Using Online Discussion Forums to Promote Critical Reflection among Pre and In-Service HIV/AIDS Educators and Service Providers

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Abstract

Around the globe, people with HIV/AIDS are increasingly those who are most marginalized within their societies and with least access to health education and prevention efforts. Rising HIV infection rates within underserved populations demonstrate a vital need to critically reflect upon the nature and practice of HIV/AIDS education and prevention.

Online learning is increasingly being used as a way of bridging gaps of space and time between health educators/ providers and training resources. While the majority of the literature cites little or no difference in learning outcomes between in-person and online courses, the processes by which students learn in these two teaching mediums are markedly different. It is essential to identify those aspects of online education that promote critical reflection so that they can be incorporated into the best practices of distance learning and used in training future health educators and providers.

This study examines discussion forums of online AIDS education courses conducted as part of a graduate level health education program. It explores the nature of critical reflection in online discussion forums, details the ways in which students engage in reflection, and makes recommendations for fostering reflective thinking as part of asynchronous health education training.

Key Words: *HIV, Online Learning, In-service Training, Professional Education, Critical Thinking*

Introduction

AIDS Education Past, Present and Future

In the beginning of the epidemic, AIDS was an undetectable and untreatable health threat. HIV antibody testing was not available until 1985, and AZT, the first anti-retroviral drug to suppress the replication of the virus, was not approved by the FDA until 1987.[1] Since traditional medical management approaches could not be implemented, early HIV/AIDS programs focused, out of necessity, almost exclusively on prevention and education.

AIDS education programs targeting gay men and intravenous drug users, the first populations in which AIDS was identified, began in the early 1980's.[2] These first efforts relied upon behavioral interventions and began even before the exact etiology of the disease was known.[2] Despite the initial appearance of AIDS in marginalized subpopulations of society, the idea that AIDS could and would spread quickly to the mainstream provoked both fear and action. In 1988 Congress mandated that community based organizations receive federal funding to bring AIDS education and prevention programs to marginalized and underserved populations.[3]

Public health advocates and educators also called for the establishment of AIDS education and prevention programs within public schools as a way to prevent AIDS from gaining a foothold in the next generation.[4] In 1988, the Centers for Disease Control and Prevention (CDC) developed and published guidelines to assist in the implementation and evaluation of these school-based programs.[5] The CDC plan called for the development of school-based AIDS prevention programs that were comprehensive, age appropriate, sensitive to students' specific racial and cultural backgrounds, and provided opportunities for students to develop self-efficacy and proficiency in decision making and communication skills. State and city governments responded by passing legislation that promoted and/or required AIDS education in schools. Currently, all fifty states either mandate or recommend AIDS education programs in public schools.[6]

While CDC recommendations state that periodic HIV/AIDS in-services should be provided for all teachers, most especially those responsible for HIV/AIDS education,[3] only nine states and the District of Columbia require that teachers receive *any* HIV/AIDS specific training before teaching HIV/AIDS prevention courses.[6] Despite the fact that the majority of secondary schools require health education classes and specific HIV/AIDS prevention components, there are serious doubts that students are receiving sufficient instruction and proper skills training from teachers who are adequately prepared to teach health education. States have mandated that HIV/AIDS education be delivered in public schools, without making adequate provisions that those responsible for the creation and delivery of these programs would have the requisite skills or training.

Finally and most recently, the challenges for teachers delivering HIV/AIDS education in public schools have increased with the ascendance of abstinence-only programs. In the past decade, federal funding has significantly increased for school-based programs that have as their sole purpose the promotion of sexual abstinence outside of marriage.[7] These programs have been widely criticized by advocates of comprehensive sexuality education for withholding information and misrepresenting the risk of sexual behaviors.[8] Other critics point to the lack of empirical evidence demonstrating the effectiveness of an abstinence-only approach in preventing the transmission of HIV and other sexually transmitted infections. In 2006, the Society for Adolescent Medicine issued a position paper calling for the abandonment of abstinence-only programs.[7] Yet, increasingly, comprehensive sexuality education in schools is being supplanted by an abstinence-only approach.[8]

In the twenty-five years since it was first identified in the United States as an obscure infection of gay men, the face of HIV/AIDS has changed dramatically. Those infected with and affected by HIV/AIDS are increasingly and disproportionately female and/or ethnic and racial minorities.[9,10] Social inequities on the basis of race, ethnicity, gender, sexual orientation and HIV status significantly impair HIV prevention efforts.[10] In its 2005 annual update, UNAIDS stated that HIV stigma and the resulting actual or feared discrimination have proven to be perhaps the most difficult obstacles to effective HIV prevention.[11]

Rising infection rates within such marginalized populations as men who have sex with men, prisoners, injection drug users, sex workers, refugees and internally displaced persons demonstrates a vital need to reexamine the nature and practice of HIV/AIDS education and prevention. The growing role of abstinence-only education, despite a lack of

empirical support, is provoking discussion and debate about the ethical underpinnings at the foundation of HIV/AIDS education and prevention programs.

