Sex Education: Sexuality, Society and Learning

Curricular decision-making among public sex educators

Melissa L. Carrion[a] & Robin E. Jensen[b]

[a] Brian Lamb School of Communication, Purdue University, West
Lafayette, IN, USA

[b] Department of Communication, University of Utah, Salt Lake
City, UT, USA
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Melissa L. Carrion[a]* and Robin E. Jensen[b]

aBrian Lamb School of Communication, Purdue University, West Lafayette, IN, USA; bDepartment of Communication, University of Utah, Salt Lake City, UT, USA

The content of sex education in government-funded schools in the USA varies dramatically and reflects its contested nature and goals. Drawing from 50 interviews with sex educators working in the public, government-funded school system in a Midwestern US state, this study explores the processes through which sex educators decide what and how to teach. Working from the theoretical framework of argument sphere theory, and, specifically, socio-scientific controversy, we find that sex educators often resolve the competing arguments they face through processes that we call deliberative conflation and deliberative co-optation. Deliberative conflation involves the use of criteria from one or more argumentative spheres to judge evidence appropriate to a different sphere. Deliberative co-optation involves the use of discourse practices from one sphere to make arguments actually grounded in another. Both of these processes enable the reconciliation of otherwise incommensurate arguments, but they do so in ways that foster unstable and ambiguous curricular decisions. Our findings provide guidance towards improving sex education and its attendant outcomes.

Keywords: decision-making; sex education; socio-scientific controversy; schools; USA

Many young people in the USA have an inadequate understanding of sexual health and risk prevention strategies (Kaiser Family Foundation 2003), even though more than 90% of 15–19 year olds receive school-based sex education (Landry et al. 2004). Correspondingly, the USA has one of the highest rates of teenage pregnancy and sexually transmitted infections (STIs) of all industrialised nations, and young adults make up over half of those newly infected with STIs (Guttmacher Institute 2009, 2011). This discrepancy between apparent access to instruction and poor health outcomes raises questions about how sex education can be improved to positively impact public sexual health.

Existing scholarship suggests that access to health education alone is not necessarily associated with positive health outcomes. The success of health education efforts has been shown to be impacted upon by a wide variety of factors that shape the communication that occurs therein, including the message source (e.g. Rittenour and Booth-Butterfield 2006), medium (e.g. Suggs 2006), its intensity (e.g. Morgan et al. 2010) and its framing (e.g. Kiene et al. 2005). Yet, despite the rich body of literature addressing the factors shaping sexual health messages, relatively little attention has been paid to the factors that shape health messengers. This study begins rectifying that gap in the literature by examining the decision-making processes through which sex educators vet competing arguments about curricular content and pedagogical methods.

*Corresponding author. Email: mcarrion@purdue.edu

Currently, decision-making about public sex education curricula is anything but standardised as it is subject to a process informed by myriad publics and competing arguments (Irvine 2002; Levine 2002). As Thomson (1994, 40) notes, sex education represents 'the political front line between the personal and the public'. As a result, the content of sex education in public schools varies widely, not only across communities but even across hallways. On the one hand, when sex educators put together their curricula they must account for scientific concerns related to professional, public health and technical standards. On the other hand, they must consider arguments based on ideological concerns, which are often related to broader issues of sexuality and morality. In addition, they need to make allowances for issues such as school and programme funding, federal and state regulations, and professional and job security. Thus, curricular decision-making about sex education requires that teachers reconcile multiple arguments amid competing standards for legitimacy. What makes for a compelling argument in one context may fail to persuade in another.

Sex education and socio-scientific controversy

In this respect, the complicated decision-making processes that sex educators negotiate to prepare their lessons can best be understood as occurring within the context of what Stewart called a 'socio-scientific controversy' (2009, 125). An outgrowth of argument sphere theory (Goodnight 1982), socio-scientific controversies represent those arguments that span the boundaries of technical, public and personal considerations. While argument sphere theory suggests that each sphere dictates unique standards for what passes as legitimate evidence, socio-scientific controversies involve debates in which scientific or technical considerations are shaped by public and private concerns. Theorising sex education as a socio-scientific controversy creates a foundation for tracing sex educators' decision-making processes and considering the potential implications of those processes as they relate to curriculum. Such investigation reveals how the communication in which educators are engaged – often outside of the classroom – shapes the content of messages students receive inside the classroom.

