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Educating Students about AIDS through Art:
A Quasi-Experimental Evaluation in Newark Public High Schools

by

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Abstract

This dissertation evaluates the effects and implementation of an education program aimed at increasing knowledge and changing attitudes about HIV and AIDS among high school students. Using a quasi-experimental pretest posttest design and process and outcome evaluation, the research was conducted in four Newark, New Jersey public high schools. Students in the intervention group attended an art exhibit related to AIDS consisting of the AIDS Museum's collection, participated in a discussion with an artist living with HIV, and created their own art projects about HIV. Students in the comparison group participated in the standard of care, consisting of the usual HIV education provided through health classes.

Quantitative questionnaires from 325 students and qualitative individual interviews with 15 students were conducted in order to evaluate the impact of the program on students' knowledge and attitudes about AIDS. The quantitative findings indicated that increases in student knowledge were associated with participating in the AIDS Museum program, but changes in attitudes were not significantly related to the intervention. The interviews revealed that after the program, students felt more empathetic toward people with HIV and learned they could overcome challenges in their lives.

The second phase of the study examined factors that facilitated and impeded the implementation of this intervention and other HIV education programs in the Newark Public Schools through participant observation, individual interviews with seven school- and district-level administrators, and two focus group interviews with health teachers. Findings indicated that, at the city-level, economic, political, policy, and social issues

influenced implementation, especially in the climate of an economic recession. At the school-level, organizational factors as well as the individual behaviors of employees affected program implementation and quality. School leaders, particularly health education department chairs, were influential in determining whether their school participated in the study. Teachers' cooperation was important for program implementation. The program was particularly challenging to implement in schools with less structured environments in which students experienced more social and behavioral problems. A combined top-down and bottom-up approach to implementation and a rational/technocratic and political/cultural framework help explain facilitators and barriers to implementation of HIV education programs in this context.

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Educating Students about AIDS through Art:

A Quasi-Experimental Evaluation in Newark Public High Schools

Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency

Syndrome (AIDS) are critical public health challenges in the United States (U.S.). Over one million people are living with HIV in the U.S., and about 56,000 new infections occur each year (Campsmith, Rhodes, Hall, & Green, 2009; CDC, 2008a). More than 18,000 people with AIDS die each year, and through 2007, more than 576,000 people with AIDS in the U.S. had died since the onset of the epidemic (Centers for Disease Control and Prevention [CDC], 2010b). Public schools are well-positioned to educate large numbers of young people about reducing the risk of HIV infection, many of whom engage in behaviors that place them at risk (Bloustein Center for Survey Research & NJ Department of Education, 2010). Studies have found school-based HIV education programs do not increase sexual behavior, and there is evidence to support the effectiveness of school-based programs in reducing sexual activity and increasing condom use (Kirby, 2002). Surveys have also shown that students who have not had sex education in school scored lower on questions about HIV and related issues than students who have had sex education (Kaiser Family Foundation, 2000a). A promising approach for HIV education incorporates the arts as a pedagogical tool (McDonald, Antunez, & Gottemoeller, 1999; Glik, Nowak, Valente, Sapsis, & Martin, 2002; National Youth Education Program, n.d.). The aims of this dissertation are to evaluate a particular arts-based HIV education program offered by the AIDS Museum, a nonprofit organization, in four public high schools in Newark, New Jersey, and to study factors that facilitate and impede the implementation of HIV education activities in this context. The AIDS

Museum intervention is both affective and cognitive, designed to influence knowledge, attitudes and feelings about HIV.

In the evaluation literature, a distinction is made between process and outcome evaluation. Process evaluation guides program improvement, whereas outcome evaluation indicates whether program objectives were met (Rossi, Lipsey, & Freeman, 2004).

In the current study, process evaluation provided guidance for program implementation and expansion. Participant observation was selected as the method to evaluate the conditions that promoted or impeded the introduction of the intervention into the school system. Additionally, focus groups were conducted with teachers. Staff and administrators were interviewed individually.

The outcome evaluation answered questions about the effect of the AIDS Museum intervention on two student outcomes: knowledge and attitudes. A quasi-experimental design and mixed methods were employed. Data were collected from students through self-administered surveys and individual interviews to evaluate the short-term effects of the intervention on knowledge and attitudes. To preview the findings, the analyses suggest that participating in the AIDS Museum program was positively associated with student knowledge about HIV and AIDS, but unrelated to student attitudes.

Chapter 1: Context and Theory

This chapter explains the argument for evidence-based policy making and evidence-based social programs, the problem of HIV, the relationships between knowledge, attitudes, and behaviors related to HIV, the importance of prevention education, and how schools deliver HIV education. Then, the arts as a medium for HIV education and a specific arts education intervention offered by the AIDS Museum are discussed. The chapter then reviews research about policy implementation relevant to the process evaluation component of this study. Based on the literature and theoretical perspectives described, the concluding section lays out the research questions guiding this dissertation study.

Evidence-based policy making

This section discusses the advantages of evidence-based policy making, its increasing use in government and management, some critiques and variations, and its application to HIV prevention specifically. Evidence-based social programs are part of the “experimenting society” envisioned by Donald T. Campbell (1999). The concept involves applying social science research to critically assess and test knowledge claims and control for extraneous variables. In evidence-based policy making, facts are separated from advocacy (Gueron, 2002).

Making decisions based on rigorous evaluation methods may increase the likelihood of eliminating obsolete policies (Dunn, 1998). Another purpose of evidence-based policy making is to help government identify and replicate successful programs in contexts where they are likely to be effective (Crane, 1998). Existing services and

organizational capacity may be improved through evidence-based decisions (Wholey, Hatry, & Newcomer, 2004).

Evidence-based policies may offer advantages to those based on conventional wisdom (Ellwood, 2003), ease of implementation (Herk, 2009), polling constituents, expert or user opinions, “policy-based evidence” (cherry-picking data to support a preferred course of action) or punditry. Pawson (2006) argues a more comprehensive and objective approach is necessary to evaluate the sometimes unexpected effects of public policies. In the field of management, evidence-based decisions have been found to be more effective and profitable compared to those based on beliefs, opinions, or imitation of others without considering why particular practices might be effective. To be evidence-based, decisions should apply the scientific method and consider the logic of why policies work (Pfeffer & Sutton, 2006).

There have been many debates about evidence-based policy making. Methodologically, the tendency to privilege the randomized controlled trial (RCT) over other types of evidence by government agencies and clearinghouses of “what works” has been criticized (Donaldson, Christie, & Mark, 2009). Some have argued that while randomized experiments are the “gold standard” for evaluating what works, qualitative research also provides important data for public policy (Sadovnik, 2006). A broad view of evidence-based policy making incorporates mixed methods and both process and outcome evaluation (Sanderson, 2002).

In the field of HIV prevention, the movement for evidence-based policy making is ongoing. After the first decade of AIDS, there was an impetus to base interventions on evidence. The U.S. Public Health Service’s Panel on the Evaluation of AIDS

Interventions issued a report arguing that future prevention efforts should invest in evaluation to obtain evidence about how to induce behavior change to prevent the spread of HIV (Coyle, Boruch, & Turner, 1991). In the HIV prevention field, as with evidence-based policy making in general, the emphasis has been on experimental designs as the primary source of credible evidence. For instance, the Centers for Disease Control and Prevention (CDC) Diffusion of Effective Behavioral Interventions (DEBI) program endorses and funds science-based and evidence-based interventions. To become an official EBI, an intervention must have been tested by RCT with statistically significant findings in regards to behavioral outcomes, and led to two publications in peer-reviewed journals (Dworkin, Pinto, Hunter, Rapkin, & Remien, 2008). However, formative, descriptive research is also funded and conducted by the CDC's Division of HIV/AIDS Prevention (CDC, 2009).

Internationally, some of the HIV-specific objectives of the United Nations Educational, Scientific and Cultural Organization (UNESCO) are to:

Strengthen the evidence base and improve the policy and programmatic responses of Member States through the documentation and dissemination of good practices and support for their use and application; the monitoring and evaluation of progress, trends and impact; and advocacy and technical assistance for evidence-informed responses to HIV and AIDS” (Gordon, 2007).

This section has covered the arguments for evidence-based policy making as a basis for this study. The next section turns to the specific policy context of HIV prevention.

Outcome Evaluation

The Problem of HIV.

In the United States, Human Immunodeficiency Virus (HIV) and Acquired Immune Deficiency Syndrome (AIDS) continue to be important public health problems. Over one million people are living with HIV in the U.S., and about 56,000 new infections occur each year (Campsmith, Rhodes, Hall, & Green, 2009; CDC, 2008a). More than 18,000 people with AIDS continue to die each year in the U.S., and through 2007, more than 576,000 people with AIDS had died since the epidemic began in the U.S. (CDC, 2010b). HIV is transmitted through sexual intercourse, sharing needles for injecting drugs or other purposes, and may be passed from mother to child during pregnancy, childbirth, or breastfeeding (CDC, 2010a).

Some populations are disproportionately affected by HIV. Of the adults currently living with HIV in the U.S., over 65% are nonwhite. Although African Americans make up only 12% of the U.S. population, they account for 46% of HIV cases. The HIV prevalence rates for African Americans and Latinos are, respectively, 7.6 and 2.6 times the rate for whites. Just over 48% of HIV cases are in men who have sex with men (MSM). About 75% of HIV cases are among men, but African American women are also overrepresented (Campsmith, Rhodes, Hall, & Green, 2009; CDC, 2008a).

There are some ethnic and racial differences in risk factors for HIV infection among young people as well as adults. In New Jersey, according to the 2009 New Jersey Student Health Survey, about 53% of African American students reported they had ever engaged in sexual intercourse, compared with 58% of Latino students and 43% of white students. African American students and Latino students were also more likely to report

four or more sexual partners in their lifetime than white students (17.8, 17.4, and 9.7% respectively).

While African American and Latino students were more likely to have these risk factors for HIV infection, they were also more likely to get tested for HIV. While 16.2% of African American students and 14.3% of Latino students had been tested for HIV, only 9.4% of white students were ever tested (Bloustein Center for Survey Research & NJ Department of Education, 2010).

The City of Newark has a high rate of HIV infection and a high total number of AIDS cases. The number of living HIV cases as of December 2009 was 5,858, amounting to two percent of the city's population, or five times the national prevalence (New Jersey Department of Health and Senior Services, 2010). In metropolitan areas of 500,000 or more, Newark has ranked in the top ten cities in the nation in the number of newly reported AIDS cases per 100,000 residents (Kaiser Family Foundation, 2000b). In Newark, there were 13,838 cumulative HIV/AIDS cases as of December 2009. This was more than double the next highest number of cases in New Jersey in Jersey City: 6,607 (New Jersey Division of HIV/AIDS Services, 2010). The modes of transmission of HIV in Newark are relevant to the design and implementation of this intervention. According to the New Jersey Department of Health and Senior Services (2010), in the city of Newark, 47% of men were infected with HIV through injection drug use, 22% through heterosexual contact, and 16% through male-to-male sexual contact. For women, 49% of HIV infections were through heterosexual contact and 42% through injection drug use.

Among high school students in New Jersey, however, only about three percent reported ever using needles to inject drugs (Bloustein Center for Survey Research & NJ

Department of Education, 2010). Among sexual behaviors leading to higher risk for HIV infection (using drugs or alcohol prior to sex, having multiple sexual partners), not using a condom during their last sexual encounter was the most commonly reported among New Jersey high school students. About 35% of sexually active students reported not using a condom the last time they had sex, which is a total of 14% of all New Jersey high school students (Bloustein Center for Survey Research & NJ Department of Education, 2010).

HIV-Related Knowledge, Attitudes, and Behaviors.

Studies have shown mixed evidence about the relationships between knowledge, attitudes and behaviors generally and related to HIV specifically. In the field of public administration, Kelman (2005) found that attitudes toward change strongly predicted behavior, but other factors compete with attitudes to explain behaviors. Attitudes may influence behaviors only under certain conditions (Somlai, Kelly, Wagstaff, & Whitson, 1998). Small, Weinman, Buzi, & Smith (2009) found that attitudes about condom use among female adolescents of color significantly predicted behavioral intentions (but not necessarily behavior). However, some studies suggest there may be only small correlations between attitudes and behaviors (Liverpool, McGhee, Lollis, Beckford, & Levine, 2002).

In the study by Small, Weinman, Buzi, and Smith (2009), in contrast to the effect of attitudes, knowledge about HIV was a poor predictor of intention to use condoms among female adolescents of color. However, in an earlier study, based on data from the Secondary School Student Health Risk Survey, Anderson and colleagues (1990) found that students who were taught about HIV in school gave more correct answers to

questions about HIV than those who were not, and students with more knowledge about HIV were less likely to report having multiple partners and more likely to report consistent condom use. An analysis of the same 1990 survey found that knowledge about HIV was negatively associated with injection drug use (Holtzman et al., 1991). In another correlational study, Swenson and colleagues (2009) found that greater knowledge about sexually transmitted infections (STIs) was associated with greater likelihood of HIV testing, especially among girls, aged 13 to 18.

Some studies have found HIV-related interventions influence AIDS knowledge and attitudes, but not behaviors (e.g. Schumann, Nyamathi, & Stein, 2007). There are several possible explanations for these findings. One is that attitudes and knowledge are poor predictors of behaviors. Alternatively, changes in knowledge and attitudes may precede changes in behaviors, and the time frame for evaluations may not be sufficient to detect behavior changes.

Knowledge and attitudes may also predict other antecedents of behaviors. In a cross-sectional study of youth in Los Angeles, attitudes against sexual activities had direct impacts on risky sexual behaviors, and both attitudes and knowledge were associated with sexual refusal skills (Bazargan, Stein, Bazargan-Hejazi, & Hindman, 2010). Knaus, Pinkleton, and Austin (2000) found that visiting the AIDS Memorial quilt increased information-seeking about HIV among college students, which in turn predicted behavior change (condom use).

Knowledge and attitudes seem to be important but not sufficient conditions for changing behaviors. Research also shows that highly engaged participants in health campaigns tend to have more consistency among their knowledge, attitudes, and

behaviors (Chaffee & Roser, 1986). An approach focusing on engaging participants in information-seeking rather than strictly awareness or behavior change recognizes that participants move through an incremental decision process before changing behavior (Knaus, Pinkleton, & Austin, 2000).

School-Based HIV Education.

One way to address HIV transmission is through the educational system (Kelly, 2002). Schools are well-positioned to educate large numbers of young people, many of whom engage in behaviors that put them at risk for HIV infection (Bloustein Center for Survey Research & NJ Department of Education, 2010). Among young adults, 33% say most of the information they have about HIV/AIDS comes from school (Kaiser Family Foundation, 2009). Researchers have argued that HIV prevention programs tailored specifically for populations and contexts have the best chance of success (Baptiste et al., 2005). HIV education programs in the classroom that target motivation, information, and behavioral skills have been shown to be successful at changing behaviors of inner-city high school students of color (Fisher, Fisher, Bryan, & Misovich, 2002). But evaluations have shown some school-based programs to be effective while others have no impact on risk behaviors (Kirby, Laris, & Rolleri, 2005). High schools play an especially important role in HIV education in light of evidence that junior high programs aimed at reducing risk behaviors may have short-term but not lasting impacts (Trenholm, et al., 2007). Given the potential for educators in schools to provide opportunities for learning about HIV, it is helpful to understand the influences affecting the implementation of school-based HIV education policies and programs.

The State of New Jersey mandates school-based sex education and HIV education that is medically accurate, age appropriate, culturally appropriate, and unbiased. Parental notice is required, and parents can opt out (that is, refuse to allow their child to participate). In New Jersey, sex education must include information on contraception, stress abstinence, be inclusive of different sexual orientations, and include life skills for healthy decision making. In the State of New Jersey, HIV education must include information about condoms and stress abstinence (for a list of states and their HIV education policies, see Guttmacher Institute, 2011).

According to the Department of Teaching and Learning's Comprehensive Health Education Curriculum Guide (2004), the Newark Public Schools also have a district mandate for HIV education, and HIV is included in the curriculum for grades four, five, eight, nine, ten, and eleven. For twelfth graders, a related topic, sexual responsibility, must be covered. One component of curriculum standard 2.3 (Drugs and Medicines) is "By the end of grade 12, students will investigate the relationship between injected drug use and the incidence of diseases such as HIV and hepatitis" (page 209). According to standard 2.4 (Human Relationships and Sexuality), "By the end of grade 12, students will critique behaviors that place one at greater risk for HIV/AIDS, STDs, and unintended pregnancy" (page 211).

The Newark Public Schools had an enrollment of 15,342 students in grades 9 through 12 in 2008. According to the American Community Survey, about 91% of young people in grades 9 through 12 in Newark were enrolled in public high schools, and about 9% in private high schools. There is some variation in how well HIV education has been implemented in the Newark public high schools. For example, among schools

participating in the CDC School Health Profiles system survey (Brener et al., 2009), only 47.4% of schools in Newark taught eight key HIV, STI, or pregnancy prevention topics in a required course during grades 9, 10, 11 or 12, compared with a median of 81.7% in the 19 urban areas participating in the survey. On a more positive note, all high schools in Newark that responded to the survey offered courses that included information about HIV, other STIs, and pregnancy; the relationship between alcohol and other drug use and risk for HIV, other STIs, and pregnancy; and the benefits of being sexually abstinent (Brener et al., 2009).

Outside of required courses, students learn about HIV in schools through additional programs and workshops. For example, the New Jersey Teen Prevention Education Program (Teen PEP) is a sexual health promotion and peer education initiative for high school students. The Teen PEP program is available throughout the state and in eight high schools in Newark. Teen PEP peer educators take classes and present at least five workshops annually to ninth and tenth grade high school students about HIV/AIDS and other STIs and related issues (State of New Jersey Department of Health and Senior Services, 2008).

Arts-Based HIV Education.

Research suggests that nontraditional teaching tools can be effective in health education more broadly and HIV education specifically. This section explains how the arts can be incorporated in HIV education, both in and outside of schools. The arts offer promising and innovative tools for health education (McDonald, Antunez, & Gottemoeller, 1999). Nontraditional programs incorporating HIV-positive speakers (Paxton, 2002) have been found to improve young women's attitudes about HIV, and

those incorporating an interactive CD-ROM (Ito, Kalyanaraman, Ford, Brown, & Miller, 2008) have been found to improve young women's knowledge about HIV. Arts-based HIV education programs include folk media (Panford, Nyaney, Amoah, & Aidoo, 2001), performing arts (Glik, Nowak, Valente, Sapsis, & Martin, 2002), soap opera videos (Jones, 2008) and community art projects.

Drama, song, dance, beadwork, and poetry have been studied in HIV prevention interventions in South Africa; mixed methods evaluation studies have found the programs increase young people's understanding of HIV and reduce stigma toward people living with AIDS (Niba & Green, 2005). Stuart (2006), worked with college students in training to become teachers in South Africa to create their own drawings and photographs to explore their understandings of HIV. Peer evaluation of each others' drawings and photographs allowed for further reflection on their feelings and attitudes about HIV. The qualitative findings from this study suggest the potential for this type of intervention to change behavior.