Effective prevention programs targeting marginalized groups can play a significant role in curtailing the global spread of HIV.[3] Yet the literature continues to cite a wide and growing disconnect between public health messages and the private lives of people engaging in high risk behaviors.[10] Health educators and providers need to be able to critically examine their own attitudes about and orientation to the issues surrounding HIV/AIDS education and prevention before they can work to eliminate the disparities that these populations face, and to create prevention programs that do not increase the stigma associated with HIV infection.[12]

Research about Online Education

In the past decade there has been an abundance of research on countless aspects of distance learning. Online education programs have been demonstrated to provide economical and consistent training to health educators and service providers who are geographically distant[13] or living in rural[14] or other resource poor areas.[15] As more and more research reports finding no significant differences in learning outcomes between online courses and more traditional campus-based courses[16,17] the demand for and acceptance of educational programs delivered through asynchronous learning networks increases exponentially. More colleges are adding distance learning programs both as a way to remain competitive and in response to student demand for online offerings.[18]

Despite similarities in outcomes, there are obvious differences between internet and campus based courses. Instructors play a different role in online courses, serving more as a facilitator between the student and the information than as the source and sole provider of knowledge.[19] Interactions between students also tend be of more significance in the online courses,[19] where anyone can post in discussion forums and ideas are judged by their relevance or merit rather than their source. For these reasons, research suggests that distance learning courses are especially well-matched with adult learners and higher education programs.[20]

Qualitative differences have also been found in the ways in which students discuss issues in distance learning courses. The asynchronous nature of many online courses allows time for careful thought and analysis of both the course materials and other students' responses.[21] The lack of face-to-face interaction with other students, which is occasionally cited as a negative feature of online learning environments, can actually allow students to voice divergent opinions or thoughts that might go unheard in the classroom environment. Research has suggested that learners may feel more comfortable showing emotion and recounting their thinking process through the relative 'safety' of the discussion forum.[21] Online conversations tend to be perceived as more equitable and deliberate than those that take place in classrooms.[16]

Separation in time and space also encourages students to gather more information or insight necessary to frame a point of view or respond to statements of an instructor or fellow student. This ability to consider statements before responding is especially important when discussing controversial or emotionally charged issues.[22] Unlike in-person discussions where participants may feel the need to respond to an exchange in the heat of the moment before the class or discussion ends, in an online environment students can take time away from the discussion to decide how to best frame the issue and their response.[22]

These distinct features of distance education: the ability to reach diverse groups of learners across space and time, the flexibility of scheduling, and the space to think about and discuss sensitive and emotional issues, make it an ideal forum through which to deliver AIDS education programs to educators and health service providers. Furthermore the scalability of online courses and the ability to negate geographic barriers would allow a single course or set of courses to reach the broad and diverse audiences needing HIV/AIDS pre- and in-service training both in the United States and abroad.

Distance learning has not yet been widely implemented in medical and health education. Only one-half to one quarter of member schools of the American Association of Colleges of Nursing offer online nursing courses to their undergraduate students.[18] The majority of continuing medical education providers do not offer distance education programs, and those that do tend to rely primarily on printed materials and videoconferencing rather than online instruction.[23] However the initial research on distance-based medical education courses echoes the conclusions of the broader literature, finding that the online format allows for the development of awareness and understanding of sensitive

communication issues,[24] critical thinking about knowledge and practice,[25,26] and active student involvement in learning relationships.[27]

Research conducted in an online nursing ethics course reported that participants found the web-based discussions to be compelling and caused them to experience both cognitive dissonance and reflection on the issues presented.[28] Participants within the nursing ethics course also noted that the time and space inherent in the format allowed them to better and more fully express their thoughts and feelings on the topics than they would have in an in-person setting.[28]

Within the distance learning literature there are several important areas which the research has not adequately explored. The research on distance learning has focused on educational outcomes and the technology used to achieve these outcomes, but has largely skimmed over the processes through which learning takes place in distance education courses.[29] This initial direction in the research makes sense given that learning effectiveness is the *sine qua non* of educational programs.[16] However, the focus on demonstrating that no significant differences in learning outcomes exist between in-person and online courses has created a body of knowledge in which the unique processes of online learning have not been as thoroughly explored. [16]

The pedagogy and best practices of asynchronous education continue to based largely on individual experience and past practice, rather than research.[30] Research on the practices through which asynchronous discussion can encourage critical reflection is particularly absent from the literature.[31] Past research has noted students' and facilitators' perceptions of online discussion as being more deliberate and mindful, without examining precise practices or features that make it so.[16] This study is different in that it focuses on the processes and practices associated with reflective thinking in online discussion.