Drawing from 50 interviews with sex educators working within public, government-funded schools in a Midwestern US state, we explore the argumentative patterns educators use to make sense of and ultimately reach decisions regarding what and how to teach. We identify two such argumentative patterns characterised by deliberative conflation and deliberative co-optation, and consider their likely outcomes in terms of curricular implementation. In the following analysis, we offer a brief overview of socio-scientific controversy and engage in a traditional argument sphere theory analysis of our data. Then, we explicate the patterns of deliberative conflation and deliberative co-optation as they occur in the context of sex educators' decision-making processes. Finally, we consider the potential implications of our findings for sex education curricula and the effectiveness of public school sex education programmes.

The emergence of socio-scientific controversy

Argument sphere theory (Goodnight 1982) suggests that all decision-making occurs in one of three argumentative spheres – the technical, public or personal – with the boundaries of each distinguished primarily by the types of warrants required for successful participation. Decisions made by drawing from the technical sphere of argumentation – the forum for scientific and other professional or specialised arguments – focus on questions of fact and

require formal, clearly defined evidence. This includes reliable data, determined in large part by the authority and expertise of the speaker. Decisions made by drawing from the public sphere of argumentation, by contrast, engage considerations related to broader policies and values. Standards for arguments in the public sphere are less demanding than those in the technical sphere and, above all, must be presented as related to the concerns of the general public or community (Goodnight 1982). Finally, decisions made by drawing from the personal sphere of argumentation require only brief and improvised arguments with little need for formal evidence beyond individual emotion or experience.

Yet, because a wide range of decision-making situations have been shown to challenge the mutual exclusivity of these argumentative spheres (Boyd 2002; Farrell and Goodnight 1981; Goodnight 1997; Olson and Goodnight 1994), Stewart proposed the term 'socio-scientific controversy' to describe those situations in which all three spheres of argument overlap in decision-making contexts (2009, 124). He described socio-scientific controversies as, 'extended argumentative engagements over socially significant issues and comprising communicative events and practices in and from both scientific and non-scientific spheres' (125). Such debate involves expert and lay participants, competing claims about knowledge and 'tensions between public and scientific reasoning and concerns' (Stewart 2009, 124).

Research in science education has explored these controversies as a context for promoting and evaluating scientific literacy (Grooms, Sampson, and Golden 2014; Zeidler and Nichols 2009; Zeidler et al. 2002). However, despite the prevalence of such debates (of which arguments concerning public sex education curricula offer a vivid example), scholars have yet to delineate the specific patterns of reasoning that individuals use to justify decisions in the context of a socio-scientific controversy. Through an examination of sex educators' accounts of their curricular decision-making processes, the present analysis works to address this gap in the literature. We argue that identifying and analysing the ways that decisions are made in this context provide an opportunity to reveal some of the underlying reasons why contemporary sex education curricula do not seem to correlate with the achievement of positive sexual health outcomes.

Methods

Recruitment

Email and mailing addresses were collected from the state Department of Education (DOE) website for teachers working in public, government-funded schools, and who were designated as health or sex educators at the middle or high school level. These individuals were contacted via either email or, for those without a listed email address, formal letter and asked whether they would be interested in participating in the study. Emails and letters included a description of the study and a list of interview questions. A total of 400 teachers representing approximately half of the 670 schools on the DOE website were contacted, 363 by email and 37 by letter. Those willing to participate were invited to contact the researchers by email or telephone to set up an interview time. Recruitment was ongoing and aimed for maximum variation according to participants' sex, age, race, educational background and professional history. After approaching a maximum variation sample (Lindlof and Taylor 2002) at 50 interviews (representing 47 recruitment emails and 3 letters), recruitment was discontinued. All participants were provided with a US$20 gift certificate, which was mailed to them following the completion of their interview. The research protocol was approved by the Institutional Review Board at the researchers' university.