In the United States, the NAMES Project AIDS Memorial quilt is a community art project that commemorates those who have died of AIDS while conducting display programs through partnerships with other groups, including schools (McDonald, Antunez, & Gottemoeller, 1999). According to the National Youth Education Program (n.d.), the AIDS Memorial quilt has impacted students' desire to know more about HIV prevention and enhanced teachers' ability to teach about HIV. Knaus, Pinkleton and Austin (2000) employed a Solomon four group design to evaluate the effects of visiting the AIDS quilt on college students. They found visiting the quilt increased information-seeking about HIV, which in turn predicted behavior change (condom use).

Jones (2008) conducted a content analysis of focus groups to develop authentic stories that were dramatized in a soap opera video intervention for African American women. The intervention was tested in a RCT. Findings indicated the intervention decreased participants' expectations to engage in unprotected sex when compared to a control. Glik, Nowak, Valente, Sapsis and Martin (2002) provide a framework for evaluating "edutainment" youth HIV prevention interventions. Advantages of combining education and entertainment include the personal nature of the communication, emotional involvement of the audience, and ability of the audience to interact and provide immediate feedback.

While some of the arts-based interventions referenced have been rigorously evaluated, others have suggested that the effects of arts programs cannot be measured and that evaluation of such programs is not possible or appropriate (Panford, Nyaney, Amoah, & Aidoo, 2001). Given this difference in viewpoint, this dissertation evaluates the effects on knowledge and attitudes of a program incorporating a visual arts exhibit and involving participants in creating their own artwork related to AIDS, through a rigorous study design.

According to McDonald and Wessner (2003), visual art can convey the scientific, historical, and emotional aspects of HIV. The arts are believed to communicate about HIV and health in general based on several social and behavioral science theories, including the health belief model and social learning theory (McDonald, Antunez, and Gottemoeller, 1999; Kirby, Laris, & Rolleri, 2005). This dissertation, while building on social and behavioral science theories, also incorporates an education-specific framework. Dewey (1934) wrote of the instrumental power of art. "The work, in the

sense of working, of an object of art, does not cease when the direct act of perception stops. It continues to operate in indirect channels” (page 145). This study tests the operation of art on attitudes and knowledge (indirect channels that may influence behavior). Integrating the arts with health education also incorporates Gardner’s (1994) multiple intelligences, particularly spatial intelligence.

The AIDS Museum’s programs can reach students who would otherwise access information about HIV and AIDS through a lecture or textbook. Some studies suggest that African American and Latino students in low income urban environments learn with a sensori-active cognitive style (Morgan, 1996). Consequently, high school students in Newark may benefit from engaging in the AIDS Museum activities. Evidence has shown that school-based anti-stigma programs incorporating the arts have been effective at improving high school students’ knowledge and attitudes about mental illness (Warner, 2005); however reports about these studies have not included evidence of their methodological rigor. This dissertation tests whether a comparable effect exists for an arts program aimed at increasing knowledge about AIDS and promoting more positive attitudes toward people living with HIV.

The AIDS Museum.

Building on previous studies of arts-based HIV prevention programs, this dissertation evaluates the effects of a program implemented as a partnership between the Newark Public Schools and the AIDS Museum, a nonprofit organization founded by the investigator to educate people about HIV/AIDS through the arts. Based in Newark, the AIDS Museum sponsors traveling exhibits of art related to AIDS and work by HIV-positive artists. Young people are a target audience for the AIDS Museum’s programs.

The AIDS Museum intervention is both affective and cognitive, designed to influence knowledge, attitudes and feelings about HIV. While knowledge belongs to the cognitive domain, and emotions are in the affective domain, different researchers have categorized attitudes as cognitive or affective. Some argue that affective values (positive or negative feelings) influence attitudes and behaviors (Slovic, 1999). According to Bloom's (1956) taxonomy, attitudes are in the affective domain. Others believe attitudes could be either cognitive or affective (Fiske, 2010).

The design of the AIDS Museum's intervention for Newark public high school students is consistent with the characteristics of effective evidence-based education for young people about HIV and sexual health. The characteristics described below come from the recommendations based on reviews of school-based HIV education programs conducted by Kirby, Laris, and Rolleri (2005) and updated by Gordon (2007).

When developing HIV education curricula, the evaluation literature recommends including people with expertise in different areas, assessing the needs and assets of the young people targeted, developing a logic model approach, designing activities consistent with community values and available resources, and conducting pilot tests on some or all of the activities. The AIDS Museum intervention has been designed with input from people with expertise in HIV prevention and arts education among other fields. The needs and characteristics of young people in Newark have been assessed and will be discussed throughout this study. The AIDS Museum program logic model is shown in Figure 1.

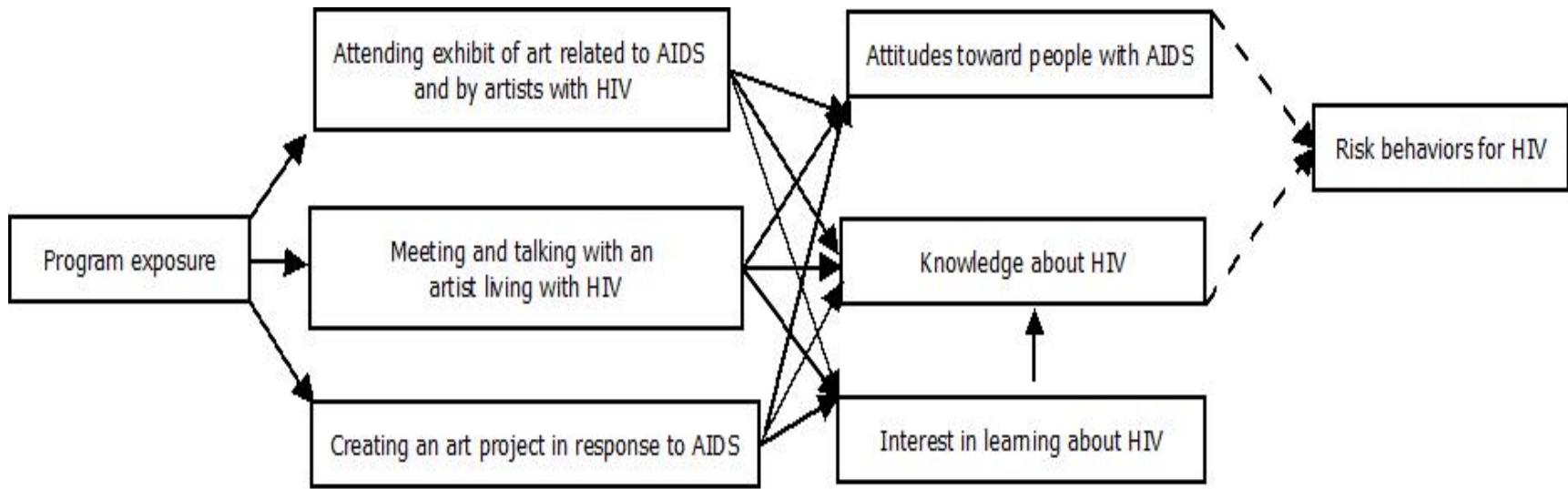


Figure 1. AIDS Museum program logic model

Activities have been designed consistent with community values and available resources through informal meetings and discussions with employees of the Newark Public Schools and representatives from other HIV prevention and care organizations in Newark. In particular, the intervention is designed to take up as little time as possible (three 80-minute class periods or less), and involves no monetary cost to the school district. The AIDS Museum has pilot tested some of the activities with youth groups. Feedback was generally positive about the program, but no formal evaluation was conducted.

For curriculum content, effective HIV prevention programs focus on specific psychosocial factors, such as knowledge, perception of HIV risk, attitudes, and communication that affect behaviors. Implementation of the curricula should include multiple instructionally sound activities (such as short lectures, class discussions, homework assignments, and HIV-positive speakers). In the AIDS Museum intervention that is the basis of this dissertation study, students attended an exhibit of artwork related to AIDS, participated in a discussion with an artist living with HIV, and created an art project based on their perceptions about AIDS. Finally, for effective implementation, HIV prevention programs must secure at least minimal support from appropriate authorities. For this study, support has been secured from the school district through the Newark Public Schools Institutional Review Board and meetings with district staff, school health education department chairs through both formal and informal agreements, and school health teachers through individual and group meetings.

Some examples of artwork in the AIDS Museum's exhibits can illustrate the potential to affect participants' knowledge and attitudes about HIV. The AIDS

Museum's permanent collection includes photographs of long term survivors of AIDS from a series by Richard Renaldi, an artist living with HIV in New York City. The pictures convey a message of hope, showing that AIDS is a treatable condition. Another piece is a poster created by Keith Haring (a New York City artist who died of AIDS) called "Ignorance=Fear." One of the messages on the poster is "Silence=Death." It features the logo of an AIDS organization, AIDS Coalition To Unleash Power (ACT UP). Artists who have lent their work for the AIDS Museum's exhibits include Kathy Seward MacKay, whose photographs are about AIDS in the hemophilia community, and Andrew Johnson, whose paintings of AIDS drug cocktails on silver platters suggest parallels of privilege for those who can afford treatment and who live in countries where these medicines are available. More information about the AIDS Museum and its programs can be found at www.AIDSmuseum.org.

The AIDS Museum intervention targets primarily knowledge and attitude change through an interactive program encouraging engagement. In a city like Newark with a disproportionate number of HIV cases (New Jersey Division of HIV/AIDS Services, 2010), increasing knowledge about AIDS and improving attitudes toward people living with AIDS are valuable outcomes in and of themselves as well as potential mediators of behavioral change. Students will likely encounter people living with AIDS (in some cases in their own families) and would benefit from increased understanding about modes of transmission and reduced feelings of stigma about people with HIV.

Additionally, the program targets two specific behaviors that have shown in some studies to be related to knowledge and attitudes: condom use and injection drug use. The artwork in the exhibit deals with both of these issues. It should be noted, however, that

none of the studies reviewed tested the effects of an arts-based intervention on intentions regarding injection drug use. Although few high school students in New Jersey reported ever using needles to inject drugs (Bloustein Center for Survey Research & NJ Department of Education, 2010), the high percentage of people infected with HIV through sharing needles for injection drug use (New Jersey Department of Health and Senior Services, 2009) merits the inclusion of the topic in the intervention. The AIDS Museum program focuses on behavioral maintenance—encouraging the majority of students who do not inject drugs to continue in this direction. Among sexual behaviors leading to higher risk for HIV infection (using drugs or alcohol prior to sex, having multiple sexual partners), not using a condom during their last sexual encounter was the most commonly reported among New Jersey high school students. For this reason the AIDS Museum program emphasizes changes this behavior.

Process Evaluation

This section reviews the literature on policy implementation research, including health policy implementation, policy implementation in schools, and more specifically, collaborations between universities, schools, and nonprofit organizations to implement HIV education in diverse communities. This study adopts a micro-level implementation approach and seeks the perspectives of different types of participants on HIV education implementation. Following previous health policy implementation research (Thompson, 1983; Thompson & Burke, 2007), qualitative methods were employed in order to address the dimensions of implementation such as strategic behavior, rules and routines, oversight actors, political culture, and interest groups, and to better understand HIV

education in the context of the federalist system of funding and regulation of HIV education.

The Newark Public Schools receive federal funding from the CDC for HIV education and have a mandate to comply with state standards for the health education curriculum (State of New Jersey Department of Health and Senior Services, 2008). The regulatory and distributive roles of each level of government in HIV education are examined through interviews with key school and district personnel.

This section proceeds as follows. Top-down and bottom-up theories of policy implementation are contrasted. Two frameworks for program adoption and implementation are explained: rational/technocratic and political/cultural. The section then turns to the perspectives of relevant stakeholders on implementation, including administrators, teachers, and professional staff. Next, some benefits and challenges associated with university and community partnerships to implement and evaluate HIV prevention programs are discussed. The section concludes with an examination of factors that have been found to promote or impede the implementation of health and HIV education programs in schools.

Top-Down and Bottom-Up Theories.

Policy implementation literature has been divided into top-down and bottom-up theories (Sabatier, 1986). In the top-down tradition, Sabatier and Mazmanian (1979) identified preconditions for successful implementation. These include clear and consistent objectives; adequate causal theory; a legal structure that enhances compliance; committed and skillful implementers; support from interest groups and legislative and executive principals; and no changes in socioeconomic conditions that would undermine

support of a policy or its causal theory. In health policy research, Thompson (1983) has cited similar factors that influence a program's success, including characteristics of the implementing agency (such as commitment of leaders and political, managerial and technical skill within the organization) and constituency support.

In contrast, Elmore (1980) presented backward mapping as an alternative, bottom-up way to study policy implementation. One premise of backward mapping is that policymakers have limited ability to influence other actors, including street level bureaucrats. Backward mapping argues for maximizing discretion at the level closest to the problem. Knowledge and skills of lower-level administrators, incentive structures, and relationships among stakeholders are all important factors that influence implementation according to the backward mapping perspective. Sabatier (1986) argues that bottom-up approaches are more appropriate for studying local implementation and when the conditions are relatively weak (e.g. low support from interest groups; lack of support from the legal structure).

Rational/Technical and Political/Cultural Theories.

In addition to considering program implementation, this study also focused to a lesser extent on program adoption. The factors that led schools to adopt and implement the AIDS Museum program were considered in addition to the issues that facilitated and impeded implementation and evaluation of the program. Julnes and Holzer (2001), in an empirical study found that adopting performance measures was driven more heavily by factors from rational and technocratic theory, whereas actual implementation was influenced by factors addressed by political and cultural considerations. The rational/technocratic framework includes resources, information (knowledge, training),

goal orientation (consensus), and external requirements (policy decisions/directives). The political/cultural framework includes internal interest groups, external interest groups and unions, and risk taking and attitudes. The process evaluation component of this dissertation examined whether the rational/technocratic or political/cultural framework best explained adoption and implementation of AIDS education programs in the Newark Public Schools.

Stakeholders' Perspectives on Implementation.

Previous studies have considered the perspectives of different types of stakeholders regarding policy implementation in school districts and in other contexts. For instance, Moynihan (2005) found that when elected officials impose policies on agency officials, stakeholders act in accordance with their norms and incentives. LaRocque (1986) found the perspectives of the school board, district administrators, principals, and teachers differed on the process of policy implementation. This dissertation included interviews with street-level bureaucrats (teachers), professional staff (nurses and social workers), and school and district administrators (including the HIV prevention education specialist and health education department chairs).

School district administrators often perceive policy implementation as highly political. In the policy areas of assessment and school-community relations, for instance, a study found that compromises were made between district office employees (who agreed not to interfere in individual schools) and principals (who agreed to cooperate and support district initiatives). According to school and district administrators, negotiating and bargaining were important (LaRocque, 1986). Another case in which district administrators perceived political forces as influencing on policy implementation

involved a superintendent who undertook extensive reforms in light of a state takeover. Fear of intervention from the state affected the actions of district administrators and board members (Honig, 2006).

Some previous research has examined policy implementation from the perspective of professionals. A study on reforms of the National Health Service in the United Kingdom found that since professionals are often averse to managerial interventions, objective evidence was a way to convince medical specialists to implement changes (Martin, Currie, & Finn, 2008). Professional staff delivering HIV education in schools include psychologists, nurses, and social workers. These occupations have professional associations that put forth codes of ethics that would seem to support an evidence-based approach.

For instance, the National Association of School Psychologists (2000) states, “Ethical behavior may occasionally be forbidden by policy or law, in which case members are expected to declare their dilemma and work to bring the discrepant regulations into compliance with the *Ethics*” (page 15). School psychologists are also called upon to “remain current regarding developments in research, training, and professional practices that benefit children, families, and schools” (page 16), which would also seem to support a learning approach.

Further support for evidence-based approaches to HIV education comes from the National Association of School Nurses (2002): “The school nurse utilizes available research in developing the health programs and individual plans of care and interventions.” Due to the resistance of professional staff to managerial interference and the influence of professional associations (particularly their codes of ethics), it is

expected that learning theories will best explain these employees' choices about implementing HIV education in schools.

Although Lipsky (1980) and others have pointed out that street-level bureaucrats often have high levels of discretion, they still face institutional barriers that influence their implementation of policies. Moynihan and Pandey (2007) found that bureaucratic red tape is an organizational institution that is negatively related to public service motivation among public employees. Other implementation research has demonstrated that the institutional environment of the school is the focal point of variation in implementation. Teachers may view district policies they are supposed to implement as challenging established patterns (LaRocque, 1986). Teachers may have to balance their role in implementing policies with internal norms in their institutional settings (Nakamura & Smallwood, 1980). Some institutional influences on HIV education policy implementation in schools could relate to school culture (including parental involvement), rules (like the curricula set for each grade level), and norms (such as which textbook is read for health classes). Institutional forces in the educational policy system can include formal authority structures, embedded norms, and explicit and implicit rules. Values and ideologies that frame society's views of social problems and appropriate policies and political actions also fall under the category of institutional forces (Honig, 2006).

In the diverse context of Newark, socio-cultural values from religious institutions, in particular Catholicism and Islam, could affect how teachers deliver HIV education. Objections from the religious communities in Newark to educating students about condom use rather than teaching an abstinence-only curriculum may hinder the

implementation of HIV education programs. These potential institutional influences on teachers' implementation of HIV education in Newark were explored through focus group interviews.

University-Community Partnerships for Health.

Studies have examined university, school, and community partnerships for youth HIV education. This collaborative approach can promote capacity building for evaluation of HIV education and prevention programs (Myrick, Aoki, Truax, Lemelle, & Lemp, 2005). Harper, Contreras, and Bangi (2003) described a process evaluation of HIV prevention programs for Latina female adolescents and gay/bisexual/transgender/questioning Latino and African American male adolescents that incorporated social, cultural, and environmental factors related to HIV risk. The program was based on social cognitive theory and further refined to incorporate the AIDS Risk Reduction Model. This participatory evaluation found that youth from the community learned how to protect themselves from HIV infection in a culturally and developmentally appropriate program and developed friendships and social support networks with other participants. Another university-community HIV prevention partnership described in the research literature focused on African American youth (Baptiste, Paikoff, McKay, Madison-Boyd, Coleman, Bell, 2005). Preliminary findings suggested that youth in the intervention group reported being in fewer sexual possibility situations (e.g. being alone at home with a date) and were more likely to break off undesirable relationships compared to a group that did not participate in the program. This study also described the advantages and disadvantages of the university-community partnership model for HIV prevention.

One positive aspect of the partnerships is that members of each organization can bring their experiences and skills to bear on the problem of HIV. University professors and students can offer experience with formal theories, scientific knowledge, data collection and statistical skills. Community members have more connections with other residents, knowledge of their neighborhood, and ability to explain contextual factors that affect behavior. Some negative consequences of university-community partnerships for HIV prevention include power imbalances and community members' fears about disclosing sensitive information to university researchers. Differences in race, age, and socioeconomic status of university representatives and community members may also cause tension.

Parents have expressed concern regarding messages about sex in HIV prevention programs that might be seen as giving young people permission to engage in intercourse. Furthermore, there have been conflicts over whether to discuss homosexual behavior, marriage, and religious values. Other researchers have noted the tension between conducting rigorous and theory-driven research and designing programs that are attractive, acceptable, convenient, and meet community needs. Some potential barriers to program adoption are program costs, staff constraints, organizational factors, research reports that lack practical relevance, and lack of interest or support from key stakeholders (Ingram, Flannery, El Kavich, & Rotheram-Borus, 2008). These advantages and challenges of university/school/community partnerships for HIV education may or may not be relevant to the implementation of the AIDS Museum's programs with the Newark Public Schools.