As distance learning becomes more accepted and widespread, there is a growing need to investigate the specific factors on online learning which facilitate and enhance individual aspects of student learning.[32] It is no longer enough to be able to state that students do learn in online settings; we need to understand how students learn and what features of the online experience enhance their thinking and understanding. Now that we know that distance learning is largely successful, clearer understanding of the processes that lead to this success will allow for the continuation and replication of successful online educational programs.

This study focused on reflective thinking, a single critical aspect of learning in HIV/AIDS training programs, and examined ways in which reflective thinking is demonstrated in online discussion and the specific characteristics of online discussion that are antecedent to demonstrations reflective thinking. In doing so, this study created a framework for conceptualizing and enhancing reflective thinking in distance-based health education courses.

Methods

Data Sources

Since the fall of 2002, an online course in AIDS education has been offered at a large graduate college of education. During the fifteen week semester each student enrolled in the course was asked to complete a series of readings and then discuss in an online forum various questions and issues related to the readings. The three most recent online HIV/AIDS education courses were selected for this study. All students who enrolled in any one of the three courses were invited to participate in the study. Twenty-nine out of forty-nine students consented and were enrolled.

Data Collection

Within each HIV/AIDS education course, all students were required to log into the discussion forum and respond to a series of questions posed about that week's topic. Students were encouraged to respond to their classmates' comments and pose questions of their own as the conversation grows and other issues and topics are uncovered. Every posting (n=1080) from a participating student was copied verbatim from the course site. Participants were randomly assigned a gender-neutral name.[1] Each posting was recorded with the assigned name and a number that identified the week and the sequential order in which the posting was made. Thus 'Kai1102' is the second posting made by Kai during the eleventh week of the course.

[1] Three-quarters of students at the graduate school in which this research was conducted are female. Subsequently, the large majority of the participants in the study were also women. In analyzing and discussing the postings the names assigned to each participant and random gender pronouns are used so not to suggest that any specific participant was either male or female. No inferences were made or should be attributed to the assigned gender of the participant.

Once all of the postings from participating students were copied from the discussion forums, they were grouped according to participant and the specific course in which they were enrolled. The text of each separate posting was analyzed and is quoted in the research as it appeared in the discussion forums.[2]

Data Analysis

This study utilized a coding method created by Kember et al. which is derived from the work of Mezirow and first divides writing into the categories of non-reflective thought, which are not coded, or one of several types of reflection: [33]

- **Content reflection**- reflection on *what* one believes, experiences or acts upon. This includes all postings where students reflect on *what* they know or believe.
- **Process reflection**- reflection on *how* one comes to their beliefs, experiences or actions. This includes all postings in which students reflect on the *source* of their beliefs.
- **Premise reflection**- reflection on *why* one has specific beliefs, experiences or actions. This includes all postings in which students question the *validity* of a belief. [33]

This coding scheme is appropriate because it allows the differentiation between introspection, which involves the identification and recognition of thoughts and feelings, and true reflection which requires an examination of the underlying reasons for those thoughts and feelings.[34]This is especially important in the context of HIV/AIDS where people may have very strong thoughts and feelings about issues, without ever truly reflecting on the source or validity of these beliefs, or the conclusions drawn as a result of these feelings. Postings that contained demonstrations of reflection were categorized by type of reflection and the topic that generated the posting. Reflective postings were then analyzed for common themes using a grounded theory approach.

[2] The only changes have been to correct minor spelling errors for the sake of ease of reading. In order to protect the identity of both participants and non-participants within the online AIDS education courses, any identifying information included in the posting was replaced with a label in capital letters that describes the omitted noun(s). For example, a posting that originally read, "In my job at Columbia Presbyterian," would be changed to "In my job at HOSPITAL." Names of non-participants that were used in the postings have been replaced with the word 'NAME'. Colloquial spelling (such as using 'ya' for 'you') and emoticons, punctuation symbols used to convey expression or emotions like :) and : (were left in the text to help convey any non-verbal meaning that the participants may have wished to communicate.

Results

The majority of participants (26 out of 29) demonstrated some type of reflection in discussing one or more of the course topics. Table 1 has a breakdown of the types of reflection for each topic. What follows is a discussion of both the content and context of these postings.