Participants

Participants ranged in age from 23 to 65 years ($M = 40.68$, SD $= 12.38$), and included 13 participants who identified as male and 37 who identified as female. A total of 27 participants were employed in junior high schools, 22 were employed in high schools and 1 participant was employed in a school serving both junior high and high school populations. All participants identified as white or Caucasian; given that 95% of public school teachers employed in the state during the 2008–2009 school year were Caucasian (K. Lane, personal correspondence, 28 April 2009), this sample was deemed reasonably representative. A total of 30 participants had gone beyond the requisite bachelor's degree to earn a master's degree. Only 19 participants reported receiving any undergraduate training specific to teaching sex education, and such training ranged from one to four classes that specifically addressed the instruction of sex education.

Data collection

Data for this project were collected using semi-structured telephone interviews. Telephone interviews allowed the researchers to accommodate participants' need for adaptable and convenient scheduling. The semi-structured format of the interviews provided researchers with the flexibility to alter questions and incorporate new ideas according to the unique nature of each participant's experiences, while also maintaining a level of structural similarity (Corbin and Strauss 2008). All the interviews were conducted by one of the study's researchers, commencing with oral recognition of informed consent. Then, participants were asked for demographic information (i.e. age, gender, race). They were then asked a series of open-ended questions about their experiences in teaching sex education. In particular, participants were asked to describe the sex education curriculum they used and whether they had ever received formal messages about what they should or should not be teaching. In all cases, participants were asked to elaborate on how they determined what information to include in their curriculum. Interviews ranged in length from 20 to 80 minutes ($M = 40.94$, SD $= 10.14$). All interviews were audio-taped and transcribed, and pseudonyms were assigned and used during transcription and analysis. All participants were given the opportunity to contact the researchers to review the study's findings.

Data analysis

The researchers wrote field notes during and following each interview, noting emerging and potential themes and theoretical constructs (Lincoln and Guba 1985). Transcripts were read in their entirety, and analysis was guided by constant-comparative techniques (Corbin and Strauss 2008). The researchers engaged in open coding and arrived inductively at questions regarding arguments involved in curricular decision-making. Subsequent rounds of coding involved the identification of specific instances in which educators described arguments – either received from others or self-generated – regarding why they chose to teach certain curricula. These specific arguments about curricular decision-making yielded multiple categories which suggested the application of sphere theory (Goodnight 1982), and additional rounds of coding were conducted in order to attempt classification of arguments into the technical, personal and public argumentative spheres.

Arguments were classified as technical if they dealt exclusively with claims based on expert knowledge specific to the technical subject (sexual health), or profession (education). Included in this category were arguments about pedagogical best practices and delineations of scientific fact and content. Arguments invoking epidemiological or

statistical data were also coded as representative of the technical sphere. Public arguments were identified as those that invoked consideration of community standards such as participants' felt sense of community norms and expectations. These arguments most often drew from participants' public experiences as residents in a school's community and/or their recollections of public responses to a previous incident or school policy. Personal arguments were identified as those that relied exclusively on individual-level or anecdotal experience. These arguments included participants' recollections of their own romantic relationships or experiences parenting, as well as their application of individual moral values and beliefs in the classroom.

Although segments of our data were adequately accounted for through classification within one of the three argumentative spheres, the initial coding schema proved insufficient for large portions of the interview transcripts. Thus, final rounds of coding identified and delineated these complex arguments through the lens of a socio-scientific controversy in which more than one argumentative sphere was enlisted in the service of curricular decision-making (Stewart 2009). The following analysis demonstrates how sex educators in our sample described making decisions about classroom content and pedagogical methods.

Results

Traditional sphere theory analysis

A minority of interviews in our sample contained arguments that seemed to adhere to the standards of traditional sphere theory in that they reasoned using one and only one sphere of argumentation (Goodnight 1982). Teachers espousing these arguments differentiated among claims related to the technical demands of their jobs, those originating in the community and those grounded in their personal experiences. We find that these distinctions represent the participants' implicit affirmation of the precedence of a particular sphere's expectations. Decisions resulting from arguments within this category were generally clear and unambiguous. Counter-arguments, when acknowledged, were openly dismissed by participants as not meeting the standards for judgement within the dominate sphere of argumentation.