Barriers to and Facilitators of Health and HIV Education in Schools.

Williams (1982) proposed an analytic framework for implementation studies that highlights the challenges and potential resources for implementing organizations. Studies have examined the barriers and facilitators to implementing HIV education and other similar types of interventions or programs in schools. Macro-level issues, such as policies and other contextual factors have been found to influence HIV education implementation. At the school level, organizational factors and employees such as teachers and administrators influence implementation. Students and their parents also affect HIV education programs, particularly when they are part of research studies.

At the federal level, according to some studies, policies such as No Child Left Behind (NCLB) have led schools to emphasize priorities other than health and HIV education such as literacy, numeracy, and standardized testing (Forman, Olin, Hoagwood, Crowe, and Saka, 2009). In a study by Mueller and colleagues (2009), to overcome the challenges of competing priorities and the influence of NCLB, the program was implemented during physical education classes so students did not miss out on core subjects.

State policies have also been found to influence HIV education. For instance, with data from a survey of high school HIV teachers in Massachusetts, Blake et al (2009) found that when school districts adopted state recommendations on HIV education training, teachers were more likely to report being trained within previous year. Teachers trained recently spent more class periods on sex and HIV education, covered more topics, and involved peer leaders. Further, when districts fully incorporated state language into an HIV prevention policy, schools were more likely to teach HIV education in a required

course, and districts that fully incorporated state language on teaching HIV education in all grade levels reported that HIV education was provided to a larger percentage of students. Schools that adopted state recommendations on skills based instruction were more likely to choose a research- based curriculum. Teachers who followed research- based curricula covered more topics. They were also more likely to invite people living with AIDS to participate in class discussions, in concordance with state recommendations.

A survey in U.S. public high schools found that teachers' inclusion of specific topics and skills in HIV education and sex education generally was associated with contextual factors. Teachers' concern about possible adverse community reaction, and teaching in a school without a district- or school-level sex education policy were positively associated with teaching topics related to abstinence and negatively associated with teaching topics related to pregnancy and STI prevention (Landry, Darroch, Singh, & Higgins, 2003).

These findings suggest that there are top-down influences on HIV education, flowing from the state to the district down to the school and individual teacher levels. This dissertation study builds on research to examine influences on HIV education in one particular district in order to gain a micro-implementation perspective.

At the school level, many researchers have found support from teachers facilitated the implementation of HIV education and other interventions. Forman, Olin, Hoagwood, Crowe, and Saka (2009), interviewed developers of evidence-based interventions in schools. They found that teachers could be “champions for implementation”. Teacher training was an influential factor, as in the Blake et al (2009) study. Some teachers were

open to learning about the intervention, willing to train other teachers, and exhibited leadership behaviors in support of the program. However, teachers could also create barriers to program implementation. These included lack of flexibility in their teaching approach, lack of interest in the intervention, and lack of teaching skill.

Teachers were also found to be important to the success of HIV prevention programs in a study by Kam, Greenberg, and Walls (2003). The research examined factors that contributed to the success of a prevention intervention in schools in high poverty communities. With data gathered through interviews and observations, the researchers rated student outcomes, implementation quality, teacher competence, and principal support. A high degree of classroom implementation by teachers contributed to positive student outcomes.

Mathews, Boon, Flisher, and Schaatma (2006) studied factors associated with teachers' implementation of HIV/AIDS education in secondary schools in Cape Town, South Africa. Although the study took place on a different continent, several of the findings are consistent with studies in the U.S. This suggests these factors are relevant to the implementation of HIV education across different contexts. Teacher characteristics influenced whether they taught HIV/AIDS education. Female teachers were more likely to have implemented HIV education than male teachers. Previous training, self-efficacy, student-centeredness, beliefs about the outcome of HIV/AIDS education, and responsibility were all associated with teaching HIV education.

Other studies have found that teachers of different subjects teach sex and HIV education differently. Landry, Darroch, Singh, and Higgins (2003) found that family and consumer science teachers were more likely than health education teachers to teach

abstinence only. Physical education teachers were more likely than health education teachers to emphasize contraceptive method ineffectiveness or not teach the topic at all.

In addition to teachers, school administrators, such as principals, affect HIV prevention program implementation. One of the main factors influencing implementation in the study by Kam, Greenberg, and Walls (2003) was adequate support from school principals. Contrary to previous research, this study found that implementation quality alone was not enough to predict positive outcomes; principal support was also necessary. They speculated that this may have been due to the chaotic environment of the school due to rapid turnover in superintendents, principal instability, and very low student achievement that led the state to take over the district, all of which also apply to the Newark Public Schools (Giambusso & Calefati, 2010; Associated Press, 2011). Although principals have sometimes facilitated implementation, some researchers reported some passive resistance by principals in that they approved the intervention but did not want to be involved beyond “giving their blessing” (Forman, Olin, Hoagwood, Crowe, & Saka, 2009).

. In another study, Mueller and colleagues (2009) also found that support of the principal and assistant principal were important. Their research was based on feedback from program facilitators and participants in an HIV prevention program in a predominately Latino high school. According to the researchers, school administrators and staff were willing to provide space to deliver the program because of their beliefs that students needed accurate information about HIV.

In addition to teachers and principals, another type of school employee, referred to as special services staff, sometimes coordinated intervention activities or implemented

the intervention in Forman, Olin, Hoagwood, Crowe, and Saka's study (2009). However, 25% of intervention developers reported special staff had no role.

The same study found other school-level factors influenced implementation. Some other facilitators to implementation were integrating the intervention with other school programs and/or the curriculum, and engaging the school in planning and implementation. In some cases, the school philosophy was compatible with the intervention in that the school goals and policies emphasized mental health and prevention. Additional obstacles included school disciplinary practices, program costs and restrictions on how funds could be spent, and finding time for the intervention during the school day. Beyond initial adoption and implementation, the study found barriers to sustainability such as turnover of school personnel. Similarly, Mathews, Boon, Flisher, and Schaatma (2006) found that school characteristics, such as the existence of a school HIV policy, a climate of equity and fairness, and good school-community relations were also associated with implementing HIV education.

Additional school characteristics that affect implementation include size and characteristics of the student body. Landry, Darroch, Singh, and Higgins (2003) found that teachers at larger schools, with at least 1000 pupils, were less likely to teach abstinence as the only option compared to teachers at small schools, with less than 300 students. Teachers at schools in which at least 30% of students were eligible for free or reduced price lunch were less likely than those at schools with less than six percent of students in poverty to emphasize contraceptive method ineffectiveness.

Other than contextual factors, school characteristics and staff, Mueller and colleagues (2009) found that parents and students could facilitate or present obstacles to

implementation. In their study, parent support was obtained through presenting the program at parent meetings. Some challenges arose from the students. One obstacle was that many students did not turn in parental permission slips for the program. Poor attendance was also a concern. Additionally, since many students lacked very basic knowledge about HIV and other sexual health issues, student questions on a variety of topics led to discussions that distracted from the formal curriculum. On the other hand, some students did not want to participate because they thought they already knew enough about sex, or because they were embarrassed to participate.

This research aims to build upon and contribute to the literature on policy implementation through offering a micro-perspective on implementation. This study considers variation in policy implementation within a relatively homogenous group of schools in order to understand what internal factors may influence variation. Further, many implementation studies focus on top-down, federally mandated or sponsored programs (for example Pressman & Wildavsky, 1984). The program to be implemented in this dissertation study is a bottom-up, nonprofit initiative adapted to a public organization setting, with no government funding.

Research Questions

This chapter has reviewed research relevant to the outcome and process evaluation components of the dissertation. To contribute to the literature in these fields, new research questions were generated.

Outcome evaluation.

In order to evaluate the effects of the intervention, the following research questions were addressed:

- Q₁ Do students participating in the AIDS Museum program gain more knowledge about HIV and AIDS, compared to similar students not in the program?
- Q₂ Do students participating in the AIDS Museum program improve their attitudes more toward HIV prevention and people with HIV, compared to similar students not in the program?

Additionally, through interviews with students, the study addressed the research question:

- Q₃ Through what processes do students' knowledge and attitudes about HIV change?

Process Evaluation.

The guiding research question for the implementation phase of the study was:

- Q₄ What conditions promote or impede implementation of school-based HIV education programs?

This section has reviewed research literature on evidence-based social programs, HIV prevention education in schools and involving the arts, and policy implementation. The next chapter details the methods of this dissertation.

Chapter 2: Methods

The intent of this mixed methods study is to research the implementation of an HIV education program that incorporates the arts in four public high schools in Newark, New Jersey. The program, sponsored by the AIDS Museum, a nonprofit organization, consisted of visiting an exhibit of art related to AIDS, participating in a discussion with an artist living with HIV, and creating an art project related to AIDS. This section reviews the research design, followed by the sampling strategy, instruments and data collection procedures. The chapter concludes with the methods for data analysis and ethical issues. Where relevant, the topics are addressed separately as each pertains to the evaluation and implementation components of this study.

Research Design

Quasi-experiment.

This study was conducted in a quasi-experimental pretest posttest nonequivalent comparison group design (Shadish, Cook, & Campbell, 2002), illustrated in Figure 2. Due to the classroom-based nature of much of the HIV education in Newark, individual students were not separated from their classes for the program. If that had been the case, there would have been a risk that the program may have spilled over between participants and nonparticipants. Randomly assigning classrooms instead of individual students to the treatment can limit the extent to which intervention and control-group participants share information (Bloom 2005). Similar to the remedy employed by Sikkema, et al., 2000 and Kelly et al., 1997, cluster randomization was selected as the approach to address this potential.

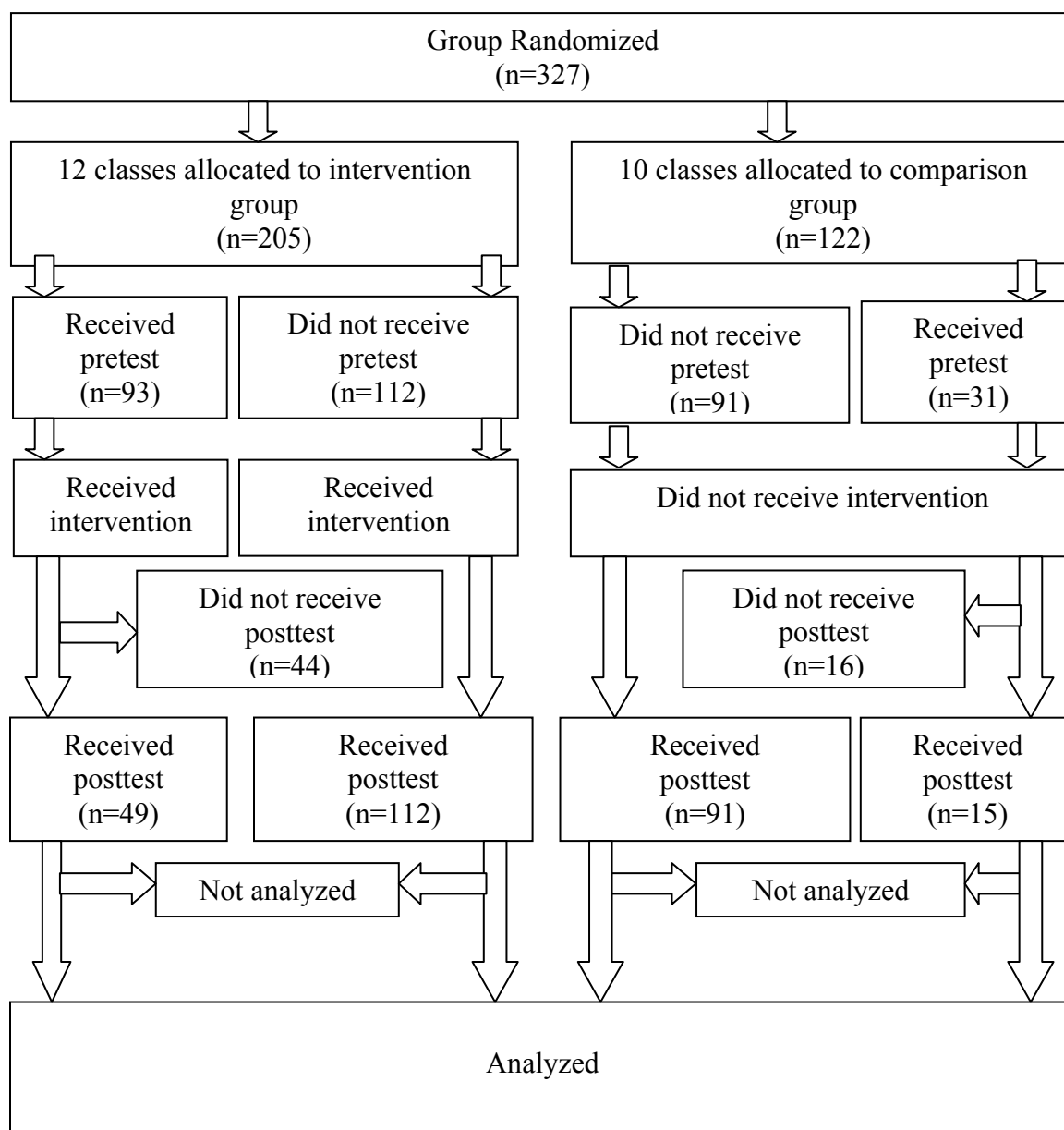


Figure 2. Design of the study

To increase the precision of program impact estimators by reducing the standard errors, the design of this study consisted of blocking before randomization. Each of the clusters in a block was randomly assigned to the intervention or comparison condition. Classrooms were grouped by teacher (when possible for those teachers in the study teaching at least two health classes) and randomized such that one classroom per teacher

was assigned to the AIDS Museum program and the other to the usual HIV education curriculum. Although efforts were made to randomize within this structure, in some circumstances other assignment procedures had to be followed. For example, in schools with block scheduling, all “A” day classes may have been assigned to the intervention group and all “B” day classes to the comparison group. More classrooms were assigned to the intervention group (12) than the comparison group (10).

Case Study.

This dissertation is a case study of HIV education in four high schools in the Newark Public Schools. Case studies may be conducted in conjunction with quantitative evaluation research to describe a program and the context in which it is implemented (Yin, 2009). This has been referred to as a nested model, in which the researcher chooses different methods to study different groups, and one method operates within the framework of the other method—in this case an experiment with case study methods (Creswell, 2009). The study draws on multiple sources of evidence, including individual interviews and focus groups with different types of participants. This research was conducted within what Yin (2009) describes as an embedded case study design involving more than one unit of analysis. Although the case is a single school district, individual schools and classrooms are embedded units.

Mixed Methods.

The design for this study is quantitative dominant sequential mixed methods. Qualitative methods informed the quantitative findings. First, quantitative data were collected through a pretest. Then, the researcher engaged in participant observation during the intervention. Next, posttest survey data were collected. After that, qualitative

interviews took place. This type of design has been described as combining a quantitative mini-study with a qualitative mini-study (Johnson & Onwuegbuzie, 2004). Previous researchers have combined focus group and individual interviews, and this approach is particularly informative when seeking different views about the same phenomenon (Lambert & Loiselle, 2008). Students were interviewed individually, or in pairs if they were more comfortable this way, due to privacy concerns. Administrators were interviewed individually due to time and scheduling constraints. Teachers were interviewed as a group during a free period for convenience and to encourage them to share their HIV education techniques with each other and the researcher.

Action Research.

This dissertation study also falls under the category of action research. Gabrielian, Yang, and Spice (2008) describe the three goals of action research as improving the efficiency and effectiveness of the action, empowering participants, and making a contribution to knowledge. Out of four varieties of action research (diagnostic, participant, empirical, and experimental), this study is empirical and experimental. Of the three main approaches to action research, this dissertation involves action science and action inquiry rather than cooperative inquiry or participatory action research. This study involves action research in schools, one of the five fields of action research practice.

Specifically, the type of action research can be labeled “researcher as participant.” Evaluating an intervention that one has designed can be challenging and present opportunities for researcher bias. This study attempts to avoid such bias in part through a rigorous research design. Despite its shortcomings, some have argued (e.g. Semel, 1994) that social research as a participant is an important form of research, provided steps are

taken to address researcher bias. It is necessary to compare the researcher's own perceptions as a participant to other evidence, such as documents and interviews. The final product includes the researcher's own experiences and those of others. Such a study can be informed both by the subjective understanding of an insider and the insight of an outsider. Semel recommends allowing time to pass between the occurrence of events and their analysis, although this was not possible in this dissertation study. Reflection and ongoing discussions with colleagues both inside and outside of the institutions involved in the research are helpful. In this case, for example, other graduate students accompanied the researcher during the program and took notes as observers (not participants) (Semel, 1994; 1995). However, it should be noted that the qualitative data (both field notes and interview transcripts) were not coded by a second coder.

Sampling

This study involves purposive sampling at four levels: city, schools, classrooms, and individuals. Newark, New Jersey provided an interesting case for the study of HIV education. Characteristics of the city have been described in the previous chapter. Although this is a case study of four public high schools in Newark, the results should have broader implications, particularly for other diverse urban settings. A single city and school district allowed for control of several important contextual factors.

There are fourteen high schools (including five magnet schools with special curricula focused on a subject such as science or history) and two ninth grade academies (affiliated with other high schools) in the Newark Public School district. For this dissertation, four high schools were selected based on different student demographic characteristics, as shown in Table 1 (National Center for Education Statistics, 2008).

Schools were not randomly assigned to the program. Rather, only those high schools in which the researcher was successful in contacting someone involved in health education, permission was granted by the appropriate officials, and teachers did not attempt to block the program participated. These challenges are discussed further in the findings from the process evaluation.

In Table 1, those high schools that adopted and implemented the AIDS Museum program are in bold. The high schools that were approached about the intervention but did not ultimately adopt or implement the program are listed to the right. The schools were given pseudonyms to protect the confidentiality of those employees in the schools who were interviewed. The pseudonyms of the schools that implemented the program are Emma Lazarus, Rosa Parks, Martin Luther King, and William, J. Brennan, Jr. The names given to those schools that did not implement the program are Booker T. Washington, Sarah Vaughn, Sojourner Truth, Benjamin Banneker, Luis E. Miramontes, Paul Robeson, and Ilka Tanya Payan.

There were no statistically significant differences between schools that did or did not implement the program, most likely due to the small number of schools. However, some differences, though not significant, are worth describing. On average, those schools that implemented the intervention tended to be more poorly ranked and have higher percentages of African American students and fewer Latino students compared to those schools that did not implement the program. In terms of ethnic composition and poverty, the high schools in the AIDS Museum were comparable to those that were not involved in percentages of white students and students eligible for free or reduced price lunch. Larger schools with more than 1,000 students and smaller schools with less than 600

students were more likely to implement the intervention, while mid-sized schools with about 800 students were less likely to implement. The two ninth grade academies and two vocational or alternative high schools were not considered for this study. There were no statistically significant differences between schools that did or did not implement the program, most likely due to the small number of schools. However, some differences, though not significant, are worth describing. On average, those schools that implemented the intervention tended to be more poorly ranked and have higher percentages of African American students and fewer Latino students compared to those schools that did not implement the program. In terms of ethnic composition and poverty, the high schools in the AIDS Museum were comparable to those that were not involved in percentages of white students and students eligible for free or reduced price lunch. Larger schools with more than 1,000 students and smaller schools with less than 600 students were more likely to implement the intervention, while mid-sized schools with about 800 students were less likely to implement. The two ninth grade academies and two vocational or alternative high schools were not considered for this study. As Shadish, Cook, and Campbell note:

Sometimes it is advantageous to obtain heterogeneous samples that differ as widely as possible from each other. Thus if it were possible, one might choose to implement a treatment both in a ‘magnet school,’ that is, a school established to exemplify teaching conditions at their best, and also in one of the city’s worst problem schools. If each instance produced comparable effects, then one might begin to suspect that the effect would hold in many other kinds of schools (page 377).

