worked with the photos, created captions and presented them to their colleagues. See figure 3 below.



Figure 3. A hot spot for female students' harassment

What was clear in the images and in the ways in which lecturers worked with the images, taking the photos on campus was, as one person put it, 'a real eye-opener'. It forced them to navigate the campus, often visiting spaces they would not normally visit in order to 'see for themselves' where there are safe and unsafe spaces, especially for female students. They said that it was frustrating being unable to ensure a safe environment for female students all the time, and although the university had now installed phone booths on campus so that female students would not have to leave the campus to make phone calls, there were still many aspects of everyday life that required them to leave the safety of the campus.

Other lecturers looked more closely at what they termed 'empty spaces' which in and of themselves meant that female students might not be safe. Their image of the feet of a female student trying to navigate through the long grass and wire in Figure 4 symbolizes the difficulty of navigating the space of HEIs for women.



Figure 4. Many obstacles for females

What has been an important follow-up to this work is the investigation into how male and female students might themselves study, through photovoice, the safety and security of the campus.² We regard this as a clear example of 'from the ground up' policy making in that it was the lecturers themselves who decided that the insider view of the students was required.

CONCLUSIONS

Our goal in this article has been to highlight, first, some of the ways that faculties of agriculture might consider the curriculum itself as a key entry point to putting gender and HIV/AIDS on the agenda. The question 'What can we learn from the champions?' is one that should be taken as a strong reason for undertaking teaching-learning collaborative engagements as part of the work of HEIs. A second component of the article has been to consider the significance of participatory visual methodologies and the ways in which they facilitate the expression of community and student perspectives. We have offered two examples of photovoice projects that could be read as part of 'from the ground up' policy-

²Here we are referring to the "Looking back to look ahead: Addressing barriers to young women's participation in agriculture in HEIs" as part of the Post-Harvest Management to Improve Livelihoods Project.

making. While there are many lessons that might be taken from the literature on HIV/AIDS in HEIs, a point that relates indirectly at least to curriculum and teaching highlights the differing student and staff involvement in HIV/AIDS response initiatives. A number of the case studies conducted in HEIs show that students are often more active in HIV/AIDS response initiatives than are members of staff. Abebe (2004), for example, observed that staff involvement particularly among the academic staff in HIV/AIDS response initiatives is almost invisible. This would suggest that the bulk of initiatives are extra-curricular rather than curricular in nature. Student-based activities are more dominant and staff involvement is often the exception rather than the rule. As Katjavivi and Otaala (2003) have noted, students in HEIs have generated a creative array of activities in response to the HIV crisis. They highlight examples of good practice by universities that feature student engagement. For example, they discuss the use of a Youth Radio Station by the University of Namibia to entertain and educate the youth on issues of HIV & AIDS. The self-initiated efforts of 'the champions' and the creative engagement of lectures at Jimma University involved in photo-voice activities looking at the gendered landscape of the university and ways of addressing issues of safety and security for female students suggest that creativity can itself be both cross-disciplinary and intergenerational – and linked to the agenda of food security.

REFERENCES

- Abebe, H.G. 2004. *African universities' response to HIV/AIDS in the Global AIDS Initiative countries: A synthesis of country reports*.
- Bekele, F. 2006. Fact finding of gender training capabilities in agricultural universities/colleges and organizations supplying gender training in Ethiopia. Unpublished report to CIDA.
- Chetty, D. 2000. *HIV/AIDS and South African universities: Current issues and future challenges*. A presentation to the South African Universities' Vice Chancellors Association, October 26, Johannesburg.
- . 2001. *South African universities and HIV/AIDS: Developing a sector-wide response to the HIV epidemic*. South African Vice Chancellors Association (SAUVCA) resource documents.
- . 2003. An HIV/AIDS toolkit for tertiary institutions. A case study prepared for "Improving Tertiary Education in Sub-Saharan Africa: Things That Work!" Regional Training Conference, Accra, Ghana, September 23–25.
- Chetty, D., and Michel, B. 2005. Turning the tide: A strategic response to HIV and AIDS in South African higher education. *HEAIDS Programme Report*, 2002–2004.
- Choudry, A., and Kapoor, D. (Eds.). 2010. *Learning from the ground up: Global Perspectives on social movements and knowledge production*. New York: Palgrave MacMillan. Temple University Press. London and New York: Routledge.
- Edwards, E., and Hart, J. (Eds.). 2004. *Photographs objects histories: On the materiality of images*. New York: Routledge.
- FDRE, 2012. *Country progress reports on HIV/AIDS response, 2012*. Addis Ababa
- HEAIDS, 2010. *Creating space for HIV and AIDS in the curriculum – A rapid assessment of curricular responses in South African higher education institutions*. Pretoria: Higher Education South Africa.
- Katjavivi, P. H., and Otaala, B. 2003. *African higher education institutions responding to the HIV/AIDS pandemic*. Paper presented at the AAU Conference of Rectors, Vice Chancellors and Presidents of African Universities (COREVIP), Mauritius, March 17–21.
- Mitchell, C. 2011. *Doing visual research*. London and New York: Sage
- . 2009. Geographies of danger: School toilets in sub-Saharan Africa. In O. Gershenson & B. Penner (Eds.) *Ladies and Gents*. (pp. 62-74). Temple University Press. London and New York: Routledge.
- . 2008. Taking the picture, changing the picture. Visual methodologies in educational research in South Africa. *South African Journal of Educational Research*. 28 (3), 365–383.
- Mitchell, C., and De Lange, N. 2011. Community based video and social action in rural South Africa. In L. Pauwels and E. Margolis (eds). *Handbook on Visual Methods*. London: SAGE.
- Mitchell, C., and Pithouse, K. 2009. *Teaching and HIV/AIDS in the South African classroom*. Johannesburg: Macmillan.

- Nebe, W. 2009. *Building contexts for learning: The Drama for Life post graduate program*. A paper presented to the HEAIDS symposium From Reflection to Action: Obstacles and Success in Integrating HIV/AIDS Into University "Curricula", East London, University of Fort Hare, May 15–17.
- Stuart, J. D. 2007. "*From our frames*": *Exploring visual arts-based approaches for addressing HIV and AIDS with pre-service teachers*. Unpublished doctoral thesis, University of KwaZulu-Natal, Durban.
- van Laren, L. 2007. Using metaphors for integrating HIV and AIDS education in a mathematics curriculum in pre-service teacher education: An exploratory classroom study. *International Journal of Inclusive Education*, 11, 461–481.
- . 2008. Exploration of strategies to integrate HIV and AIDS education in pre-service teacher education. *African Journal of Research in SMT Education*, 12(Special Edition), 47–62.
- . 2009. *Starting with ourselves: Integrating HIV and AIDS education in a mathematics curriculum in pre-service teacher education*. Unpublished doctoral dissertation.
- van Laren, L., and Ismail, R. 2009. Integrating HIV and AIDS across the curriculum. In C. Mitchell & K Pithouse (Eds.), *Teaching and HIV and AIDS in the South African classroom*. Johannesburg: Macmillan.
- Wang, C. and Burris, M A. 1997. Photovoice: Concept, Methodology, and use for participatory needs assessment. *Health Education Behavior*. 24 (3): 369-387.