In some cases, sex educators privileged the technical sphere and associated educational experts or specialists. For example, Stuart, a 52-year-old middle school health teacher, discussed the difficulties of developing a curriculum that adhered to both state guidelines and 'local norms', but he ultimately deferred to the technical sphere when he asserted:

> We keep it very clinical [in the sex education classroom]; I use the term clinical a lot saying we're not gonna get into religion, this is just the biology of what happens and we try to avoid a lot of issues that we don't need to deal with.

For Stuart, a 'clinical' approach with a focus on 'the biology of what happens' restricted the content of his curriculum to that which could be delineated by those with technical expertise in biological reproduction. As Goodnight explained, 'identification with [a person's] work in a special occupation' is integral to technical argument (1982, 217). In this respect, Stuart's argument served to validate the technical community of which he deemed himself a part while purposefully excluding public or personal sphere concerns. Likewise, his explicit reference to (and subsequent dismissal of) religion indicated that his privileging of the technical sphere was a conscious choice, and one that explicitly guided his decision-making process.

By contrast, other participants justified their curricular decision-making within the parameters of the public sphere. For the sex educators in this sample, this was most often reflected in discussions about the influence of abstract community standards on curricular choices. Discussing her lack of explicit training in teaching sex education, Liz, a 48-year-old high school health teacher, explained how she determined what information to include in the curriculum: 'You have to go by your community . . . I mean, if it were up to me, I would teach them how to use a condom properly, but our community wouldn't accept that'. Liz acknowledged that arguments based on her own personal preferences or beliefs conflicted with arguments originating in the public sphere of her community, and she rejected the former in favour of the latter. In addition, Liz saw knowledge of the community via the public sphere as an appropriate substitute for explicit instructions in the technical sphere. This was also illustrated in an assertion by Glenda, a 52-year-old high school health teacher, who explained, 'No one has explicitly said that [the curriculum should be abstinence-only] to me, but I am from this community. I was born and raised here'. Glenda based her argument for teaching an abstinence-only curriculum – as opposed to an abstinence-plus or a comprehensive curriculum – on a shared sense of community values.

Finally, a few sex educators in the sample employed arguments that seemed to fit clearly into the confines of the private sphere. In this context, educators sometimes recalled discussing their own past experiences related to sexual behaviour and how that personal experience influenced what they believed ought to be taught to students. For instance, Mike, a 36-year-old high school health teacher, talked about how he repeatedly drew from his own experience remaining abstinent until marriage to justify the importance and viability of emphasising abstinence in the sex education curriculum. He explained:

> And again, a lot of this is lecture through my own experiences and fortunately I was able to make good decisions growing up and stay abstinent. And even having dated kind of my high school sweetheart for six years, ended up getting married and we were abstinent the whole time and I give them background on that.

In this context, Mike's efforts to identify with his students are reflected in his justification for a specific sex education curriculum and are borne out in his classroom conversations with students. As Kehily (2002, 215) has observed, some sex educators draw from their own 'sexual biographies' to shape their pedagogic practice. In these cases, personal experiences can function as the justification for beliefs about what should be taught in the sex education classroom and serve to discount other competing technical and public arguments.

Socio-scientific controversy analysis

With the above-mentioned exceptions, the process of decision-making recounted by many educators in our sample did not draw solely from justifications homed in a single sphere. Indeed, almost every sex educator in our sample communicated arguments that spanned more than one sphere. These arguments required that educators adopt decision-making practices that could justify multiple forms of reasoning. On the whole, such processes took two different forms, those of deliberative conflation and deliberative co-optation.

Deliberative conflation

The first form of socio-scientific decision-making that emerged from our interviews relied on what we term deliberative conflation. This refers to instances in which individuals

justified their decisions by using the criteria from one or more argument spheres to judge evidence appropriate to a different sphere. Although instances of deliberative conflation did ultimately result in the making of curricular decisions, the selection criteria were often vague and ill-defined. Likewise, participants' explanations suggested that even a minor change in encountered arguments could prompt an entirely different curricular choice.