Table 1. High school sample characteristics

	EL	RP	MLK	WJB	BTW	SV	ST	BB	LEM	PR	ITP
<i>NJ Monthly ranking-rounded percentile</i>	10th	10th	10th	---	60 th	40 th	20 th	80 th	50 th	10 th	10 th
Number of students	1452	1487	1081	223	533	591	808	887	459	824	1763
% Latino	50	2	6	25	12	30	8	33	53	4	64
% African American	18	97	94	74	84	60	91	42	38	98	34
% white, non-Latino	30	0	0.2	2	2	9	0	22	7	0.2	6
% eligible for free/reduced price lunch*	78	64	70	81	78	78	72	73	89	72	67
*As a proxy for low income											

Out of the four high schools selected, William J. Brennan, Jr. High School is a magnet school, while Martin Luther King, Jr., Rosa Parks, and Emma Lazarus high schools are comprehensive schools with comparatively low rankings in terms of academic achievement (Monmouth University Polling Institute, 2008). The size of the student body ranges from 223 to 1487 students. Emma Lazarus High School serves mostly children of immigrants from Europe and Latin America. The influence of the Catholic Church through the archdiocese of Newark is stronger in this community than in others. The vast majority of students at Rosa Parks High School and Martin Luther King, Jr. High School are African American. William J. Brennan, Jr. High School is somewhat more balanced but also mainly African American. More than half of the students at each of the high schools are eligible for free or reduced price lunch (a proxy for poverty), with

the lowest percent at Rosa Parks High eligible (64%) and the highest percent at William J. Brennan, Jr. High eligible (81%).

The student bodies of these four high schools together reflect fairly accurately the population of young people in Newark, a diverse group with high poverty rates.

According to the 2008 American Community Survey, about 65% of those between the ages of 15 and 17 in Newark are African American, and 5% are Caucasian. Of any race, 34% are Latino. The poverty rate is about 32% among young people in Newark (between the ages of 15 and 17 years old), with the highest poverty rate among African American females at 47.7%.

Students who participated in the study were slightly more likely to report their ethnicity as Latino compared to the 2008 statistics for each of the schools that implemented the program. This may reflect changing demographics of the communities or greater propensity to return consent forms by Latino students or their parents. Students in the study were also somewhat less likely to describe themselves as African American. However the dissertation survey allowed for selection of multiple race categories, whereas the National Center for Education Statistics categorized students as only one race. Previous studies have found African American are underrepresented in studies with active parental consent procedures (Unger, et al., 2004). Results from this study suggest perhaps a greater tendency to return forms among Latino students compared to African American students.

Outcome Evaluation.

For the quantitative data, the sample size was determined in part by practical limitations (the class sizes at the four high schools selected) while taking into

consideration the need for a large enough sample to detect a program effect. The analysis of scales rather than categorical dependent variables enhanced the ability to detect a program effect.

Classrooms were selected based on health teacher interest in participating in the program. At some schools the health education department chair recommended particular teachers who would be willing to help implement the program. At Emma Lazarus High and Martin Luther King, Jr. High, the program was implemented in ninth grade classes. Rosa Parks High School requested the program be offered to eleventh grade students. At William J. Brennan, Jr. High School, grades ten and eleven were part of the study. Each school offered reasons for selecting particular grades. In some cases, department chairs believed the program was consistent with the curriculum in particular grade levels. In other cases, student maturity was a factor. Teachers were also concerned about reaching students before they start engaging in risk behaviors. In the state of New Jersey, according to the New Jersey Student Health Survey, students over age 18 are most likely to report ever having sexual intercourse (about 74%), followed by students aged 16-17 (about 50%) and students aged 15 or younger (about 28%) (Bloustein Center for Survey Research & NJ Department of Education, 2010).

A total of 325 students returned consent forms and completed surveys, for a response rate of approximately 49%. Given high rates of absenteeism, it is difficult to determine a true response rate because not all students in a class may have received consent forms.

At the individual level, interviews were conducted with five to ten students from the intervention groups at Rosa Parks High and Emma Lazarus High about their

perceptions of the AIDS Museum program and their sources of knowledge about HIV. The purpose of these interviews was to try to understand the causal mechanisms through which any program effects may have occurred. Shadish, Cook and Campbell (2002) say that such explanations help identify hypotheses to be tested in the next round of studies. The interviews help identify which components of the intervention need to be transferred to other situations in order to have the same effect. Johnson and Onwuegbuzie (2004) argue that adding qualitative interviews to experiments is a way to tap into participants' perspectives and meanings. The students were selected based on their own consent and that of their parents as well as teacher recommendations to obtain a range of student perspectives (e.g. those who liked the program and those who did not; very engaged students and less engaged students; and a diverse group based on demographic characteristics).

Process Evaluation.

The sampling strategy for the implementation component of this study selected individuals who “have a unique perspective or occupy important roles” (Remler & Van Ryzin, 2010, page 156). Accordingly, the study included interviews with school and district employees based on their job titles and involvement in HIV and health education. School-level employees affect the implementation of HIV education, while district-level employees influence HIV education policies. State and federal regulations govern how students are educated about HIV (e.g. abstinence-only or comprehensive sex education), and district managers determine in part how these legislative mandates are carried out. Nurses (registered nurses and nurse practitioners) and social workers also deliver HIV education and other types of prevention programs through school-based clinics.

Interviews with each of these types of personnel allowed for better understanding of the factors influencing decisions about and implementation of HIV education in the high schools.

At Emma Lazarus High School and Rosa Parks High School, focus groups were conducted with the four teachers whose classes participated in the study. At Martin Luther King, Jr. High School, the researcher was present during a department meeting at which the three teachers whose classes participated and the department chair, who observed the program, discussed issues at the school including those that hindered program implementation. Focus groups were chosen instead of individual interviews because they provided opportunities for teachers to interact with one another and share their ideas about HIV education. The focus groups were scheduled during teachers' common free periods.

Individual interviews were conducted with school-level administrators (including health education department chairs), district-level administrators (the HIV prevention education specialist; the director of health, physical education, and athletics; the director of health services who supervises school nurses, the director of grants development who was responsible for a major grant for HIV prevention in the district; the supervisor of the office of student support who oversees school social workers), and school-level health professionals (including counselors, psychologists, and nurses). Individual interviews were chosen for these employees due to scheduling and confidentiality concerns. Given the small numbers of each type of employee at each school, and the difficulty of arranging for meetings with employees outside their own school or office, focus groups were not a feasible alternative in these circumstances.

Data collection

Outcome Evaluation.

Outcome evaluation data were collected through a student questionnaire including previously tested survey instruments, the HIV Prevention Attitude Scale (Torabi and Yarber, 1992) and the AIDS Knowledge Questionnaire (Leake, Nyamathi and Gelberg, 1997). The HIV Prevention Attitude Scale contains 15 items. The five-point response format ranges from strongly agree to strongly disagree and includes an “undecided” option. Scores can range from 15 to 75; a higher score indicates a more positive attitude toward HIV prevention (i.e. less stigma toward people with HIV and greater comfort with HIV prevention behaviors). In a sample of predominately white teenagers in a Midwestern high school, this scale had an alpha reliability of .78, while in a sample of substance-dependent youths in Jackson, Mississippi the alpha reliability was .82 (St. Lawrence, Jefferson, Alleyne, & Brasfield 1995; Torabi & Yarber 1992; Redman 2003; Smith, Dane, Archer, Devereaux, & Katner 2000). The AIDS Knowledge Questionnaire contains 21 items. A score of 0 to 21 is formed by summing the number of correct responses such that higher scores indicate greater knowledge. The response format ranges from 1 (definitely true) to 5 (definitely false) and includes a “don’t know” option. Internal consistency reliability for a sample of homeless women in Los Angeles was .89 (Nyamathi, Keenan, & Bailey 1998; Leake, Nyamathi & Gelberg 1997; Redman 2003). In the present study, the alpha reliability for both the AIDS Knowledge Questionnaire and the HIV Prevention Attitude Scale was .77. The correlation between students’ scores on the knowledge and attitude scales was .48.

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Uniqueness
Q22 Support friend with HIV			.735			.425
Q23 People with HIV got what they deserve						.534
Q24 Comfort with condoms	.685					.416
Q25 Dislike limiting sex to one partner		.705				.396
Q26 HIV test is embarrassing		.564				.467
Q27 Meant for some to get HIV		.563				.500
Q28 Condoms too much trouble		.571				.442
Q29 AIDS is preventable				.791		.302
Q30 IV drugs stupid due to HIV risk					.887	.210
Q31 Influence friends' safe behavior				.500		.458
Q32 Shake hands			.764			.317
Q33 Avoid sex if partner might have HIV	.583					.519
Q34 Insist on condom use	.660					.425
Q35 Not sharing needles	.751					.372
Q36 Share HIV facts with friends						.507

As shown in Table 2, factor analysis of the HIV Prevention Attitude Scale yielded five factors based on the Kaiser criterion (eigenvalues greater than one) that account for 58% of the total variance in attitude scores. Factor one included questions related to HIV prevention behaviors, such as using condoms and not sharing needles. Factor two was related to other behaviors such as getting tested for HIV and limiting sex to one partner. Factor three was related to questions about feelings toward people with AIDS, such as support for a friend with AIDS or willingness to shake hands with someone with AIDS. Factor four included questions about self-efficacy, such as whether HIV is preventable and people can influence their friends to practice safe behavior. Factor five had only one question that may have been confusing to some students that about IV drugs. During the administration of the questionnaire, several students asked what IV means. The statement read: "The chance of getting HIV makes using IV drugs stupid." It is also

possible that students believed using IV drugs is stupid regardless of the risk of HIV.

Alternatively, the extreme negative phrasing of the statement may have affected responses. Students may know people who inject drugs and not want to label the behavior as stupid.

	Factor 1	Factor 2	Factor 3	Factor 4	Factor 5	Factor 6	Uniqueness
Q1 AIDS reduces body's protection against disease							.547
Q2 AIDS can damage brain					.760		.396
Q3 Caused by virus		.520					.581
Q4 Teenagers cannot get it				.672			.376
Q5 Can have HIV but not AIDS						.836	.290
Q6 Can tell by looking if someone has AIDS							.511
Q7 Can look and feel well with AIDS							.459
Q8 Pregnant woman can give to her baby		.678					.456
Q9 There is a vaccine				.546			.539
Q10 There is no cure				.584			.452
Can get HIV from...							
Q11 Living near someone	.754						.361
Q12 Working near someone	.831						.258
Q13 Eating something if cook has HIV	.783						.331
Q14 Shaking hands, touching, kissing	.734						.390
Q15 Sharing plates, forks, glasses	.503						.440
Q16 Public toilets	.539						.468
Q17 Sharing needles		.796					.316
Q18 Cough or sneeze			.584				.374
Q19 Classmate with HIV	.757						.338
Q20 Mosquitoes			.735				.398
Q21 Having sex		.818					.287

Six factors were identified in the AIDS Knowledge Questionnaire, as shown in Table 3, that accounted for 59% of the variance in scores. Factor one included questions

about whether HIV could be transmitted through types of casual contact. Factor two was about actual transmission modes, including sharing needles, sexual contact, and during pregnancy, childbirth, or breastfeeding. Factor three reflected students' uncertainty about whether HIV could be spread through some ways such as coughing or sneezing or by mosquitoes. Factor four included questions about whether there is a vaccine or cure for HIV, and whether teenagers can get AIDS. Factors five and six contained only one question each, about the effects of AIDS on the brain, and the difference between HIV and AIDS, respectively. Both of these questions were answered correctly by very few students.

In factor analyses in previous studies, analysis of the HIV Prevention Attitude Scale produced four factors, and two factors explained the structure of the AIDS Knowledge Questionnaire (Torabi & Yarber, 1992; Leake, Nyamathi, & Gelberg, 1997). When a two-factor solution was imposed on the AIDS Knowledge Questionnaire, the factors generally matched those found in previous studies, although not precisely. When a four-factor solution was imposed on the HIV Prevention Attitude Scale, none of the factors matched those found in previous studies. These differences may reflect changing patterns in knowledge and attitudes since the scales were last tested, or different patterns for an urban diverse group of young people compared to the groups the scales have been tested on previously.

In this study, the top five true/false questions students did not answer correctly (regardless of whether they were in the intervention or comparison group or whether on a pretest or posttest) were: a person can be infected with the AIDS virus and not have the disease AIDS (15% correct); a person can get AIDS or the AIDS virus infection from

mosquitoes or other insects (17% correct); AIDS can damage the brain (18% correct); there is a vaccine available to the public that protects a person from getting the AIDS virus (31% correct); and a person can get AIDS or the AIDS virus infection from using public toilets (31% correct). According to Bruine, Downs, Fischhoff, and Palmgren (2007), the ubiquity of HIV education has led to relatively high scores among adolescents and young adults on questions about how HIV can and cannot be transmitted. However, this research suggests that among this particular population, many students do not know that HIV cannot be spread through casual contact. Additionally, there may be misunderstandings about the differences between HIV and AIDS. Out of over 250 students the researcher asked during the course of the study, not one student could answer correctly what the letters HIV or AIDS mean. Further, students may be unaware of the types of opportunistic infections that are associated with AIDS such as those that can damage the brain or eyesight. One of the artists whose work is in the AIDS Museum collection has HIV and is partially blind due to an AIDS-related illness. Upon hearing this and seeing his artwork, many students expressed that they did not know people with HIV could possibly lose their sight. Students may also be confusing HIV with other STIs such as Human Papilloma Virus (HPV). Some mentioned hearing about vaccines such as Gardasil that prevent HPV. This may have led students to believe there is a vaccine that prevents HIV. Additionally, some students mentioned hearing about a person who had HIV and was cured after a bone marrow transplant (Fox, 2010). This may have skewed responses to the survey question about whether there is a cure for AIDS at present. Although students may not understand the difference between this, a cure for one person, and a widespread cure, it is encouraging that students are aware of these news stories.

In addition to the two scales discussed, two feeling thermometer questions were included in the survey that asked about students' own perceived levels of knowledge about HIV and feelings toward people with AIDS. Feeling thermometer questions have been asked in previous surveys about attitudes related to HIV (e.g. Herek, Capitano, & Widaman, 2003).

Finally, demographic questions were included at the end. Some confusion arose over these questions during the administration of the survey. For example, the surveys asked whether students considered themselves to be transgender. Many students asked what transgender means. Since only three students identified themselves as transgender, this variable was not included in the analyses. Questions about race and ethnicity were also confusing to students. For example, some students considered themselves to be Hispanic or Latino but did not list their race. Other students listed specific nationalities such as Dominican or Portuguese rather than or in addition to selecting their race.

Some students were also confused by the layout of the survey. They pulled the pages apart rather than opening the survey as a booklet. Once this problem was discovered, the booklets were stapled to prevent this.

The entire survey was also translated into Spanish by another graduate student. At Emma Lazarus High School, 13 students completed the survey in Spanish. Additionally, the intervention was conducted in both Spanish and English for one bilingual class at the same school.

The questionnaires were coded based on the school, teacher, and classroom. The questionnaire asked students their date of birth, by which their pretests and posttests were matched. If two students in the same class had the same birth date, an attempt was made

to match the surveys based on additional characteristics, such as gender and ethnicity. It was somewhat unlikely, for example, that two Latino boys in the same class had the same birth date.

Under ideal conditions, the questionnaire took about 15 minutes to complete. However, there were often distractions. For example, in some cases students who did not return their consent forms remained in the classroom (working on other projects) while those who did return consent forms completed the surveys. In practice, this often led to distracting conversation among students. Due to the district's opt-out policy for HIV education (effectively passive parental consent), students were generally allowed to participate in the AIDS Museum program even if they did not return consent forms for the study. Only students who returned consent forms, however, participated in the survey and interviews.

Table 4 shows the timing of the intervention and data collection for each school. The written surveys were administered and collected in class prior to the program and after the program for the intervention group (and at a comparable time for the control group). At Emma Lazarus High School, only posttests were administered. At William J. Brennan, Jr. High School, Martin Luther King, Jr. High School, and Rosa Parks High School, pretests and posttests were administered. The time between administering the pretest and posttest ranged from two to four months. At Emma Lazarus High School, the full intervention was completed. At William J. Brennan, Jr. High School, students participated in the art exhibit and the discussion with the artist. At Martin Luther King, Jr. High School and Rosa Parks High School, students participated in the art exhibit only.

	November	December	January	February	March
William J. Brennan, Jr.		Collected pretests from intervention and control groups. Art exhibit.			Artist visit. Collected posttests from intervention and control groups.
Emma Lazarus	Implemented intervention. Collected posttests from intervention and control groups		Student interviews and teacher focus group.		
Martin Luther King, Jr.	Collected pretests from intervention group. Art exhibit.				Collected posttests from intervention and control groups. Observed department meeting.
Rosa Parks		Collected pretests from intervention and control group. Art exhibit.		Collected posttests from intervention and control group	Student interviews and teacher focus group.

For individual interviews with students, a protocol with open-ended questions was developed specifically for this study. The interviews were semi-structured, allowing for some flexibility and deviation from the protocol, and audiotaped for transcription of critical events. The interviews took place in hallways outside of classrooms or in empty classrooms during health periods, at the suggestion of health education teachers. The interviews examined students' feelings and emotional responses to the intervention.

Process Evaluation.

For qualitative data collection related to the formative evaluation, individual interview and focus group protocols were developed specifically for this research. Each focus group and individual interview was audiotaped. Due to teachers' time constraints, about forty minutes were allocated for each focus group interview, while each individual interview lasted no more than one hour. The focus group interviews were conducted in classrooms during a common free period or weekly health education department meeting at each school. The individual interviews took place in offices, conference rooms, or classrooms at the convenience of the professionals and administrators. As with the student interviews, the interviews with staff were conducted within a flexible, semi-structured format. All interviews were taken place in-person.

During the delivery of the AIDS Museum intervention, data were collected by participant observation. In order to document any differences between groups attending the AIDS Museum field trip, the researcher took detailed notes during the intervention to track the amount of time spent on each activity (touring the exhibit and speaking with the artist) and recorded any variations (e.g. teacher involvement, problem students who may have hindered the effectiveness of the intervention). Any questions asked by the students were noted. To address the potential for researcher bias, other graduate students accompanied the researcher during the program and took notes as observers (not participants). Previous studies (such as Estroff, 1981) have combined randomized experiments and participant observation. Maxwell, Bashook, and Sandlow (1986) combined unstructured observation and interviews with a quasi-experiment. An observer-as-participant stance was taken in this study, and the researcher's identity was

known to the subjects (Adler & Adler, 1994). Student emotional responses to the intervention were documented through attention to body language.

Data Analysis

Quantitative.