Questioning How They Know

The literature on online learning has noted that the lack of visual and auditory cues inherent in online learning prompts participants to be more explicit in detailing their ideas and thought processes than they are in face-to-face courses or spoken conversations.[32] This was also true in the AIDS education courses in this study. In single or multiple postings participants detailed their initial impressions, later thoughts, and the impact that others' statements or the group discussion has had on their judgments about an issue.

Jamie0601. Topic: Partner Notification; Subject: Re: Partner Notification

This is a tough one. I started forming opinions before I went through the readings, but the readings complicated things. My first thought was, "From a public health perspective, absolutely there should be mandatory partner notification in order to track the disease, hopefully prevent or slow its transmission and allow people to get treatment." But then I read about how mandatory partner notification programs with other STDs has resulted in a breach of trust between public health or care givers and the public, namely the diseased persons aware of their status. I could also see how partner notification in some cases could endanger the informant and then there's the stigma attached. So maybe voluntary partner notification is not that great of an idea…

My next thought, was, "Well, HIV is different from other communicable diseases. Informing partners about HIV may not break the chain of transmission as is the case with other curable STDs. But that is precisely the point. HIV leads to death, so partner notification becomes as much an ethical issue as a public health issue. Everyone is entitled to privacy, but what about life?"

Jamie0801. Topic: Testing for HIV; Subject:

Re: Mandatory testing for HIV?

In the meantime, I feel torn. I feel compassion for the situation of those living with AIDS, for their privacy, and desire to avoid the shame and stigma. However, I also feel great concern for those people who have not contracted HIV but then because another willingly chooses to not disclose their status, the uninfected become infected. We've talked the circle of personal responsibility--if you don't know for sure, your partner's status, always practice safer sex, but what about Stein's example on page 410 of the couple who were tested so that they could be married and have children and the man chose not to reveal his status to his wife to be?

I do feel like mothers and/or babies should be tested--from both public health and ethical standpoints in terms of the spread of HIV and the repercussions faced by the untreated baby. It kind of reminds me of a pro-life/choice argument though because of the risk of stigma and shame inflicted upon the mother by testing vs. the risks that child faces. I see in the long run, however, that the testing would be beneficial to both parties if treatment is received.

Jamie0803. Topic: Testing for HIV; Subject: Replying to myself...

I sent in my answer before reading everyone else's thoughts. Now that I've read everyone's responses, I've decided that I have a lot more to think about and research before making an educated answer to this question.

Ugh, the complexities,

Jamie

The ability to write down one's own thoughts, and then reread them over time and in the context of what others have written, allows participants to identify, detail, re-examine, and occasionally answer their own inquiries. These three separate postings, written over the course of two weeks, allow Jamie and others to actually see the process of her thinking and the ways in which her thoughts were shaped by both the course materials and the responses of other students. Her final posting demonstrates that she has gone back to her previous postings and reassessed her ideas in light of her further thoughts and the challenges others have posed.

Students also use process reflection to recount specific experiences and then talk about what they have learned or how the experience has shaped their views on the topic:

Hadley0502. Topic: AIDS Education in the Schools; Subject: Comprehensive sexuality education

In a conversation I had with a co-worker about abstinence I told him that I felt there were too many influences in the media encouraging teens to have sex. I felt teaching abstinence was an uphill battle and that one was better off focusing on safe sex practices.

I have a 1yr old daughter and he asked me what I would tell her about sex when it was time. I told him abstinence. :) As an educator I think and feel one way, as a parent I think and feel another. I hope to bridge the two and make sure my daughter comes away with the right message. You can have sex, these are the precautions you should take, now wait.

Hadley0603. Topic: HIV Partner Notification; Subject: Why wouldn't a person with HIV tell all of their partners?

I was thinking about this topic a lot. My mother is ill and in talking with her about her illness what she chooses to disclose and to whom can seem irrational. But for her, it is what she feels she needs to do to remain positive and healthy. Knowing someone with a serious illness lends me to be more understanding of the irrationality of decisions made regarding their illness. I may not agree with why an HIV+ person would not tell all of their partners of their status but I can understand the irrationality, or at least see where it comes from.

These instances of process reflection, and others like them, provide a detailed map of the cognitive journey that participants take as they interact with the course materials and each other. The route may be linear or circuitous but, when detailed in the discussion forum, the path becomes visible.

Questioning What They Know

Participants also frequently demonstrate content reflection as they detail how their thinking has been shaped by the readings, and what it is they have come to believe.