This deliberative conflation occurred in one of two subtly distinct ways. First, in some cases, participants combined evidence appropriate to multiple spheres within a single argument. For instance, Marisa, a 41-year-old high school health teacher, explained that she determined what was appropriate to teach by considering, 'my own morals and values and then talking to parents and talking to kids and living in a real world'. The invocation of her 'own morals and values' is based upon a personal argument, while her discussion with parents and students suggests a commitment to a broader public sphere. The final influencing factor, her experience 'in a real world', indicates that she was further assessing the needs and realities of her community in a move indicative of public sphere argumentation. The statement as a whole, however, implies that she considered all of these arguments simultaneously, and Marisa's conclusions result from understanding one sphere in reference to the others.

Statements by Gladys, a 65-year-old middle school health teacher, also illustrated her attempts to meld competing argument spheres. In teaching the sex education curriculum, Gladys had been told to 'stick to the book' and avoid 'anything controversial'. She recalled the trouble she faced when she failed to adhere to this guidance and chose to address a student's question regarding homosexuality. She explained, 'Sexual education is a HUGE thing here in [my town]. Highly religious, Bible-belt conservative type. So that ground, I think that's very important because it's driven the programme you know. It's driven our [school] board, it's driven where it is today'. Gladys grounded her discussion of curricular decisions in the context of public discourse about sex education, represented by the community and board. Then, in the process of explaining why she felt it was important to teach sex education, she appealed to both public *and* personal arguments. She stated:

> I don't think [my town] wants to touch this with a 10-foot pole. It's just like everything. Drugs too, just say no. We're DARE [Drug Abuse Resistance Education programme]. It's the same concept, just say no. This is sexual education. I believe that [my town] feels it's the right of a parent. I think that too! I wish all parents would do it. Do your jobs, that'd be awesome. But they're not going to, realistically. It's just like my own kids, [interviewer's name]. I want to talk to my son right now, are you wearing a condom? My son doesn't want to talk to me about that. Not at all … I feel it's the same philosophy.

Ultimately, Gladys explains that she made choices about content and pedagogical method based upon a public discourse that she interpreted through her personal experience, a process that left her with conflicting and even convoluted decision-making criteria.

A second and slightly different form of deliberative conflation occurred when sex educators faced individual messages that, alone, conformed to the standards of traditional sphere theory. However, educators explained that they often received several of these messages, each seeming to appeal to a different sphere and eventually culminating in an amalgamation of messages which pitted arguments in one sphere against those in the others. Sarah, a 34-year-old middle school health teacher, provided an example of this type of deliberative conflation in her discussion of the creation of and proposed changes to her current curriculum:

> Actually it's kind of the [school] corporation's curriculum. Kind of what we were told, because we really aren't happy with it because our school district, we have quite a high rate of teenage pregnancy. And we really think we did propose that we start teaching birth control.

> But the school board and our corporation, they vetoed it because too many parents complained that it should come from home.

Sarah began her statement by discussing a technical argument, based upon professional guidelines, and employed a second technical (though conflicting) argument, invoking pregnancy rates among the students in her district. These arguments, however, were framed within the school board's broader public discourse that, in turn, determined the final decision via consideration of parents' personal arguments, of which there are many (Goldman 2008). The curriculum that was unfolding from this decision-making pattern seemed poised neither to effect the changes for which Sarah and her fellow teachers advocated nor to ascribe to the principles of the school corporation.

Deliberative co-optation

The second form of socio-scientific decision-making in our sample is what we call deliberative co-optation, which involves the melding of argumentative spheres in a structural manner where the framework of one sphere is utilised to make arguments that are actually grounded in another. This is what Stewart (2009, 126) referred to as the blending of 'orders of discourse'. The discourse practices from one sphere are privileged, although the content and criteria for arguments still draw from multiple spheres.

For example, in some cases educators invoked their professional (technical) role to make what were essentially public or personal arguments. Sabrina, a 25-year-old middle school health teacher, illustrated this melding when she discussed her decision-making process given a lack of explicit guidelines about appropriate curricular boundaries:

> I just do it on a personal basis. Like what I think is appropriate for their age. I believe that some of the kids are sexually active, and I think that they should know about protection ... So I kind of know my classes too, you know, what I should and shouldn't say. The classes that are a little more immature, I try to step back a little. And the ones that I think that really need to know the education just by seeing them, I might take it a step further.