Although the unit of randomization in this study was the classroom, the unit of analysis was the individual student. Individuals within aggregates may not be independent from each other, and are exposed to common influences other than the intervention (Shadish, Cook, & Campbell, 2002). The analysis adjusts for this by adding school and teacher fixed effects and clustering the standard errors. All analyses were conducted with Stata 11.1. The statistical method is ordinary least squares regression, which is appropriate for the continuous dependent variables in this study (scales and feeling thermometer questions).

The students' pretest scores, demographic characteristics, and cluster information (dichotomous variables for teacher and school) are included as control variables. The demographic controls include race, ethnicity, gender, and grade in school. In New Jersey, risk behaviors among young people vary by these characteristics. For instance, female adolescents are more likely to get tested for HIV compared to male adolescents, older students are more likely to get tested than younger students, and African American and Latino youth are more likely to get tested than Caucasian youth. (Bloustein Center for Survey Research & NJ Department of Education, 2010). Since behaviors vary by age, race, ethnicity, and gender, knowledge and attitudes may also differ based on these characteristics.

Table 5. Variable definitions and descriptive statistics: Independent variables * p<.05			
		Intervention	Comparison
Posttest*	1=posttest, 0=pretest	0.634	0.774
Treatment effect*	posttest x intervention	0.634	0.000
Matched*	1=student completed both pre- and posttests	0.193	0.109
Spanish survey*	1=survey in Spanish, 0=survey in English	0.000	0.051
Male	1=male, 0=other	0.374	0.328
Missing gender*	1=did not answer gender question, 0=answered	0.031	0.080
Latino	1=Latino, 0=other	0.295	0.226
Missing Latino*	1=did not answer Latino question, 0=answered	0.059	0.109
White	1=White, 0=other	0.087	0.102
Mixed race	1=checked more than one race category, 0=other	0.075	0.058
Missing race	1=did not answer race question, 0=answered	0.189	0.175
Asian	1=Asian, 0=other	0.016	0.022
Pacific Islander	1=Native Hawaiian or other Pacific Islander, 0=other	0.031	0.007
American Indian	1=American Indian or Alaska Native, 0=other	0.016	0.000
Lazarus High	1=student at Emma Lazarus High, 0=other	0.146	0.161
Brennan High	1=student at William J. Brennan High, 0=other	0.449	0.416
Rosa Parks High	1=student at Rosa Parks High, 0=other	0.382	0.401
MLK High	1=student at Martin Luther King, Jr. High, 0=other	0.024	0.022
Grade	9=ninth grade, 10=tenth grade, 11=eleventh grade	10.311	10.438

Table 5 shows the variable definitions and descriptive statistics for the independent variables separately for the intervention and comparison groups. Compared to the control group, the intervention group had fewer students who did not list their ethnicity, fewer students who did not indicate their gender. Only a small proportion of

comparison group students completed the surveys in Spanish, while all of the intervention group students completed the surveys in English. More students in the intervention group completed posttests and had matched data for pre- and posttests compared to the control group.

Qualitative.

The focus groups and interviews were transcribed through listening to the recordings, and the data were evaluated through discourse analysis techniques (Chi, 1997; Gee, 2005), with a flexible, coding scheme combining induction and deduction. Manifest and latent content analysis strategies were blended (Berg, 2007). Both what was said and what sorts of connections were made to things outside the current situation were considered (Gee, 2005). When topics discussed by more than one interviewee, their statements were compared and contrasted. The data were coded twice, once with utterances as the unit of analysis (answers to each interview question, or in the case of focus groups, each speaker's turn), and again with sentences as a finer-grained unit of analysis. When coding the student interviews, a bottom-up approach helped identify causal mechanisms for effects of the intervention. When coding the administrator and teacher interviews in a more top-down manner, some codes were based on theory and the policy implementation literature. For instance, factors influencing HIV education were coded as social, political, cultural, economic, or educational. Codes were combined to form themes, and quotes were selected that represented these themes. These are presented in the findings chapters.

Ethical Issues

This study asked minors questions about sensitive issues such as drug use, sexual activity, and HIV/AIDS. Several steps were taken to protect these participants. No names were recorded on the survey instruments or during the interviews. The written survey instruments were blank on the front and back, and students were instructed to fold them in half before turning them in. The survey booklets were kept in a locked drawer in a locked office. The questions asked about attitudes and knowledge, but not specific behaviors. Moreover, answering each individual survey question was voluntary. If participants felt uncomfortable with a question, they could skip it. Additionally, if students felt uncomfortable about the intervention or the surveys, which include questions about knowledge and feelings about AIDS, drug use, and sex, they were advised to see the school psychologist.

This research was approved by the Institutional Review Board (IRB) at both Rutgers University and the Newark Public Schools. Only participants who gave their informed written consent became part of the study. Additionally, students had to obtain their parents' active consent in order to participate. Separate permission was sought for participation and for audiotaping. To further disguise the identities of participants, including teachers and administrators, the schools were assigned pseudonyms.

Chapter 3: Findings of the Process Evaluation

The previous chapter has detailed this study's design and methods. This chapter reports the qualitative findings from the process evaluation, including evidence from interviews, focus groups, and participant observation.

This chapter first discusses how challenges in the City of Newark such as economic, political, policy and social issues affected the implementation of HIV education. External pressures, including an economic recession and local, state, and federal politics and policies, served as barriers or enabling factors for program adoption and implementation. Social factors such as community conditions and demographic characteristics were also relevant to the implementation of this program and other HIV prevention education programs in the Newark schools. The challenges faced in this study are consistent with other university-community partnerships for HIV prevention research.

After exploring the broader context, the next section in this chapter explains the organizational and administrative factors in the schools and the district as a whole that influenced implementation, including the roles of administrators and teachers. The organizational factors that facilitated or impeded the adoption and implementation of the AIDS Museum program were hierarchical structure, school environment, size, and scheduling. Staff turnover was a particular concern. Personal relationships between different actors also facilitated or impeded implementation. The individual initiative of school employees was a contributing factor to implementation. Attitudes such as discomfort with discussing topics related to HIV and sex education were barriers to implementation.

In addition to the city and school environment, those individuals involved in the intervention such as the artists, the students, and their parents also affected the implementation of the AIDS Museum program. Factors related to the intervention itself are discussed in the fourth section.

This chapter concludes by connecting the findings from this study to theories of policy adoption and implementation. Both rational/technocratic and political/cultural theories explain the adoption and implementation of HIV education programs in Newark.

The City

Characteristics of the City of Newark affected the implementation of the AIDS Museum program and HIV education in the school district. First, economic, political, and policy-related factors that affect implementation will be discussed in this section. Next, this section turns to the social issues that facilitate or impede implementation of HIV education. This section concludes by relating some of the challenges faced in this study to the literature about university-community partnerships for HIV prevention.

Economics, Politics and Policies.

The AIDS Museum intervention was implemented during a chaotic time for the Newark Public Schools, in light of the economic recession and the election of a new governor from a different political party. The State of New Jersey took control of the Newark schools in 1995, but the current governor ceded some control over the schools to the mayor of Newark. State aid to the district was cut by \$42.6 million for the 2010-2011 school year (Rundquist, 2010). Although the Newark Public Schools received \$23.7 million in federal aid in September 2010 (Fleisher & Rundquist, 2010), the district reserved all of this money for the following school year (Calefati, 2010). Additionally,

although the founder of the social networking website Facebook, Mark Zuckerberg, announced a \$100 million donation to the Newark Public Schools, the money was not spent during the 2010-2011 academic year (Wahba, 2010).

While macroeconomic conditions contributed to layoffs that affected HIV education program implementation, on a smaller scale lack of funds for the AIDS Museum program was and continues to be a barrier to sustainability. This has also been a challenge for other HIV prevention programs in the district. Because of the uncertainty of future grant funding, administrators have tried to make HIV prevention programs sustainable. However a few employees were skeptical about the ability of the district to do this. In the past, said one administrator, “Whatever the funding source might be, when it's gone, the program is gone.” Funding for HIV prevention programs like distributing condoms was considered unreliable. “We get donations for something like that, but then we run out. Then we're leaving the child in the lurch,” said a supervisor.

Blake et al (2009) found that HIV education implementation was influenced by state-level policies and whether school districts adopted those policies. In the Newark Schools, federal and state-level mandates and curriculum standards seemed to have less influence on the implementation of HIV education and student outcomes. Federal funding of abstinence education was not considered a barrier to HIV education by most stakeholders in the Newark schools because of the state mandate for comprehensive sexuality education. Additionally, the previous governor rejected federal abstinence-only education funding (Raymond et al., 2008).

At the state and district level, the implementation of the HIV education policy has varied. A district administrator said, “From school to school it was very, very different.

So there really has been no ongoing consistent approach to teaching this in the schools even though we have a district policy.” Another district employee said, “It’s very difficult to tell a school what they have to do other than to meet the core curriculum content standards.”

However, federal policies unrelated to HIV education were also seen as creating barriers. The No Child Left Behind Act (NCLB) was mentioned by both teachers and administrators as diverting attention, at least to a certain extent, from fields such as health and art due to the stress on literacy, numeracy, and testing. One administrator said, “With the inordinate amount of attention to testing, the whole child message, which includes health, gets obliterated, and the interpretation in the field is that nothing is more important than math and English.” Another staff member mentioned failing schools and low test scores as competing priorities that keep HIV lower on the agenda. A third district employee noted that barriers to HIV education include, “Bringing the curriculum down to a very specific focus that may be math and literacy, which, you know, is not a bad thing.” She added, “I just think we need to teach interdisciplinary lessons so that kids could be learning about HIV in their literacy lessons and not have it just be a health class or a topic only for health. I think if we ever get there, that would be a way to sustain it long- term.” When asked if the school psychologists play a role in HIV prevention, an administrator said, “Most of the school psychologists are dealing primarily with the testing for evaluation.” These findings are consistent with previous studies of barriers to HIV education (Mueller et al., 2009). On the other hand, one administrator pointed out that NCLB places an emphasis on evidence-based education, which can lead to the adoption of science-driven, effective HIV prevention programs. For better or

worse, NCLB is a federal policy that has had a significant local impact on the implementation and evaluation of curricula and programs, including those in the area of HIV education.

Aside from explicit political and policy influences, consistent with previous research (LaRocque, 1986; Honig, 2006), school administrators perceived factors influencing the implementation of HIV education as political. For instance, during interviews, several administrators were hesitant to discuss barriers to HIV education because they knew the information would be written down or audiotaped. Another administrator was reluctant to implement the program at her school because of concerns that the program should be approved by various stakeholders, including the district's communication office.

Social Factors.

Social factors such as community social conditions and demographic characteristics were also relevant to the implementation of this program and other HIV prevention education programs in the Newark schools. The program was more likely to be implemented in schools with greater numbers of African American students and fewer Latino students. Schools that did or did not implement the program did not differ in terms of students' economic backgrounds (measured by percentage eligible for free or reduced price lunch). Previous studies have found that teachers at schools in which at least 30% of students were eligible for free or reduced price lunch were less likely than those at schools with less than 6% of students in poverty to emphasize contraceptive method ineffectiveness in implementing sex education programs (Landry, Darroch, Singh, & Higgins, 2003). Based on the proxy indicator for poverty in schools,

community financial conditions did not seem to influence variation in program implementation to a great extent.

While the social conditions between schools did not affect variations in program implementation as significantly, the overall social conditions in the City of Newark provided a backdrop that hindered implementation to a greater extent than would have been expected in a different community such as a suburban or rural area or a city facing fewer challenges. Although Newark is severely affected by HIV, other problems were perceived as more important. As a staff member said,

A lot of children, children are not dying of HIV on the news. So it's not perceived as urgent. And there's so many other things that capture our attention I think in this city than HIV education for children. Unfortunately when you have failing schools, and low test scores, and shootings and student deaths, and, you know, you're trying to get someone on the phone, and they're dealing with all this, this is not a priority right now. And I think that in any school district, and if you want to be specific urban, where there are issues of violence or poverty or things like that.

These competing priorities were social issues that have hindered implementation of HIV education programs in Newark schools. The reduced visibility of the problem of HIV was also noted as a barrier to education. Due to the time that has lapsed since the beginning of the epidemic, and the availability of medicines to prolong the lives of people with HIV may have reduced the sense of urgency. An administrator said, "I don't know if we've just become complacent." Others reiterated the idea that these problems are common to other urban areas, not just Newark. For instance, when asked about challenges to implementation of HIV education, another district administrator said, "The obstacles that are probably endemic of urban public education."

The high rate of HIV and related social problems in Newark was another issue related to student responses to the intervention. Many students could relate the images

and themes expressed in the art to their daily lives. Some images generated surprising reactions. For instance, one painting showed a man with his hand in a pose that was intended by the artist to represent meditation or blessing. A few students however, thought this looked like a gang sign. Recalling a painting of a homeless injection drug user from the exhibit, a student said, “You can’t tell if a person has AIDS or not. I see people on the ground all the time. They could be poor. They could have a disease. They don’t have anywhere to live.”

In addition to gang activity and homelessness, drug use is another major problem in the community that leads to the spread of HIV. A district administrator said, “Heroin on the streets here is considered to be the most pure in the country. It’s not just sexual transmission, it’s drug use.” The Drug Enforcement Administration Newark Division has reported that heroin seized in northern New Jersey had an average purity higher than 70%, and heroin use in New Jersey is twice the national average (National Drug Intelligence Center, 2004; Buckley, 2009).

Many students in Newark have been affected by HIV personally. This stands in contrast to the lack of visibility of children dying of AIDS mentioned by the administrator cited above. In one classroom, a student shared that her mother had HIV. When she was born, she tested positive for HIV antibodies but later found out she did not have the infection. During the intervention, at least one student in each class disclosed that they knew someone with HIV. Through the individual interviews, even more students said they were affected in some way by HIV. Students were asked how they have learned about HIV in and outside of school. One girl said, “I hear about it around my surroundings. My best friend’s mom has it.” Another girl said, “I see people every

day suffering from HIV. My cousin was born with it from my aunt and she got it from a guy. His younger brother has to get tested every six months to make sure he doesn't have it."

District administrators expressed concerns about children infected and affected by HIV. "A lot have been exposed to early grief having lost their parents. Not because they themselves have the illness but because they're the children left behind." According to policy, students with HIV (or their parents) are not required to disclose to the school if they are HIV-positive (N.J.S.A. 26:5C-1 et seq.). However, some students have chosen to disclose to nurses or social workers, who can assist them or refer them to support services. Several employees mentioned it is difficult to help these students because of privacy concerns.

A final social issue that should be noted that influenced the climate in which the intervention took place was homophobia in the community. There have been efforts to create programs for gay and lesbian youth in Newark, particularly in light of the murder of a lesbian teenager in a hate crime in 2003 (Carter, 2009). Although Newark schools have increased staff training on how to respond to the concerns of gay and lesbian students, policies still create barriers. For instance, students are not allowed to wear rainbow-colored accessories as symbols of gay pride, due to rules designed to ban gang colors (O'Crowley, 2004). Religious and cultural biases against homosexuality in the community, however, did not affect the AIDS Museum program as much as could be expected. Some students mentioned that they or their family members thought that only gay men could get AIDS. Images in the exhibit of different types of people with AIDS helped to contradict this perception. Additionally, one of the artists living with HIV who

came to a school as part of the program was a heterosexual man who discussed his wife and children. Another artist was a heterosexual woman who discussed dating and marriage after getting HIV. Furthermore, due to the high rate of HIV transmission through injection drug use in Newark, the myth that AIDS is a gay disease is refuted in the daily experience of many of the students.

These economic, political, policy, and social issues affected implementation of the AIDS Museum program. In a different city or a different time period, the program may have been more or less effective due to the circumstances.

University-Community Partnerships.

Academics have noted it can be difficult eliciting support for an intervention from the community (Forman et al., 2009). The adoption process for this program was initiated by the intervention founder (the researcher). First, the health education department chairs at several Newark public high schools were approached, and a few gave their approval. Then, Rutgers University Institutional Review Board approval was obtained. Additionally, the researcher met with the Newark Public School district Executive Assistant for Innovation and Change, who expressed support of the intervention. Then, Newark Public Schools Institutional Review Board approval was obtained. One change in implementation plans was requested by the district. Although the program initially called for students visiting the AIDS Museum offsite as a field trip, due to budget cuts, field trips were eliminated for the 2010-2011 school year. Instead, the AIDS Museum exhibit travelled to each school. However, several students expressed interest in going on a field trip instead of having an in-class exhibit and presentation. Throughout the study, the development of the Newark Schools Research Collaborative

facilitated access and cooperation of schools and individuals. Many people in the district were aware and supportive of research done by Rutgers-affiliated students and faculty.

Challenges that arose in this study are consistent with other problems faced by researchers involved in university-community partnerships (Baptiste, Paikoff, McKay, Madison-Boyd, Coleman, & Bell, 2005). For instance, at one school with a predominately African American student body and staff, the teachers were particularly concerned about denying students in the control group access to the AIDS Museum program. The school implemented the program with the comparison/control design, but more communication was required to explain why some students would not be in the program immediately. The school was promised that after the study, the control group students would be able to participate.

The Schools

Within the schools, organizational and administrative issues affected the implementation of HIV education. The roles of administrators, teachers, and staff in carrying out policies and delivering services related to HIV prevention are discussed in this section.

Organizational Factors.

The organizational factors that facilitated or impeded the adoption and implementation of the AIDS Museum program were hierarchical structure, school environment, size, and scheduling. As several researchers have discussed, including Moynihan and Pandey (2007), organizational institutions and red tape may hinder effectiveness. In focus groups, teachers noted institutional barriers to implementing HIV education such as the curriculum and text book, which are determined at a higher level,

leaving less discretion to the teachers. For instance, several teachers mentioned that since driver education was emphasized during health in eleventh grade, it was difficult to focus on other issues such as HIV.

There were also obstacles created by confusion about proper channels of approval. For example, at one high school, the department chair seemed interested in the program at first. Then there were concerns about needing to coordinate through the guidance office because that office dealt with all university-sponsored programs. At this point, to avoid too many schools for the program capacity, it was decided to not pursue this high school as a partner.

District employees noted several implementation challenges for HIV education due to structural and organizational factors. "We have to follow the chain of command," an administrator said, and "There is a hierarchy that must be followed."

School environment also influenced both program adoption and implementation. At one of the high schools originally slated to participate in the study, conditions were too problematic and unsafe to carry out the program. Student schedules were not ready at the beginning of the school year. Newark police were called to the school on more than 20 occasions during the first 25 days of school. The school principal resigned one month into the school year (Giambusso & Calefati, 2010).

At other schools, the environment did not hinder program adoption but did influence how (and how well) the program was implemented. In one school there were not enough desks for the students. In other classrooms, there were so many desks that it was difficult for students to come up and look at the artwork. One program was held in an auditorium with very low lighting because many of the lights were broken. In a focus

group, teachers at that school requested that the program be conducted in a classroom in the future because the size of the auditorium also led students to spread out and talk more amongst themselves, which took attention away from the program. In one classroom, the radiator was very noisy. Other classrooms were very warm or very cold. In one school, the teachers had to walk through the classroom to get to the department chair's office, which made for a lot of interruptions. Also, one of the teachers sold sports drinks out of the office, so students from other classes were frequently walking through the room to buy drinks. Some schools were situated in unsafe or unpleasant areas. For example, one high school is surrounded by a cemetery on one side, a vacant lot on another side, and, across the street, vacant buildings covered in graffiti with many broken windows.