Kadin0301. Topic: Epidemiology & Treatment of HIV; Subject: Re: AIDS as a plague

> Reviewing these histories of plagues allowed me to remember how many times throughout history this "us" and "them" argument has been used. Even today, I think about AIDS on a global scale, and how much awareness has been blocked by the rhetoric of policy makers. When AIDS is viewed as a "foreign" disease, it makes it that much easier to ignore it until it has reached epidemic proportions.

Just as participants write about the impact that the readings have on their thinking, they also describe the way in which other participants' postings have influenced their thinking. In the examples below, participants point to specific comments that others have made during the conversation, and then go on to discuss how their own thinking has been shaped by others' remarks:

> **Nalin0404 . Topic: STI Co-factors; Subject: Re: Politically correct STI?**
>
> NAME, you bought up a point that I have not even thought about, "disease becomes integral with identity", in that sense I do feel that STI makes sense. However, I also feel like you can even label a person INFECTED-I guess it depends on who's saying it and what terms/context. It really sucks how once people find out what they are labeled as, ex. LD, gay, HIV, they literally become known for the label, then the person, rather the person with the label...GREAT POINT, I have only really considered the label in terms of disorders ex. dsm, or LD's.

In these examples of content reflection, the participants discuss what the readings or others' posting made them think or feel, and the conclusions that they have drawn as a result. They point to and emphasize the specific statements that made them think about the issue in ways that were new or particularly salient.

Participants also use the readings to reflect upon what it is they *do not* understand or know about an issue. In these cases participants frame the content reflection in terms of the *limits* of their knowledge and what it is that they are hoping to be able to understand in the future either through further thought, discussion or reading:

> **Lee0802. Topic: Testing for HIV; Subject: Re: Measures for annual HIV testing?**
>
> I am wondering and still trying to form my opinions regarding mandatory testing. NAME your example regarding your experience at CORRECTIONAL FACILITY, this is very interesting. I keep struggling with the concept of the testing being mandated. It sounds like the HIV testing is already being done, and very beneficial to make an understatement. I ask myself is mandating testing going to make a difference? If it is then clearly it is worth it and vital. I continue to be aware of knowing I don't see the whole picture. I am concerned that there will be times when mandated testing first causes harm to the individual being tested due to the stigma and discrimination associated with HIV, thus the benefits would not outweigh the risks. I think the example of CORRECTIONAL FACILITY is one where the benefits outweigh the risks. Still trying to come to a clear stance on this issue. Help.

> **Palmer1201. Topic: AIDS & Addiction; Subject: Re: safe and unsafe injection sites**
>
> I can see the logic behind the injection sites, but I'm iffy about the counseling that these sites provide. In the readings I read how bleach was also being distributed to drug users so they could clean their used syringes, but it was stated that many users couldn't read the instructions or were too out of it to understand the instructions. So my issue is how can the counseling work at these injection sites if users are too out of it (or high to listen or remember what the counselors have said to them). I guess the best thing we can do is keep data on these existing sites so can later analyze the benefits of the injection sites.

These examples show participants exploring the extent and limitations of their understanding of an issue. Their postings are a way of mapping, and possibly expanding, the geography of their understanding. In these postings, participants put forth possible explanations of what they have read, being very explicit that they are posing questions or possible interpretations and not irrefutable truths. They often acknowledge that they do not have the answers-- yet. In asking these questions participants are both framing the extent of their own understanding and inviting others to verify their construction of the issue or to suggest another alternative construction.

Asking, 'Is it right?'

Premise reflection involves examining the *legitimacy* of a belief or practice. It requires engaging in a type of reflection that is qualitatively deeper than that seen in either content or premise reflection. Most of the

premise reflection that was demonstrated within the discussion forum involved participants questioning the underlying meaning and especially the validity of the practices in which they are or might be engaged as HIV/AIDS educators and providers:

> **Kadin0203. Topic: Natural History of HIV; Subject: Re: Targets of Information**
>
> The complexity of HAART therapy has, in the past (and probably still now) been used as an excuse to deny medications to certain populations of patients, like injecting drug users, under the assumption that these populations wouldn't be adherent.
>
> What kind of judgments are made about patients by doctors, educators, and policy makers? Is it right that some people may be denied medication because of assumptions that they cannot use it correctly?
>
> **Kadin0204. Topic: Natural History of HIV; Subject: two questions....**
>
> My question is: How do we think we would react if, after we present all this information to clients, they decide that the regimen is really too hard to handle, and they don't want to take medication? Where does individual choice and informed consent fit into this idea of compliance -- in short, are we just providers telling patients what is best for them, or advisers letting people know of all their options?
>
> **Jamie0801. Topic: Testing for HIV; Subject: Re: Mandatory testing for HIV?**
>
> It seems that the catch as to whether or not mandatory testing should occur boils down to the shame and stigma attached to HIV/AIDS. What sets AIDS apart in the perceptions of the people that conjures up shame and stigma? What other diseases are more comparable in the way they are approached?
>
> What could we do as educators and health professionals to lessen the stigma attached to AIDS?