Sabrina insinuated that her role as a teacher provided her with certain technical insight into the needs of her students. Indeed, discussions of developmental appropriateness constitute a technical argument. However, Sabrina's determination of her students' needs was actually based upon her beliefs and 'just by seeing them'. This is evidence appropriate to the personal rather than technical sphere. Her statement also implies that there are other lenses through which she makes sense of her students' experiences, including her own personal experiences. Her interpretation of this personal experience is also likely shaped by public arguments that influence, implicitly, 'what [she] should and shouldn't say'. In this context, however, her personal experiences are granted the weight of professional judgement, and the outcome of her decision-making is likely to reflect the lack of consistency in this reasoning.

Other instances saw teachers present argumentation grounded in the public sphere in order to convey primarily personal arguments. For instance, Jen, a 27-year-old high school health and science teacher, explained her decision to present comprehensive sexual health information despite her school's abstinence-only policy by citing a duty to her students:

> Where our school stands on how you go about teaching [sex education] is abstinence only. That's all that they really want us to tell our students but I feel that if they ask the question, I feel that I have the obligation to tell them, at least give them the knowledge or where they can go to find the correct answer.

Her rationale is based on a dedication to upholding what she saw as the public good via the fulfilment of a commitment to her students. In particular, Jen noted that the majority of her

students were sexually active, and she cited her sense of frustration in being asked to present a curriculum that she felt clearly did not respond to the realities and needs of the community.

However, although Jen clearly situated her overt arguments within the public sphere, other comments suggested that it was actually personal arguments that shaped her reasoning. In particular, in describing her motives for becoming a sex educator, Jen discussed her own recollections of high school and the role of sex education:

> [Sex education] dictated a lot of where people went in life. I hate to say it, but it really did. I look back on it and the girls and boys both that were being very promiscuous. I look at them now and some of them dropped out of high school, they were with children already, it was just, people who I think really took the whole sex ed to heart – I consider them to be as more social status or more successful in life.

Despite justifying her curricular choices by citing her community's needs, Jen's extended comments reveal that her understanding is derived largely from personal experiences and calculation of what it means to be 'successful in life'. As with many of the educators in the sample, Jen used the language of the public sphere to forward a pedagogical choice based largely in her personal values. Although Jen's experiences led her to abandon an abstinence-only curriculum, other educators used their personal experiences – couched within the language of the public sphere – to justify the opposite choice. Again, while reasoning in this way ultimately results in the establishment of curricular decisions, the variability in decision-making criteria points to the unstable and subjective nature of decisions that couch personal sphere arguments in the language of public sphere interests.

Finally, interviewees also invoked argumentation grounded in the personal sphere to justify essentially public and technical arguments, particularly when teachers defended their curricular choices by referencing their personal concerns about the negative consequences of choosing to teach something else. Greg, a 30-year-old junior high school health teacher, expressed these concerns when he stated:

> Oh I think most teachers would say that they, in the back of their mind they might be afraid of saying something wrong with it. Maybe they, oh, you know, gee I hope I don't get any calls from a parent or school board member if I talk about this or you know.

This argument is personal insomuch as it emphasises 'private needs' rather than the 'interests of the entire community' (Goodnight 1982, 220). Yet, Greg's concern with the threat of reprisal from parents or the school board is indicative of the ways that public arguments are implicitly situated in his decision-making, and the pressure of the school board is especially intimidating given its conflation of public and technical authority. In these instances, the interests of students as stakeholders were positioned as secondary to personal concerns, and personal concerns were themselves the product of public arguments that co-opted those of the technical sphere. From this perspective, one could almost anticipate that the curriculum emerging from this pattern of decision-making would likely be as unclear as it was riddled with a tone of ambiguity and fear.

Discussion

Building from the tenets of argument sphere theory, this study explored the patterns of decision-making that sex educators draw from to determine what and how to teach. We found that, although there were some cases in which sex educators seemed to draw from only one sphere of argumentation to make their curricular decisions, more often sex educators seemed to be influenced by competing arguments emerging from different

spheres of reasoning. Some of these arguments emerged from the personal sphere and were based on individual-level concerns and emotions. Others were shaped by the contours of the public sphere and addressed the social role and goals of sex education more broadly. Still others were dictated by the norms of the technical sphere, and focused on questions of scientific and pedagogical fact. Stewart's (2009) theory of socio-scientific controversy was crucial for adequately theorising this process in a number of cases, as most arguments recalled by educators combined and spanned arguments from more than one sphere of discourse. Thus, the results of our analysis demonstrate that decision-making related to sex education curricula often draws simultaneously from moral, social and scientific argumentative justifications. To conceptualise curricular decision-making as a process that takes only one of these spheres of argument into account (for instance, only school district mandates or only community standards) would be to negate the intense argumentative conflict that many educators seem to negotiate as they prepare to teach sex education.