Another school was in the process of moving to a new building, so movers were walking in and out of classrooms and the school building. One school did not have internet. One classroom had a smart board, but the computer hooked up to it could not play DVDs. One of the artists showed a video using a separate DVD player, but the sound was low.

Aside from structure and environment, size may be another organizational factor that contributes to the adoption and implementation of HIV education programs. Based on findings from interviews, Newark Public Schools administrators believe that the size of the Newark Public School district and individual class size influence the implementation of HIV education programs, but school size is not important. According to two administrators, the size of the district and the fact that there are so many schools has led to inconsistent implementation of HIV education. Additionally, larger classes are unmanageable for HIV education. Teachers noted an advantage of small classes was that

two teachers could work together to implement the AIDS Museum program in their classes during the same time period.

Contrary to findings from administrator interviews, the experience of implementing the AIDS Museum program suggests that school size does matter. Smaller schools (less than 600 students) and larger schools (with over 1000 students) were more likely to implement the program, whereas mid-sized schools with about 800 students were less likely to implement the program. Other researchers have found that teachers at schools with at least 1,000 students are less likely to teach abstinence as the only option for HIV prevention compared to teachers at small schools with less than 300 students (Landry, Darroch, Singh, & Higgins, 2003). The mechanism through which school size affects program adoption and implementation is unclear. Perhaps small schools are more manageable and large schools have extra staff and resources, but mid-sized schools lack these advantages. Findings from this dissertation suggest that school size influences not only how teachers teach HIV education but whether outside HIV prevention programs are incorporated into the classroom.

Scheduling also varied by school and affected how the AIDS Museum program was implemented. In one school, students took health for two weeks then physical education for two weeks, alternating throughout the school year. The class periods lasted forty minutes. This was too short to complete each activity. All of the other schools had block scheduling in various forms. The class periods lasted eighty minutes. This was too long to hold students' attention. A number of students thought there should be more time spent on the program. One student said, "It wasn't a lot that you taught us really 'cause there wasn't, you know, much you could really say in one period. So like it'd be good if it

was like a whole lesson or like, maybe a few more days.” Two teachers, on the other hand, said they would prefer to complete nearly the entire program, including pre- and posttests, exhibit, and discussion with the artist, in one eighty-minute block. An unusual number of weather-related delays, early dismissals, and cancellations also hindered program implementation. There was no consensus among teachers and staff about whether traditional or block scheduling or some alternative was best for HIV education. One staff member said, “I don’t know if it’s better that the kids meet every day. I think they get bored of it a little bit maybe.”

Alternative explanations related to organizational factors were considered potential predictors of adopting the AIDS Museum program, but the evidence was inconclusive. One possibility was that schools already implementing AIDS education programs would be more likely to adopt the AIDS Museum program. However, there is no clear pattern in the data. Four schools with Teen PEP programs also adopted the AIDS Museum program. Three schools with Teen PEP programs did not adopt the AIDS Museum program. One school that did not have a Teen PEP program adopted the AIDS Museum program. However, the organizational factors such as hierarchical structure, setting, size, and scheduling did seem to influence implementation in this case. This section now turns to the school stakeholders who facilitated or impeded the adoption and implementation of the AIDS Museum program and who generally influence HIV prevention education in the district.

School Leaders: Principals and Department Chairs.

Previous research has found that principals are key to program success (Forman, Olin, Hoagwood, Crowe, & Saka, 2009; Mueller et al., 2009; Kam, Greenberg, & Walls,

2003). For the AIDS Museum HIV education program, principal approval was not a guarantee of success, but principal disapproval was a guarantee of failure. One principal refused to allow the school to participate in the program. In a second school, the principal initially agreed, then pulled the school out of the program, citing logistical difficulties. Only one school principal met with the researcher once. The principals may not even have been aware that the program was taking place in their schools.

Bottom-up approval and implementation occurred when the department chair asked the principal for approval, the principal approved the program, and there was no contact after that. Staff perceived that the principals were relieved that teachers or department chairs worked out logistical issues to make sure the program was feasible before going to them for approval. However, other principals did not want representatives from HIV prevention programs to go through teachers or department chairs first rather than themselves. This created problems that may have led to some principals rejecting the program.

Although principals were not directly involved in the AIDS Museum study, interviews revealed that the principals are responsible for determining other structural factors that influenced implementation. For instance, principals are responsible for scheduling and for staff development.

In addition to principals, health education department chairs were key administrative actors in the implementation of this program. In most cases, the department chairs selected the grade level that would participate in the program. The reasons they cited for choosing particular grades included the maturity levels of the students and the grade level curriculum. In other cases, particular teachers who were

interested in the program or who were recommended by the department chairs only taught particular grades.

The department chairs at times created barriers to program implementation. One department chair was concerned about whether the program had been approved through proper channels, and her school did not participate in the program. This department chair even expressed her concerns in an email to a department chair at a different school, which agreed to host the program but later backed out. Department chairs may have never distributed student permission slips to some of the teachers. In three schools, department chairs were out for part of the semester or more because of medical or other reasons. In these cases, the schools either did not have department chairs, or teachers were filling in for the job, or the department chair was officially there but was not very involved.

Many department chairs facilitated the implementation of the program by communicating regularly. For example, they provided their cell phone numbers to the researcher, met during their free periods and before and after school, emphasized the importance of the program to their teachers, and observed the program in order to make suggestions for improvements.

In the Newark Public Schools, most department chairs for health education were also responsible for other subjects. At Rosa Parks High School, the department chair was responsible for physical education, health, and performing arts. Similarly, at Sojourner Truth High School, the department chair was responsible for physical education, health, music, and art. The department chair at Benjamin Banneker High School covered art, physical education, music, and social studies. At Emma Lazarus High School and Martin Luther King, Jr. High School, the school websites listed the department chairs as in

charge of physical education, but in practice, these department chairs were also responsible for health. At Ilka Tanya Payan High School and Paul Robeson High School, the department chairs were also responsible for physical education and health. At Booker T. Washington High School, a Vice Principal was in charge of health education (among other responsibilities) rather than a department chair. At William J. Brennan, Jr. High School, there was a health education department chair, but the researcher only met her once because the teachers took initiative and responsibility for the program. Although department chairs who were responsible for three or more subjects often had less time to work with the researcher on the AIDS Museum program, this was not necessarily a factor in the success of the program. In two schools in which the department chair was only responsible for two subjects, physical education and health, the AIDS Museum program was never adopted or implemented.

Teachers.

Other than managers such as principals and department chairs, teachers also facilitated or impeded implementation of HIV education. Previous studies (e.g. Forman, Olin, Hoagwood, Crowe, & Saka, 2009; Mathews, Boon, Flisher, & Schaatma, 2006; Landry, Darroch, Singh, & Higgins, 2003) have found teacher support or characteristics to be key to the success of program implementation. Some teachers facilitated program implementation by integrating the program with optional assignments, such as writing ten things learned from the speaker. Others had a good rapport with the students or helpful suggestions for classroom management styles. Teachers themselves also perceived teacher quality as a facilitator to program implementation. Two teachers said, for example if a teacher has control over the class, the program will run well despite

challenges posed by working with immature students or in a less than ideal setting such as an auditorium. An administrator said that one barrier to implementing HIV education is teachers' lack of knowledge about and comfort with the topic.

At times teachers seemed to have negative attitudes toward their students or toward each other, which created a difficult environment for program implementation. Occasionally one teacher would make disparaging remarks about another teacher. If their classes were participating in the programs at the same time, one or both teachers would be disengaged. In at least one instance, a teacher tried to prevent another teacher from finding out about the program. Some teachers seemed to have poor relationships with the department chair. While department chairs may not have distributed consent forms to the teachers, teachers also may not have handed out the permission slips to their students. When students reported not receiving the forms, it was difficult to determine where the breakdown in the chain of communication occurred. During the program, some teachers did not pay attention. Some made remarks that were interruptions and not very relevant.

Support Staff.

Support staff were not involved in the AIDS Museum program, but they were involved in HIV prevention more broadly in the district. There is potential for greater collaboration. For instance, two middle school social workers facilitated contact with schools at which the researcher gave related presentations to students or staff. School nurses and social workers also give presentations themselves to teachers and students about HIV prevention.

Interviews with social workers showed a propensity toward evidence-based programs. A social worker said regarding HIV prevention coordination in the district,

“The designated coordinator is a national model that has been proven to work. It's an evidence-based practice. If you have a person designated to cover a particular area you will do better with whatever the project is, but especially with prevention.” Speaking about an HIV education program offered by a different nonprofit organization, she said, “They might have a volunteer who wanted to come in, but it was almost a scared straight type approach, which in research has been proven not to work. A person might say ‘look at me. Don't do this. It is not exactly the approach I think kids do their best learning.’” This suggests, as the literature indicates, that social workers as professionals favor a learning approach to HIV prevention.

Turnover.

The turnover of professional staff, teachers, and administrators created barriers to AIDS Museum program adoption and implementation. On June 30, 2010, 194 school employees were laid off by the Newark Public Schools (Galante, 2010). In addition to the turnover due to layoffs, Newark and other school districts throughout the state "saw unprecedented and unexpected levels of teacher retirement" (Calefati, 2010). A district administrator said, “Because of the economy, this whole office has been obliterated. There's only a few of us now, when every room here was taken up before.”

At Emma Lazarus High School, the AIDS Museum program was approved by the department chair at the end of the 2009-2010 school year. He was on medical leave throughout the 2010-2011 school year. A temporary department chair and assistant department chair were assigned instead. Similarly, at Ilka Tanya Payan High School, the program was approved by the department chair at the end of the 2009-2010 school year, but that department chair went on medical leave shortly after the beginning of the 2010-

2011 school year. Additionally, at Ilka Tanya Payan High, one of the teachers whose classes would have participated in the program was laid off at the end of the 2009-2010 school year, then rehired for 2010-2011, which limited the extent to which the program could be planned out in advance. However, the program was abandoned at this school for other reasons. At Rosa Parks High School, the program was approved by the department chair at the end of the 2009-2010 school year. He retired, and a new department chair started for the 2010-2011 academic year. This was also the case at Sarah Vaughn High School. However, while the program was implemented at Rosa Parks High School, it was not implemented at Sarah Vaughn High School. Thus there is no clear pattern as to whether turnover of department chairs is a strong influence on program implementation. Turnover led to difficulties in contacting new staff and seeking approval a second time, but did not necessarily stop the program from taking place.

Turnover has affected not only implementation of the AIDS Museum program, but also the implementation of HIV education in general in the district. For instance, with funds from a CDC grant, Student Assistance Coordinators were trained to help middle school physical education teachers deliver HIV education to middle school students. Then, all of these coordinators were laid off. One individual who worked on HIV prevention initiatives left to go back to teaching, and this delayed implementation of a program. Speaking about another HIV prevention program offered to the Newark Public Schools staff by Montclair State University, a district employee said, "Were it not for attrition or people moving around that might have been an opportunity to get a stabilized systematic approach to teaching about HIV/AIDS and sexuality."

As noted above, there were many retirements in the district. When the director of health, physical education, and athletics retired, the new director took time to adjust and, to an extent, institutional memory was lost. A district administrator noted that superintendent turnover also created challenges. On August 31, 2010, Newark schools superintendent Clifford Janey (who was appointed in 2008 by the previous governor) was told that his contract would not be renewed; Janey remained superintendent through the fall semester, but announced his resignation on January 18, 2011, effective the first week of February, 2011 (Associated Press, 2011). Administrators noted that when leadership changed, they had to explain the program to the new superintendent and other staff and, depending on the situation, possibly wait for their approval for specific actions.

Staff turnover also creates difficulties because personal connections seem to be important for HIV prevention program implementation. For instance, knowing someone in a government office may lead to learning about a grant opportunity for HIV prevention. A district administrator said, “The development of the relationship with the state department worked because I know [the contact person there]. We used to work together.” When initiating a grant-funded HIV prevention program at a school, an employee said, “I had a good relationship with my coworkers. I called the department chair.” When turnover occurs, these personal relationships cannot facilitate HIV prevention program implementation.

Discretion.

Since policies regarding HIV prevention were inconsistently enforced in the district, district administrators believed that a lot of discretion was left to the individual initiative of staff members. One staff supervisor said regarding an AIDS awareness

week, “We did have people who were very, very interested in taking the posters and making sure that the information was disseminated.” In contrast, another barrier to implementing HIV education is discomfort with talking about topics related to sexual activity and drug use. A staff member said of the HIV education curriculum, “I’m sure as the lesson plans get rolled out there will be a lot of conversations that may be uncomfortable.” A supervisor noted, “Every individual is different. Some of us will talk about anything, and others will not.” Another district administrator concurred, saying, “Some people are very uncomfortable with topics like this.” A fourth administrator said staff development is needed to get people more comfortable talking about it.

The Intervention

In addition to school and district employees, other individuals who influenced program outcomes were artists, students, and parents. The artists at times created challenges if they were late to the program or cancelled at the last minute. Scheduling was difficult. However, artists also contributed to the success of the program. As described in the previous section, many students expressed interest and gratitude toward the artists for sharing their work and their stories. In one school where the department chair requested that the research be completed without waiting to schedule a visit from artist, the teachers said they thought that the students would have benefited from meeting an artist. Students themselves who did not have the opportunity to meet the artists mentioned in interviews that they would have liked to hear their perspectives on the artwork.

Students also presented challenges for program implementation. Tardiness and absenteeism were often problems. A number of students were absent on the days of one

or both of the survey administrations and/or the intervention itself. Among those students who were present, although many students were attentive during the program (as demonstrated by moving to the edge of their seats, nodding while others were speaking, and talking about which art pieces were most meaningful to them), others put their heads down on their desks, looked at their cell phones, passed notes, and held side conversations. Some students laughed when graphic subjects were discussed. One teacher was hesitant to have one particular class participate because he said “They’re a low-functioning group.”

Another issue was that many students did not return their parental consent forms (as has been the case in many other studies on HIV prevention in schools, such as Mueller et al., 2009). One surprising means of encouraging students to return consent forms and participate in the survey was explaining more about what a dissertation is and how to get a doctoral degree in general. Many of the students planned to go to college, and when the researcher explained that the PhD program required nine years postsecondary education, the students wanted to help in the fulfillment of this goal. For example, a student who was initially reluctant to take the survey because he preferred to work on another assignment during the class period said he would take the survey because he wanted to help the researcher graduate. This suggests researchers may not need to provide material or monetary incentives to students for participating, but rather explain how the students will be helping the researcher by participating.

Another challenge was students’ lack of basic knowledge about HIV and other sexual health issues prior to the AIDS Museum intervention. This has been a factor in the implementation of other HIV prevention curricula (Mueller et al., 2009). Discussions

were frequently sidetracked because of the need to cover basic facts or address student questions. One teacher said, “There’s just so many things they don’t know. You asked them ‘what does HIV mean?’ Surprisingly, they don’t know the definition.” Another teacher said of the AIDS Museum program, “Only the material that was presented could they judge from. They didn’t really have prior knowledge.”

This lack of prior knowledge may have been due to challenges to implementing HIV education in the district overall. Although the policy is to teach HIV education throughout many grade levels, students and teachers reported that this was not happening. One student said about HIV, “Well I never really knew a lot about it until, well yeah pretty much until you came and taught us about it.” Another student said, “We’ve hit the topic, but we haven’t really gotten into depth. But with what you guys have established, I’ve learned a lot.” A third student said, “A little bit about it. It was nothing serious. It, like, never was important. Like, I don’t know how to put it in words. I didn’t think of it much.” However, a few students reported learning about HIV in middle school.

Administrators confirmed reports that HIV education was implemented inconsistently at the junior high level. One administrator said, “What we would want is the opportunity to teach comprehensive sex ed and health in the middle schools. It just doesn’t happen the way it should.” Another said, “Sixteen clock hours are supposed to be taught every year, but that policy is not enforced consistently if at all.”

Outside of class, several students reported talking with friends or family members about HIV. However, some of them thought it would be better to learn more about the topic in school. One boy said, “They may say ‘oh this is what it is’, but it’s not really as informative as if it was actually taught in school.”

In addition to students, parents can facilitate or impede the implementation of HIV prevention. Administrators considered lack of parent involvement a barrier to implementing HIV education. In addition to the challenge of uninvolved parents, other parents disapproved of HIV education for their children. A district supervisor said,

I think another challenge is the community that doesn't want to acknowledge that our kids do have early sexual behaviors even in middle school. And so there's been a real resistance to having this gain traction or high visibility. I think we're better now than we've ever been. It's 2011, but in the early days there was some concern that parents would not want this taught even though we have a mandate in New Jersey.

A teacher said, "You still have those parents who are going to balk about it...They don't want to teach it. They don't want us to teach it. They don't want you to teach it."

A supervisor said, "If you're going to speak to the children, you have to speak to the parents. And that can be very difficult. It's one thing to tell a fifteen year old something and to have a thirty year old father in the room. A fairly young parent. And you understand and respect what they do and don't want for their child."

The AIDS Museum program faced both the challenge of lack of parental involvement and negative parent attitudes toward HIV education in schools. A few parents refused permission for the AIDS Museum program, while many others did not return the consent forms.

Policy Adoption and Implementation Theory

Reasons given for schools not adopting the AIDS Museum program were fairly consistent with a rational/technocratic framework (Julnes & Holzer, 2001). For instance, lack of resources due to staff cutbacks was cited by principals and department chairs as a reason. The rational/technocratic framework also includes information, knowledge, and training. In the case of HIV education in Newark, this rational/technocratic explanation

applies to implementation rather than adoption of HIV education. Many health teachers have not received training in HIV education. This was one issue addressed through the CDC HIV Prevention grant at the middle school level. However, no comparable program exists at the high school level in Newark for teacher training. High school teachers said they had not received training on HIV education, except in another school district. Some physical education teachers are not health certified. The social workers have not received training in HIV prevention. Many employees who have been trained have since left the district through retirement or layoffs.

Goal orientation and consensus are also attributes of the rational/technocratic model. Inconsistencies between broader policy goals such as improving math and literacy have conflicted with HIV prevention mandates in the district. In this case, contrary to previous research, goal orientation and lack of consensus affected policy implementation rather than policy adoption.

Political/cultural factors also affected the implementation of HIV education. Interest groups such as unions have influenced the delivery of HIV prevention services in the district. Since the SAC positions were eliminated, district employees expressed the expectation that school social workers would take over HIV education activities.

However, according to an administrator,

There's been some pushback around the fact that they felt they were absorbing duties from another group that had been terminated and they were not being compensated or that it had not been negotiated with their union. So that's another barrier.

In contrast, the relative absence of external interest groups pushing for HIV education hindered implementation. A district employee said, "We don't have a consistent community group that I can think of that's advocating for this in the community." As

previously mentioned, attitudes among stakeholders toward each other and toward HIV education could facilitate or impede the adoption and implementation of the AIDS Museum program as well as the implementation of district and state HIV education policies. In this case, the rational/technocratic framework can help explain both policy adoption and implementation, while the political/cultural framework also partially explains implementation and AIDS Museum program adoption.

Taking a top-down implementation perspective to analyze HIV education service delivery in the Newark Public Schools (Sabatier, 1986; Sabatier & Mazmanian, 1979), several of the preconditions for successful implementation were weak during the time period of this study. According to district administrators, the current legal structure does not enhance compliance with state mandates for HIV education. Commitment and skill of implementers, including teachers, nurses, and social workers, also are perceived to be important factors in HIV education. Support from interest groups has been fairly low. Executive principals, including the governor, have not shown high levels of support for the issue. Changes in socioeconomic conditions in light of the financial crisis changed to undermine support of education programs other than literacy and numeracy, including arts, field trips, and health.