In the postings above Kadin and Jamie ask questions about the universal HIV/AIDS practice. Rather than asking questions about what they themselves know or believe about these issues, they focus on the legitimacy of the practice *itself*, and focus on issues at the heart of the unequal treatment that people with HIV/AIDS face.

Participants also question the validity of the practices in *their own* professional lives:

> **Cady0701. Topic: HIV Vaccine Research; Subject: Vaccine education**
>
> In my work experience, many consumers, health providers and the general public are misinformed about how this vaccine might work and the current research method. I am worried that the lack of knowledge may lead the public to see this vaccine as the miracle cure. How can we pass the correct and current information to our clients? Or should we?
>
> **Leslie0801. Topic: Testing for HIV; Subject: OraQuick**
>
> Also, at the research site I work at in CITY, we test all the participants for HIV and a slew of other STIs. Our medical technician, who also does all the pre- and post-test counseling, is absolutely against bringing the rapid HIV testing into our office because she feels that she doesn't have the training or resources to counsel people in this situation. Obviously, it is a participant's choice to consent to the HIV test, but many people have different reasons for participating in the research study. About 60% of people pick up their test results without any encouragement at all, so these people genuinely want to know their status. But of those other 40%, I'm not sure how many care about the results or the $30 they get paid to participate in the study. Is it our place to coerce them into getting the results? Is this something that should be standard or done at the request of the individual?

Cady and Leslie are using premise reflection to question the validity the assumptions that have been made in their own professional practices. Less often, participants turn the spotlight of premise reflection directly on themselves and publicly question their underlying beliefs and assumptions. These instances of self reflection are the rarest forms of premise reflection within the discussion forum.

In the following post, Casey recognizes a discrepancy between information that he wants for himself and that which he thinks is appropriate for other teachers, and in doing so brings to light contradictions in his thinking:

> **Casey0601. Topic: HIV Partner Notification; Subject: Schools, kids and body fluids**
>
> Would I, as the health teacher like to know who has HIV/AIDS? Yes, but it is illegal for me to have that information. (Yet, we ARE notified if a child has Hepatitis by this wording: "a child in the school has tested positive for Hepatitis. Please take the necessary precautions." With my training, I would expect myself to treat the information with the strictest of confidence. Yet, teachers generally don't do that. Students become the subject of the lunch room conversations way too many times. So, I wouldn't want just any teacher to have that information. Why do I want that information? That question is something I will have to ponder today.

Below, during a conversation about empowering women in developing nations to resist spousal abuse and adopt HIV-risk reduction techniques, Farren acknowledges that her beliefs on the subject are shaped by her own culture. In this post she questions the ways in which her own assumptions and experiences shape her judgments.

> **Farren0901. Topic: Women and HIV; Subject: Women in other nations and cultures**
>
> I really agree with what you say in your last statement NAME-Women need to be empowered within the cultural structure that they exist in. One thing I always struggle with when thinking about this inequity/power/rights issue-is what I mean by empowerment isn't necessarily right for other people. I often find myself judging based on what I know and my culture- but stepping back-this isn't "fair". I struggle to say what women in the so-called third world need to do/know. Obviously abuse of any sort is wrong-but there are other less clear issues that I struggle with and understanding the context is something that I would like to do more before judging.

Both of these postings show participants first identifying and then struggling with their own underlying assumptions about HIV/AIDS prevention and education.

Premise reflection was the rarest type of reflection seen within the discussion forum. Participants were much more likely to demonstrate premise reflection when examining the underlying validity of practices within the arena of HIV/AIDS education, prevention and treatment than they were in questioning the validity of their *own* beliefs and assumptions. Participants were much more likely to ask, 'Is it right that patients are denied certain types of treatment because of their providers' assumptions about how adherent they will be,' as Kadin did, then they were to ask, 'Are *my* beliefs and assumptions about who should receive treatment valid?'

Discussion

This research provides findings that could have significant impact on the ways in which training is provided to HIV/AIDS educators and service providers. The majority (26 out of 29) of participants in all three courses examined in this study demonstrated critical reflection at some point during the semester. Process reflection was typically the first type of reflection that participants demonstrated and was most often demonstrated during discussions of how personal experiences have shaped thinking, descriptions of the cognitive processes generated by the course materials, and the ways in which other participants' input had generated new thinking.