Our results also suggest specific patterns of decision-making that emerge at these sites of argumentative contestation. In particular, when sex educators explained their curricular decisions in light of the competing demands of the socio-scientific controversy, we found that they tended to justify their decision-making via processes of deliberative conflation or deliberative co-optation. These processes enabled educators to reconcile otherwise incommensurate arguments, albeit in potentially problematic ways. Processes of deliberative conflation were arbitrated by shifting criteria that were determined by the context of the arguments themselves. Decisions emerging from this process were always contingent and, as such, resulted in tenuous curricular choices. For instance, an educator might build an initial curriculum by drawing from arguments about personal beliefs concerning sex before, then, alternately overturning those beliefs – and thus the curriculum in process – in the context of a school board meeting. While the flexibility of sex educators' methods or curriculum is hardly a negative attribute, an educator's inability to offer a consistent, coherent lesson plan may ultimately do more to confuse students than to educate them. Processes of deliberative co-optation, by contrast, relied upon criteria for one sphere to judge arguments emerging from other spheres. Decisions resulting from this process demonstrated a muddled application of criteria for judgement and seemed to result in unpredictable and even unreasonable curricular choices. For instance, a teacher who draws from technical reasoning about best pedagogical practices to evaluate public concerns specific to a community is likely to overlook or deem unimportant the specific needs of the community. These cases demonstrate how a better understanding of decision-making processes illuminates how specific decision-making patterns can influence the quality and content of public sex education courses.

Correspondingly, an understanding of sex education through the framework of socio-scientific controversy and its associated decision-making challenges helps to clarify why such wide variation exists in terms of the quality of sexual health curricula and its attendant outcomes. The promise of public sex education lies in its potential to positively impact sexual health, yet high rates of unplanned pregnancy and STIs – especially among young adults – suggest that this potential has yet to be reached. To this end, efforts to improve sexual health education and promotion have included research on what should be covered (e.g. Kirby 2002; Noar et al. 2006), what is actually being taught (e.g. Santelli et al. 2006) and how different sexual health programmes impact measurable health-related outcomes (e.g. Kirby, Laris, and Rolleri 2007; Mueller, Gavin, and Kulkarni 2008; Pinkleton et al. 2008). However, in order to effect changes informed by this research, scholars and practitioners must also acknowledge how and why such information is mediated through argumentation. That is, even if research yields recommendations for

definitive best practices, the results of the present study suggest that such recommendations are made sense of and acted upon by teachers through a complex – yet perhaps somewhat predictable – system of justification and decision-making.

Indeed, given the processes of deliberative conflation and deliberative co-optation that characterise the decision-making process for sex educators in our sample, it is no surprise that students are rarely getting standardised information. In particular, unconscious employment of these processes may create a gap between educators' intentions (i.e. to provide a scientific argument) and what students actually receive (i.e. a personal argument shaped by the claims of the technical sphere). Similarly, the decisions that emerge from these processes may be seen by educators and students alike as ambiguous, inconsistent and/or incoherent. For instance, the priorities of a technical sphere discourse of prevention (i.e. testing for STIs, promotion of prophylactic and contraceptive use) may conflict with policy- or morality-based arguments emerging from the public or personal spheres.

The ability to recognise and moderate instances of deliberative conflation and co-optation would, no doubt, be a highly useful skill for sex educators as they make decisions about curricula. In this respect, the present research provides support for the argument that the evaluation of arguments and criteria-driven decision-making skills need to become an indispensable component of sex education training. Continued research about curricular decision-making and the experiences of sex educators as arbiters of sexual health information will shed increasingly focused light on the variables that support effective sex education programmes in US public schools.

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