From a bottom-up perspective, the findings from the study seem to partially contradict recommendations based on backward mapping (Elmore, 1980). On the one hand, administrators perceive a great deal of discretion at the level closest to the problem. With this discretion, teachers and professional staff have the authority to implement HIV education as they choose. On the other hand, less motivated street level bureaucrats or those who stress other health issues (one mentioned in particular was obesity) often fail to

implement HIV education. Additionally, since responsibility for HIV education is diffused among teachers, nurses, and social workers, there may be a perception by some employees that it is not their job, or that someone else will do it. In contrast, some teachers and administrators saw constraints on their discretion as limiting their ability to deliver HIV prevention services. Federal policies such as NCLB do seem to influence actors at other levels, contrary to the assumptions of backward mapping. Grants from other levels of government or the lack of such funding also influenced whether HIV education programs were delivered. Others expressed the view that principals as mid-level managers have the most discretion, rather than policymakers or frontline workers. A supervisor said, “The district sets the template but because different people have different situations, they ask for modifications, and they’re granted those modifications.” The importance of the department chair in this implementation study confirms Elmore’s (1980) argument that the knowledge and abilities of lower-level administrators are key to program success. Further, as interviews in this study revealed, relationships between actors involved in HIV prevention in the Newark schools facilitated implementation. Again, Elmore’s framework that emphasizes the relationships among actors at various levels of the policy process explains the nature of implementation in this process. Given the evidence from the study, a combined top-down and bottom-up approach seems most appropriate for studying the implementation of HIV education programs.

This chapter has discussed the findings from the process evaluation including personal, social, organizational, economic, political, and policy influences on the implementation of HIV education. The next chapter reports on the findings of the outcome evaluation.

Chapter 4: Findings of the Outcome Evaluation

Related to the outcome evaluation, this section will cover descriptive statistics, results of regression analyses, and qualitative findings from student interviews. A total of 327 students completed the survey, with 205 in the intervention group and 122 in the comparison group. Interviews were conducted with 15 students.

Descriptive Statistics

Table 6 shows descriptive statistics for the dependent variables, the HIV Prevention Attitude Scale and the AIDS Knowledge Questionnaire. The means are shown separately for the intervention and comparison groups at pretest and posttest.

	Min.	Max.	Pretest		Posttest	
			Intervention	Comparison	Intervention	Comparison
			Mean	Mean	Mean	Mean
Knowledge						
Average	1	5	3.562* n=93	4.011* n=31	3.788 n=157	3.673 n=105
Total	0	21	8.333* n=81	11.63* n=27	10.26 n=154	9.392 n=97
Percent	0	1	0.402* n=93	0.56* n=31	0.498 n=157	0.475 n=105
Attitude						
Average	1	5	4.088 n=86	4.185 n=28	3.955 n=157	4.042 n=103
Total	15	75	61.631 n=84	63.148 n=27	59.288 n=153	61.059 n=101

The two scales in this study were scored in different ways to assess the robustness of the findings. In all models, higher scores indicate greater levels of knowledge about HIV or more positive attitudes toward HIV prevention behaviors or people with HIV.

For knowledge, in the models labeled “average,” the scale was scored by assigning five points if the student answered “definitely true” or “definitely false” when

that was the correct answer, four points if the students answered “probably true” or “probably false” when that was the correct choice, three points if the students answered “don’t know,” two points for “probably true” or “probably false” if that was the incorrect option, and one point for “definitely true” or “definitely false” incorrect answers. These responses were then averaged.

In the models labeled “total,” a score of one or zero was assigned to each item, with one representing an answer of “definitely true” or “definitely false” when that was correct. Missing items were assigned a score of zero. Those surveys with more than four skipped items were excluded from the analysis. In these models, for example, a student who answered ten questions correctly, ten questions incorrectly, and skipped one question would receive a score of ten. The reason for assigning scores in this way was to account for guesses or borderline knowledge.

For the models labeled percent, the dependent variable represents the percentage of items answered correctly (i.e. “definitely true” or “definitely false” when the statement was true or false, respectively). So if a student answered only ten out of 21 questions, but all ten of these were correct, the student’s score would be one (100%). This scoring procedure addressed the possibility that missing data was due to students feeling uncomfortable answering rather than not knowing the answer.

For attitudes, in the models labeled “average,” the scale was scored by taking the average score for each question that was answered. Five points were assigned to a response of “strongly agree” if the statement reflected a positive attitude toward people with HIV or HIV prevention activities, four points for “agree,” three points for

“undecided,” two points for “disagree,” and one point for “strongly disagree.” Reverse coding was applied to negative statements.

In the models labeled “total,” points for each item were assigned in the same way but were added rather than averaged. Those questionnaires with more than four skipped items were excluded from the models labeled “total.” For those with fewer than four skipped items, the missing data was replaced with the median score on the question for that type of test (pre- or post-) and group (intervention or comparison).

Regression Analyses

The following equation depicts the research design for the matched pre- and post-test analyses:

$$Y_{ij} = \alpha + \beta_0 T_{ij} + \beta_1 X_{ij} + \sum \gamma_k T_k + \sum \gamma_k C_k + \sum \gamma_k S_k + e_j + \epsilon_{ij}$$

The dependent variables are the knowledge and attitudes about HIV (Y) of students (i) within clusters/classrooms (j). The mean outcome for the control group is α . β_0 represents the true program impact. $T_{ij} = 1$ for intervention-group members and 0 for control-group members. X_{ij} is a set of covariates including each student’s pretest score, race, ethnicity, gender, and age. T_k is a dichotomous variable for every block (teacher) but one, specifying the coefficient γ_k for each block as a fixed effect, which improves precision. School fixed effects ($\sum \gamma_k S_k$) and classroom fixed effects ($\sum \gamma_k C_k$) are also included in the model. The conditional error terms for each cluster (e_j) and each individual (ϵ_{ij}) represent the unexplained variation between and within clusters after controlling for the covariates. This equation represents the ideal analysis. Problems in implementing the study and obtaining data limited the ability to incorporate certain fixed effects and covariates.

Table 7. Difference in differences analysis of the relationship between participating in the AIDS Museum program and student scores on the AIDS Knowledge Questionnaire using ordinary least squares regression. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1								
	Average			Total			Percent	
Posttest	-0.187	(0.131)		-1.360	(1.143)		-0.020	(0.054)
Intervention	0.368	(0.421)		3.995	(3.573)		0.176	(0.173)
Treatment effect	0.345**	(0.151)		3.434***	(1.312)		0.112*	(0.062)
Matched	0.143	(0.093)		0.509	(0.764)		0.030	(0.038)
Spanish survey	0.072	(0.322)		0.136	(2.603)		0.021	(0.132)
Male	-0.051	(0.062)		0.079	(0.516)		-0.005	(0.025)
Missing gender	0.140	(0.237)		1.595	(1.980)		0.125	(0.097)
Latino	-0.023	(0.091)		0.712	(0.768)		0.020	(0.037)
Missing Latino	-0.093	(0.181)		-0.115	(1.470)		-0.017	(0.074)
White	-0.065	(0.137)		0.104	(1.174)		0.003	(0.056)
Mixed race	0.132	(0.117)		2.495**	(0.990)		0.0988**	(0.048)
Missing race	-0.051	(0.118)		-1.503	(0.978)		-0.070	(0.048)
Asian	-0.191	(0.224)		-0.484	(1.817)		-0.034	(0.092)
Pacific Islander	-0.147	(0.219)		-1.621	(1.788)		-0.098	(0.090)
American Indian	0.055	(0.284)		0.425	(2.303)		0.038	(0.116)
Lazarus High	0.039	(0.342)		-3.492	(2.954)		-0.105	(0.140)
Brennan High	-0.679	(0.436)		-4.578	(3.705)		-0.246	(0.178)
Grade (9-11th)	0.247	(0.171)		1.827	(1.409)		0.127*	(0.070)
Teacher 4	0.268	(0.288)		2.924	(2.431)		0.195*	(0.118)
Teacher 5	0.645	(0.497)		10.02**	(4.148)		0.412**	(0.204)
Teacher 6	-0.424	(0.351)		-0.465	(2.842)		-0.024	(0.144)
Teacher 9	-0.047	(0.196)		1.469	(1.669)		-0.017	(0.080)
Classroom 6	-0.867	(0.536)		-9.653**	(4.452)		-0.388*	(0.220)
Classroom 7	0.016	(0.509)		2.095	(4.295)		-0.023	(0.209)
Classroom 9	1.033**	(0.431)		9.115**	(3.635)		0.381**	(0.177)
Classroom 11	0.574**	(0.226)		4.094**	(1.863)		0.242***	(0.093)
Classroom 12	0.323	(0.219)		0.853	(1.820)		0.108	(0.090)
Classroom 13	1.117**	(0.566)		7.836*	(4.716)		0.396*	(0.232)
Classroom 15	-0.651	(0.443)		-8.193**	(3.717)		-0.343*	(0.181)
Classroom 16	-0.696	(0.436)		-6.005	(3.713)		-0.300*	(0.178)
Classroom 17	-0.530	(0.441)		-7.005*	(3.702)		-0.294	(0.180)
Classroom 18	0.088	(0.199)		-0.489	(1.633)		0.022	(0.082)
Classroom 20	0.511	(0.542)		5.159	(4.544)		0.161	(0.222)
Constant	1.106	(1.861)		-10.870	(15.260)		-0.900	(0.762)
Observations	385			358			385	
R-squared	0.152			0.215			0.188	

Table 8. Ordinary least squares regression analysis of the relationship between participating in the AIDS Museum program and student scores on the AIDS Knowledge Questionnaire with matched pre- and posttests								
	Average			Total			Percent	
Treatment effect	0.767**	(0.328)		9.487***	(2.688)		0.345***	(0.124)
Pretest score	0.456***	(0.132)		0.791***	(0.167)		0.735***	(0.148)
Male	0.054	(0.155)		1.492	(1.347)		0.035	(0.062)
Latino	0.167	(0.235)		-0.597	(2.480)		0.017	(0.094)
White	-0.054	(0.308)		2.528	(3.514)		-0.020	(0.122)
Mixed race	0.217	(0.241)		3.299	(2.198)		0.120	(0.096)
Missing race	-0.144	(0.329)		2.424	(3.289)		0.036	(0.134)
Pacific Islander	-0.180	(0.593)		2.437	(5.377)		0.035	(0.242)
American Indian	0.199	(0.556)		1.135	(4.508)		0.040	(0.220)
Brennan High	0.216	(0.461)		3.077	(3.799)		0.137	(0.181)
Grade (10-11 th)	-0.178	(0.320)		1.671	(2.814)		-0.054	(0.128)
Teacher 9	-0.197	(0.534)		-3.972	(4.320)		-0.076	(0.206)
Classroom 10	-0.121	(0.433)		-5.018	(3.659)		-0.117	(0.172)
Classroom 12	-0.563*	(0.292)		-4.966**	(2.398)		-0.249**	(0.114)
Classroom 15	-0.552*	(0.303)		-3.539	(2.508)		-0.169	(0.120)
Classroom 16	-0.780	(0.544)		-7.984*	(4.476)		-0.275	(0.212)
Constant	3.798	(3.532)		-19.940	(31.160)		0.554	(1.411)
Observations	64			57			64	
R-squared	0.420			0.554			0.522	
Standard errors in parentheses								
*** p<0.01, ** p<0.05, * p<0.1								

Table 7 and Table 8 present the regression analyses of the estimated impact of the program on student knowledge about HIV as measured by the AIDS Knowledge Questionnaire. Table 7 shows a difference in difference analysis of all pretests and posttests collected. Difference in differences uses before-after comparisons for the students who participated in the AIDS Museum program and similar students who did not. A dichotomous variable indicated whether an observation represented a pretest or a posttest. Another dummy variable represented each student's assignment to the intervention or comparison group. The treatment effect is equal to the posttest variable

multiplied by the intervention variable, that is, the posttests for those students who participated in the AIDS Museum program. Due to absences and delays in obtaining consent forms, not all students who took pretests completed posttests, and not all students who completed posttests took the pretest. Table 8 shows the matched pre- and posttest data from those students who did complete both surveys. In these analyses, the pretest score is included as one of the control variables in addition to the demographic controls.

Based on the difference in differences analysis, the change in student scores on the AIDS Knowledge Questionnaire was higher in the treatment group than in the comparison group. The results were both statistically and substantively significant. When measured as the average of the questions answered on a one to five scale, the program seems to have increased average scores by .345 points. Assigning one point for each correctly answered question on the scale, scores increased by over three points more for the intervention group than the comparison group. Calculating the score as a percentage of those questions answered correctly, there was about an 11% greater change in the intervention group than the comparison group.

Looking at the matched pre- and posttests only, an even larger effect was found. A .767 increase in the average score, over a nine point increase in total score, and over a 34% increase. The effect sizes for these changes range from .456 to 1.778. This indicates a medium to large effect (Lipsey, 1990; Cohen, 1977). The relationship remained significant after clustering the standard errors by classroom.

When each factor from the AIDS Knowledge Questionnaire was treated as a separate independent variable, the coefficients were greatest and the significance levels the strongest for factors one and two, myths about casual contact transmission and actual

modes of HIV transmission. This suggests that the intervention primarily improved student knowledge in these two areas.

Table 9. Difference in differences analysis of the relationship between participating in the AIDS Museum program and student scores on the HIV Prevention Attitude Scale using ordinary least squares regression. Standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1				
	Average		Total	
Posttest	-0.203	(0.131)	-3.325*	(1.916)
Intervention	-0.022	(0.409)	-6.271	(6.917)
Treatment effect	-0.035	(0.151)	-0.358	(2.205)
Matched	0.191**	(0.090)	2.825**	(1.304)
Spanish survey	-0.039	(0.311)	-1.365	(4.534)
Male	-0.011	(0.061)	-0.494	(0.889)
Missing gender	0.028	(0.234)	0.153	(3.478)
Latino	0.227**	(0.089)	3.177**	(1.300)
Missing Latino	0.307*	(0.175)	3.481	(2.604)
White	-0.153	(0.136)	-1.586	(2.023)
Mixed race	0.124	(0.115)	1.353	(1.678)
Missing race	-0.444***	(0.115)	-6.084***	(1.670)
Asian	-0.353	(0.217)	-5.265*	(3.142)
Pacific Islander	-0.676***	(0.197)	-10.33***	(2.996)
American Indian	0.194	(0.275)	2.253	(3.979)
Lazarus High	0.706**	(0.332)	8.248	(5.105)
Brennan High	0.318	(0.421)	10.770	(7.092)
Grade (9-11th)	0.073	(0.166)	-2.493	(2.890)
Teacher 4	-0.191	(0.278)	-2.377	(4.021)
Teacher 5	-0.100	(0.481)	-6.571	(7.831)
Teacher 6	0.133	(0.339)	3.593	(4.919)
Teacher 9	0.588***	(0.190)	8.613***	(2.747)
Classroom 6	-0.095	(0.519)	4.049	(8.317)
Classroom 7	-0.013	(0.493)	-6.104	(7.985)
Classroom 9	0.148	(0.417)	-3.741	(7.028)
Classroom 11	0.271	(0.219)	-0.715	(3.574)
Classroom 12	-0.003	(0.213)	-3.977	(3.489)
Classroom 13	0.126	(0.547)	-7.958	(9.403)
Classroom 15	-0.516	(0.428)	-1.944	(7.174)
Classroom 16	0.190	(0.423)	8.528	(7.108)
Classroom 17	-0.409	(0.426)	-0.134	(7.140)
Classroom 18	-0.311	(0.195)	-3.616	(2.871)
Classroom 20	-0.346	(0.530)	-12.420	(8.473)
Constant	3.087*	(1.800)	86.49***	(31.520)
Observations	373		364	
R-squared	0.185		0.191	

Table 10. Ordinary least squares regression analysis of the relationship between participating in the AIDS Museum program and student scores on the HIV Prevention Attitude Scale with matched pre- and posttests					
	Average			Total	
Treatment effect	0.026	(0.300)		-0.398	(5.095)
Pretest score	0.838***	(0.146)		0.990***	(0.174)
Male	0.184	(0.150)		4.110	(2.554)
Latino	-0.117	(0.244)		-3.052	(4.137)
White	0.542	(0.349)		7.515	(5.866)
Mixed race	0.325	(0.236)		6.361	(4.004)
Missing race	0.171	(0.334)		2.469	(5.667)
Pacific Islander	0.185	(0.595)		4.893	(10.020)
American Indian	0.333	(0.516)		7.704	(8.759)
Brennan High	-0.097	(0.426)		0.326	(7.245)
Grade (10-11th)	-0.015	(0.317)		-0.600	(5.407)
Teacher 9	-0.123	(0.494)		-0.635	(8.389)
Classroom 10	-0.153	(0.420)		-2.070	(7.129)
Classroom 12	-0.379	(0.277)		-4.804	(4.695)
Classroom 15	-0.350	(0.283)		-4.681	(4.810)
Classroom 16	-0.361	(0.515)		-2.926	(8.744)
Constant	0.903	(3.490)		4.554	(59.240)
Observations	60			60	
R-squared	0.549			0.543	
Standard errors in parentheses					
*** p<0.01, ** p<0.05, * p<0.1					

Tables 9 and 10 show the analyses with the HIV Prevention Attitude Scale as the dependent variable. As shown in Table 9, using a difference in differences model to compare the changes in attitude scores of students in the intervention group with those in the comparison group, results were negative but not statistically significant. In the matched pre- and posttest analysis in Table 10, one model showed an increase for the intervention group relative to the comparison group, while the other showed a decrease. Neither result was statistically significant.

Treating each factor for the HIV Prevention Attitude Scale as a separate dependent variable, the treatment effect was generally not significantly related to attitudes. One exception is for factor four, self-efficacy, which was positively related to the treatment and statistically significant using a one-tailed test. This is encouraging, but in light of the rest of the findings, inconclusive.

Subgroup analyses were performed for students with high pretest attitude scores and below median pretest scores, with comparable results. Different combinations of control variables and removing fixed effects consistently yielded similar results. Although not shown, different treatments of the measures such as logging the dependent variables and adjusting for measurement error in the pretests yielded comparable findings.

One possible explanation for the findings is that students' attitudes were already fairly positive at pretest, so there was less room for change due to the intervention. Knowledge scores at pretest, in contrast, were quite low, providing greater opportunity for change.

Students in the intervention and control groups were significantly different at pretest in their knowledge scores. The effects of the pretest were statistically significant for attitudes but not knowledge. In the matched pairs, the pretest score significantly predicted the posttest score for both knowledge and attitudes.

Although not the main interest of the study, the effects of some of the control variables on knowledge and attitude scores are worth noting. The intervention was administered to mixed-gender classes. Gender was not significantly related to scores on either the attitude or knowledge scale. This differs from previous studies that have found

girls reported more factual knowledge of HIV/AIDS than boys (Swenson et al., 2009). Fewer male students returned consent forms and completed the survey, consistent with previous studies of active parental consent procedures (Courser, Shamblen, Lavrakas, Collins, & Ditterline, 2009). Subgroup analyses showed that, in general, the program seemed to improve knowledge scores for boys more than for girls, even though the two groups had comparable pretest scores. Additionally, the effect of the program on knowledge was greater for tenth graders compared to ninth or eleventh graders. These results may inform future efforts to adapt the program or embed it in the curriculum.