In contrast, examples of content reflection were typically seen in subsequent postings and most often appeared in discussions of either the course readings or other participants' comments as students detailed the substance of their changed ideas or impressions.

Premise reflection was more rarely seen. Fewer than half of all participants, and just slightly over half of those participants who *did* demonstrate critical reflection, engaged in premise reflection at some point during their course. Premise reflection was most often seen when participants questioned the underlying assumptions and values implicit in HIV/AIDS prevention and treatment policies. Less commonly, participants demonstrated premise reflection by questioning their classmates' assumptions or principles. Participants were least likely to engage in premise reflection by explicitly questioning *their own* underlying assumptions and values.

The quantity and variety of reflection found in the discussion forums of the online HIV/AIDS education courses was surprising. Typically critical reflection is described as an uncommon and precious aspect of adult learning. Yet online discussion has already been widely reported in the literature to be more deliberate than spoken discourse. Participants of online conversations are able to outline, edit and reread their comments before posting them. As a result their comments are more mindful and carefully constructed than spoken words tend to be.

Another feature of online discussion that lends itself to critical refection is the tendency to summarize the comments of others and the previous conversations. This is prompted by the very nature of asynchronous conversation. The sense of needing to mark one's place by summarizing what has come before creates a continual reiteration and reframing of ideas that is often absent from spoken conversation. The ability to have others summarize and build upon a statement as well as the ability to revise statements that are misunderstood helps participants better understand and convey their own meanings. This continual reshaping of ideas in an attempt to understand and be understood is at the heart of the critical reflection in online learning.

The time and space inherent in asynchronous conversation is also crucial to the development of critical reflection. Participants' questions about their classmates' meaning, which was seen so often in online conversations, is softened by the nature of asynchronous discussion. Rather than feeling 'put on the spot' to frame an immediate response when an idea or belief is challenged, participants can take as much time as they would like to rethink, reexamine and reframe the issue. The space between the experience of a problem and the search for a solution that Mezirow insisted was necessary for critical reflection,[13] is an intrinsic feature of online conversation.

Missed Opportunities

The fact that the online discussion does provide more room and opportunities for reflection than most face to face conversations does not mean that critical reflection is an automatic feature of online conversation. Although most participants demonstrated critical reflection at some point during the semester, some participants never demonstrated critical reflection. Other participants engaged in reflection once or twice and then not again. Often when participants were challenged about their ideas, opinions or statements, they failed to frame a reflective response. Although specific features of asynchronous discussion facilitate critical reflection among participants, it is still not something that comes easily or automatically.

Participants are more comfortable reflecting on what they know and how they came to that knowledge than they are in questioning the validity of *their own* ideas and assumptions. In summary, that reflection which is most needed to help address issues of bias and marginalization surrounding HIV/AIDS is also that which is most rarely seen in the discussion forums. Critical reflection *does* happen within the discussion forums of the asynchronous AIDS education courses, but it is not something that can be taken for granted. It needs to be carefully nurtured and studied further.

Suggestions for Practice

The overarching recommendation to be drawn from this research is that critical reflection should be explicitly encouraged within the discussion forums of asynchronous HIV/AIDS education and training courses. Now that it is clear that critical reflection does happen within this medium, specific steps should be taken to support and direct the reflective process. The first and most obvious step is to specifically *ask* students to reflect on their experiences, beliefs and practices. This has long been recommended by those seeking to address issues of bias and increase cultural competency among health educators and providers, but has not yet become universal or even common practice in pre- and in-service trainings.[35] Other less obvious guidelines for promoting reflective thinking in online courses follow:

- *Instructors should encourage process reflection and the attachment of multiple meanings to a set of experiences*. Instructors or course facilitators should encourage participants to draw parallels to their personal experiences, and the lessons that they have gleaned from them, and the topic matter.
- *Instructors should challenge participants to reflect on the origin of their own beliefs*. Students should be encouraged to recount the cognitive or experiential processes through which they came to hold a specific belief.
- *Instructors should prompt participants to think critically about the readings and other course materials.* Since HIV/AIDS educators and providers are constantly deluged with new information about policy and practice, it is especially important that facilitators use the discussion forum to create opportunities for participants to reflect on *how and when* they incorporate new information.
- *Instructors should model premise reflection, especially about difficult issues.* Most often participants engaged in premise reflection as a way of questioning the broader practices of HIV/AIDS education and outreach rather than as a tool for examining *their own*

> underlying assumptions and beliefs about the nature of their work. Although careful examination of the underpinnings of HIV/AIDS care provision is a necessary step in addressing bias and disparities, it is not sufficient. Participants need to be encouraged to critically reflect about their *own* orientation to key issues.

In its third decade, the role of HIV/AIDS educators and providers has become more challenging; they face a much harder task than mere knowledge transfer. While it is disingenuous to frame risk behaviors solely in terms of knowledge, it is easy to think that if only we could get our audiences to recognize the danger of HIV/AIDS, they would surely change. When they do not, it becomes increasingly tempting to blame them for their own 'irresponsible' behavior.

Until we are able to reflect upon the divergence between AIDS prevention messages and the lives of at-risk populations, the gap between knowledge and behavior will continue to widen. Online discussion forums can be used to facilitate critical reflection on the policies, practices and future directions of HIV/AIDS education and prevention.

Limitations

The first and most obvious limitation of this research is that only the written statements posted within the discussion forums of the courses were analyzed. It is possible that much more reflection took place as part of an internal dialogue, to which the class and the researcher were not privy. Difficulty in discussing and addressing issues of race, ethnicity, gender, sexual orientation and HIV status has been shown to impede the creation and provision of HIV/AIDS education and prevention programs.[10] It is possible that the complexity of addressing these issues prevented participants from sharing their thoughts in the online discussion forum. There is no way to know from this data if online conversations prompted private reflections which were not posted for others to see.

Another limitation of the study was not all participants in the discussion forum granted permission for their postings to be analyzed. As a result, postings had to be analyzed as separate statements rather than as part of a threaded conversation. For this reason it was difficult to draw conclusions about the ways in which the posting of reflective comments might influence other postings.

Finally, because the coding of reflective statements made within the discussion forums is necessarily subjective, another researcher might look at the same set of statements and draw different conclusions. Statements that one reader might code as being reflection about what a participant knows to be true (content reflection) might be seen by another as being more exactly about *how* the participant came to this belief (process reflection). For this reason, quantitative comparisons that X topic generated Y reflective responses are not necessarily helpful or valid. This study is not intended to produce hard data about the quantity or extent of reflective thinking with the forums of online courses. Instead the goal was to first determine, without equivocation, whether reflective thinking does happen within the online discussion forums. Secondly and, perhaps more significantly, this research is meant to serve as a blueprint for those educators who would like to cultivate the practice of reflective thinking among their own students through the use of online discussion.

Within any educational medium instructors must be the ones to determine whether learning objectives have been met. To the degree that educators can explicate what critical reflection *looks like* within the discussion forum, through the use of typical examples and the process through which instances of reflection develop, this practice can be replicated within other classes and in new educational settings. Extensive quotes and numerous examples from the discussion forum are used in order to provide detailed illumination and rich illustration of the ways that reflective thinking is manifested within the discussion forum, so that other instructors might better identify and advance the practice.

Suggestions for Future Research

Future research on asynchronous learning should continue the examination of the ways in which the medium can facilitate reflective thinking and, equally important, the impact that this thinking has on the practice of HIV/AIDS education and prevention. It is a tenet of critical reflection theory that a reflective examination of the validity one's beliefs and practices is integral in adult education and to the adoption or modification of ideas. However it cannot be assumed that reflective examination of the nature of one's beliefs and practices results within an online discussion forum necessarily results habitual reflection in one's professional life or the adoption of new beliefs or practices based upon that reflection.

Does the practice of critical reflection, once modeled and demonstrated with an HIV/AIDS training

program, promote continued reflection once the course has ended? Does this experience have a lasting impact on the ways in which participants integrate new information and practices? Does practice at critical reflection increase participants' ability and willingness to discuss and address issues of race, ethnicity, gender, sexual orientation and HIV status? These questions, which remain to be answered, should help guide the future directions of HIV/AIDS educator and provider training programs.

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Table 1: Reflection by Weekly Topic and Type

Week and Topic	Instances of Content Refection	Instances of Process Reflection	Instances of Premise Reflection
Week 1: Course introduction	1	5	0
Week 2: Natural History of HIV	13	12	4
Week 3: Epidemiology and Treatment of HIV	6	8	1
Week 4: STI Co-factors	14	2	0
Week 5: AIDS Education in the Schools	2	6	0
Week 6: HIV Partner Notification	2	5	6
Week 7: HIV Vaccine research	9	4	4
Week 8: Testing for HIV	19	5	8
Week 9: Women and HIV	10	4	4
Week 10: Men who have sex with Men	11	7	0
Week 11: Children and HIV	10	2	5
Week 12: HIV and Addiction	12	5	0
Week 13: Racial and Ethnic issues	8	6	3
Week 14: International Issues	6	4	0
Week 15: Course Summary	0	0	0
Totals	133	75	30