There were no statistically significant relationships between participation in the intervention and scores on the feeling thermometer questions. These regression analyses are not shown. Students' perceived knowledge, as measured by the feeling thermometer question, was higher than their actual scores on the knowledge scale. On average, students answered correctly 47% of the questions they did not leave blank on the AIDS Knowledge Questionnaire. On a 0 to 100 scale asking students how much they know about HIV, the mean response was about 62. The thermometer question had very low correlation with any of the knowledge scale measures (ranging from .121 to .235). Bruine, Downs, Fischhoff, and Palmgren (2007) report that overconfidence in HIV-related knowledge is pervasive. Results from this study show this holds true for the sample in Newark. This suggests there is a need to make students aware that their preconceptions about HIV may be incorrect.

Findings from Student Interviews

This section highlights results from student interviews and participant observation. Students seemed to respond well to the intervention because of the visual

nature of the program. A theme that emerged was that students came to understand how someone can have HIV but still go on with life. Although the quantitative findings showed that attitudes were unchanged, based on the qualitative research, the program seemed to increase empathy toward people with AIDS. In the interviews students also discussed specific facts about HIV they learned from the program. This is consistent with the quantitative findings about the impact of the program on knowledge about HIV.

Student reactions were generally positive toward the program. One student said, "I liked the exhibit. It was informative. It was exciting. I mean, it wasn't just a lecture. It was something to show us, get us excited about it." The artwork seemed to appeal particularly to more visual learners. One girl said, "I liked the paintings because I paint myself. So it was cool seeing people's paintings." One of the teachers said, "I think the artwork enhanced the presentation because the kids today are more visual." Some students liked that there were a lot of pictures, and said the pictures had a lot of details.

One particularly memorable picture mentioned by students was painted by an HIV-positive artist with his own blood. A few students commented specifically about an art installation that one of the artists showed them that involved a barcode scanner linked to videos of people living with HIV telling their stories. Another picture that generated discussion and emotional reactions from the students was showed a person injecting something into his eye with a syringe. The researcher explained that this person has HIV (but did not contract it through injection drug use), got another AIDS-related illness that caused him to partially lose his sight, and had to inject medicine into his eyes to save some of his vision.

One of the main messages students took away from the program was that people with HIV can overcome the challenges in their lives. For example, one student said of the artist who spoke to the class, “He really got to me when he talked about how he overcame when he first had HIV, how he thought how his life was gonna be over. As he went on with the symptoms he overcame and he did a lot.” Related to this point, students were surprised that people could live with HIV for a long time. One boy said, “The lady in New York you said had it I think for 30 years and is still living. That’s amazing.” A girl said about the person with HIV injecting medicine into his eye in the photograph “It was just really inspiring because he’s not dead, right?”

The program also seemed to induce empathy among students toward people with HIV and gratitude toward the artists who shared their stories. One of the students wrote a poem to give to one of the artists based on her feelings about the discussion and to thank her for talking with the class. During an interview, a boy said some of the pictures showed a lot of pain and sadness. A girl explained, “People think ignorant thoughts about AIDS. So I think that if you don’t talk bad about it, actually sit there and learn what it’s about, then you actually see people who have AIDS -- they’re people.”

Recalling a painting of a homeless injection drug user from the exhibit, a student said,

You can’t tell if a person has AIDS or not. I see people on the ground all the time. They could be poor. They could have a disease. They don’t have anywhere to live. I really felt bad. When I look at pictures I really start tearing up and stuff like that. I don’t know. I just care about the people.

Other students echoed the theme of not knowing who has AIDS, especially based on the people in the pictures in the exhibit.

Some of the students noted specific facts they learned from the AIDS Museum program such as ways HIV could be spread. One girl said, “I thought it was only through

sex before...I didn't know you could get it through blood." Others learned ways you cannot get HIV. A student said she thought you could get HIV through casual contact such as drinking out of someone else's cup. Because of the artist living with HIV, she learned that is not true. Another girl said after participating in the program, "Some people say that from touching you can catch it. I don't think you can." A boy said, "I learned most about it from you. How to get it and how not to get it. Shaking hands with a person with HIV you don't get it but having sex with a person you do."

There seemed to be variation in student response and interest based on age/grade level. Ninth grade students tended to be interested in discussions about whether you could get HIV from tattoos or piercings. One teacher told the researcher about tattoo parties, in which students who are under 18 years old get tattoos without their parents' permission, often from tattoo artists in training, who may use the same needle for multiple people. Older students tended to have more sophisticated knowledge about HIV and ask detailed questions about sexual behaviors, such as the relative risks of anal and vaginal intercourse and oral sex.

Students had suggestions to improve the program. More speakers were requested, such as experts like people who have written books about HIV, other people who have HIV and can tell their life stories, and other artists whose work is in the AIDS Museum collection. One student suggested expanding the program by going into more schools and recreation centers.

Chapter 5: Conclusions and Policy Implications

This dissertation has reported on a process and outcome evaluation of an education program aimed at increasing knowledge and changing attitudes about HIV and AIDS among high school students. The research was conducted in four Newark, New Jersey public high schools through a quasi-experimental pretest posttest design. In order to evaluate the effects of the intervention, the following research questions were asked:

Q₁ Do students participating in the AIDS Museum program gain more knowledge about HIV and AIDS, compared to similar students not in the program?

Q₂ Do students participating in the AIDS Museum program improve their attitudes more toward HIV prevention and people with HIV, compared to similar students not in the program?

Additionally, through interviews with students, the study addressed the research question:

Q₃ Through what processes do students' knowledge and attitudes about HIV change?

The guiding research question for the implementation phase of the study was:

Q₄ What conditions promote or impede implementation of school-based HIV education programs?

Process Evaluation

The final research question was examined through interviews and participant observation. At the city-level, economic, political, policy, and social issues influenced implementation, especially in the climate of the economic recession. At the school-level, organizational factors as well as the individual behaviors of employees affected program implementation and quality. Policy makers and managers had the authority to block programs, but less ability to make sure they are carried out. District administrators

believed they had limited ability to affect what goes on in individual schools. School leaders, particularly health education department chairs, were influential in determining whether their school participated in the study. Teachers, as street-level bureaucrats, had a great deal of discretion in teaching HIV education but see themselves as constrained by institutional forces. Teachers' cooperation was important for program implementation. Professional staff seemed to make decisions based on evidence, consistent with learning theories. The AIDS Museum program was particularly challenging to implement in schools with less structured environments in which students experienced more social and behavioral problems. A combined top-down and bottom-up approach to implementation and a rational/technocratic and political/cultural framework help explain facilitators and barriers to implementation of HIV education programs in this context.

Based on this research, several recommendations for HIV education in these schools were identified. One barrier to effective HIV education identified in this study was lack of training of key employees. Although training has been provided to middle school health teachers and social workers, high school teachers and school nurses should also receive training.

Another factor that could help promote the implementation of HIV education in the Newark schools would be an outside organization or interest group advocating for the issue. Policy implementation theory suggests external pressures are important. A district administrator noted the absence of consistent interest group support in an interview. Community organizing or media attention to the issue of HIV could put pressure on the Newark schools to implement mandatory HIV education more reliably.

Additionally, teachers have noted that the textbook adopted by the district,

Glencoe Health, does not include information about sexuality. Although a supplement exists, it is not frequently used in the classroom. This seems a direct contradiction to New Jersey's policies regarding sex education and HIV education. The district should consider adopting a different textbook or encouraging the use of the sex education supplement to the book.

Outcome Evaluation

This study showed that students' knowledge about HIV improved due to the AIDS Museum intervention. The findings were statistically and substantively significant. A meta-analysis of previous studies of school sexuality education programs found a weighted average effect size of .41 on students' sexual knowledge due to the interventions (Song, Pruitt, McNamara, & Colwell, 2000). The effect size of the AIDS Museum program on knowledge measures ranged from .456 to 1.778, placing it above the average. Attitudes, however, remained unchanged. Relative to the benefits and to other interventions, the time and money costs of the intervention were fairly low. However, this was in part due to the contributions of volunteers such as the artists. A formal cost-benefit analysis of future iterations of the program could identify whether this approach rather than others should be adopted by schools.

Previous studies have found that HIV prevention education programs incorporating HIV-positive speakers improved young people's attitudes about HIV (Paxton, 2002). The AIDS Museum program, which incorporated an HIV-positive artist as a speaker, improved student knowledge. While some researchers have suggested that the effects of arts programs cannot be measured (Panford, Nyaney, Amoah, & Aidoo, 2001), this study demonstrates that social science methods can be applied to evaluate the

process and outcomes of an art intervention. McDonald and Wessner (2003) have demonstrated how visual art can convey the scientific, historical, and emotional aspects of HIV. This dissertation has evaluated the ways in which visual art conveyed factual information about HIV and dispelled myths and misperceptions.

The effects of an art program on knowledge is interesting in light of debates about the relationship between knowledge, attitudes and behaviors (Kelman, 2005; Slovic, 1999; Somlai, Kelly, Wagstaff, & Whitson, 1998; Small, Weinman, Buzi, & Smith, 2009; Liverpool, McGhee, Lollis, Beckford, & Levine, 2002; Anderson et al., 1990; Holtzman et al., 1991; Swenson et al., 2009; Schumann, Nyamathi, & Stein, 2007; Knaus, Pinkleton, and Austin, 2000; Bazargan, Stein, Bazargan-Hejazi, & Hindman, 2010; Chaffee & Roser, 1986), cognitive and affective domains (Bloom, 1956; Slovic, 1999; Fiske, 2010), multiple intelligences Gardner (1994), and learning styles (Morgan, 1996). Students' knowledge about AIDS may have changed indirectly. The art program may have generated emotional responses in students such as fear, surprise, sadness. These affective feelings may have led to interest in learning more about HIV. After the program, students may have talked with each other or adults about HIV or searched for information. Students who were visual learners could have driven the change in knowledge observed in the study. Questions about these potential mediators should be included in future surveys.

Although this intervention changed students' knowledge, these changes took place in an environment that may not be conducive to behavior change. For example, as mentioned in the findings of the process evaluation, the schools do not distribute condoms, in part due to lack of funds. Students might know that condom use can prevent

the spread of HIV and have positive attitudes toward condom use, but not be able to get them easily.

In future studies, alternative scales, such as the HIV-Knowledge Questionnaire (Carey, Morrison-Beedy, & Johnson, 1996), the HIV Risk Scale (Saewyc et al., 2006), the Sexual Risk Behavior Beliefs and Self-efficacy Scales (Basen-Enquist et al., 1999) could be used in future studies to determine whether these results are artifacts of the survey instruments or accurate reflections of student knowledge and attitudes.

Additionally, future surveys should ask questions about specific parts of the program, such as whether students remembered specific pieces of art, the artist, or whether this was the first person the student met with HIV. In these ways, studies could identify key components of arts-based HIV prevention programs.

Research has shown that school-based anti-stigma programs incorporating the arts have been effective at improving high school students' knowledge and attitudes about mental illness (Warner, 2005). A comparable effect was found in this study for knowledge about HIV.

Findings from the student interviews indicate that students' knowledge changed through the visual nature of the art and the experience of talking with the artist. Students learned basic facts about HIV and also learned that people with AIDS can live their lives and express themselves through art. Students also developed more empathy toward people with AIDS.

One possible explanation for the change in knowledge but not attitudes is the setting of the study. In a city with a high rate of HIV, in which many students reported knowing someone living with AIDS, attitudes at pretest were already fairly positive

toward HIV prevention behaviors and toward people with AIDS. The average pretest score was about 65 on a scale ranging from 15 to 75, suggesting a ceiling effect. However, since students, teachers, and administrators all reported relatively little attention to HIV in the classroom, particularly prior to high school, knowledge levels were low. Because knowledge levels were low, during the intervention the discussion was sidetracked from the art and the message of the program to focus on basic facts about HIV. This is consistent with implementation of other HIV prevention programs (Mueller, et al., 2009).

Limitations

One potential limitation of this study is the bias that can result from lack of independence between designing and evaluating an intervention. Some argue that when the intent of an evaluation is to improve a program rather than to compare its effects with an alternative program, how a study is conducted may be more important than who is conducting the evaluation (Bachrach & Newcomer, 2002). A way to guard against this bias is to provide access to information about the design and execution of the evaluation study and make data available to other researchers.

Despite its shortcomings, some have argued (e.g. Semel, 1994) that social research as a participant is an important form of research, provided steps are taken to address researcher bias. It is necessary to compare the researcher's own perceptions as a participant to other evidence, such as documents and interviews. When findings from these sources coincide, it is necessary to make sense of the contradictions. Semel also discusses bracketing out the researcher's experience. The final product includes the researcher's own experiences and those of others. Such a study can be informed both by

the subjective understanding of an insider and the insight of an outsider. Reflection and ongoing discussions with colleagues both inside and outside of the institutions involved in the research are helpful. In this case, for example, other graduate students accompanied the researcher during the program and took notes as observers (not participants) (Semel, 1994; 1995). However, it should be noted that the qualitative data (both field notes and interview transcripts) was not coded by a second coder.

There are limitations to external validity of the quantitative findings. This dissertation is a study of four public high schools in Newark. Results may not be generalizable to other school settings or institutions. Setting characteristics may affect outcomes dramatically (Shadish, Cook, & Campbell, 2002). For instance, since Newark has a high HIV rate, the findings could differ in a setting less affected by the epidemic. Further, classrooms were selected in part based on health teacher interest in participating in the program or the recommendations of the health department chair. This also limits the generalizability of the study; in future iterations, teachers who are less interested in the AIDS Museum intervention may not cooperate, which could lead to a weaker program effect if any. Chatterji (2005) suggests that qualitative methods can help uncover which program components are important, which can improve external validity.

There are several potential threats to internal validity. One is a maturation effect. Students may learn more about HIV over time regardless of the intervention. On the other hand, adolescents are more likely to engage in risk behaviors as they get older (Trenholm, Devaney, Fortson, Quay, Wheeler, & Clark, 2007).

A second threat is a novelty effect. Since this is a new program, students and staff may have reacted differently than they would if the intervention were typical and

ongoing. Additionally, students may have retained more knowledge because the intervention was a disruption, and not because of the art-related activities in particular. The student interviews, however, indicated that the art-based nature of the program was a factor in why students liked and learned from the program.

Lack of treatment fidelity is also a limitation of this study. The full intervention was implemented at Emma Lazarus High School. Only the exhibit and the artist visit took place at William J. Brennan, Jr. High School. At Rosa Parks High School and Martin Luther King, Jr. High School, the exhibit was the only component of the intervention. However, it is promising that the program had a positive effect even in those schools in which the program was only partially implemented. This suggests that arts-based interventions are able to change knowledge, even if the specific artwork shown or artist involved in the program varies.

Another concern is that events may have taken place other than the AIDS Museum program that increased student awareness of HIV. Although such events should apply equally to the comparison and intervention groups, each intact classroom was exposed to some common influences that may not have affected the others. The student interviews helped to identify these influences. For example, a few students mentioned Trojan condom commercials that aired during the time of the study that were particularly memorable. There is also a possibility of a contamination effect. Since some of the teachers taught one class in the intervention and one class in the control group, there may have been some spillover in the HIV education unit for each group.

In addition to the teachers' effect, students in the intervention group may have shared some of the information they learned from the program with their peers in the

comparison group. However, the full intervention was not delivered to the comparison group, mitigating concerns about contamination. Students in the comparison group were not be likely to have visited an art exhibit about AIDS, participated in a discussion with an artist living with HIV, or created an art project about AIDS.

Another possible threat to internal validity is selection bias. Different types of students may have chosen to participate or not participate. The requirement to obtain active parental consent further limited the types of students who participated in the study. Previous studies have shown that students who return written parental permission are different from those who do not return consent forms or whose parents refuse permission. For instance, an experimental study concerning drug use in students found that active consent policies produced lower response rates, underrepresentation of male students and older students, and underrepresentation of groups at risk (based on rates of drug use) (Courser, Shamblen, Lavrakas, Collins, & Ditterline, 2009). To address the issue of bias due to active consent procedures, the respondents were compared to the total school population based on race/ethnicity to see if students from particular groups were more or less likely to participate. In general, students in the study were comparable to students in the overall school populations. It is unclear whether differences were due to changes in school demographics over time or due to selection bias.

Additionally, students are not placed in classrooms randomly, although which class taught by a given teacher received the intervention was random. As a non-randomized quasi-experiment, the results of this study are less convincing than a randomized field experiment (Rossi, Lipsey, & Freeman, 2004; Shadish, Cook, & Campbell, 2002). To address this possibility, the intervention and control groups were

compared based on demographic characteristics and their pre-test scores. Since there were differences, these factors were included as covariates in the models. Although the design of this study is quasi-experimental, “randomly assigning the program at the level of a group or geographic area – even if the program involves relatively few groups or areas – still makes the treatment at least somewhat exogenous” (Remler & Van Ryzin, 2010, page 433).

Testing effects may be another threat to validity. Students may have remembered the questions from the pretest, which would change their score on the posttest regardless of the effect of the intervention. Since the study is quasi-experimental, the pretest was an important way to assess whether the intervention and control groups are comparable. Including the pretest as a covariate also increases statistical power (Shadish, Cook, & Campbell, 2002). Results showed that the pretest was related to posttest scores. However, the effects of the intervention were fairly consistent for those groups that only completed the posttest and those groups that completed both the pre- and posttests.

Some other limitations concern the intervention and its outcome measurement. One issue is the length of the intervention. While effective HIV education programs generally last at least 14 hours (Kirby, Laris, & Roller, 2005), and programs spread out over a number of weeks have more of an impact than condensed programs, (Rotheram-Borus, Gwadz, Fernandez, & Srinivasan, 1998), this is often not feasible in the context of the high school health curriculum. For this reason, the AIDS Museum intervention involved about three class periods. However, this may not have been long enough, or spread over enough time, to have a significant effect.

Additionally, since a fairly short time period was covered, the study cannot estimate whether the intervention has a longer-term significant effect. Although the study could be extended and the survey replicated, due to the classroom-based nature of the program, contacting students when they are no longer in the intact health class may be a challenge over more than one school year (Martin, 2000).

The survey questions in this study measured knowledge and attitudes, but not actual behaviors. Some studies have shown that HIV prevention programs that influence attitudes and knowledge may have little impact on behaviors (Trenholm, Devaney, Fortson, Quay, Wheeler, & Clark, 2007). Previous research has found that interventions may increase HIV knowledge, but that does not necessarily lead to changes in risk behaviors (Vanable, Carey, Carey, & Maisto, 2007). Other influences, such as peer pressure, may outweigh knowledge and attitudes in determining actions.

The research literature recommends that evaluations of sexual health and HIV prevention programs include measures of behaviors and, if possible, clinical results (Gordon, 2007; Kirby, Laris, & Rolleri, 2005). However, due to concerns about the protection of the rights of the adolescent participants, this study does not include these outcome measures.

Despite these limitations, this study employed a strong quasi-experimental design. The treatment was at least somewhat exogenous. Results were consistent across different measures of the dependent variables.

Lessons Learned and Reflections

The experience of implementing this program can inform future efforts of this nature in schools. This section details some of those lessons.

One implementation challenge that arose was that artists sometimes cancelled after the program was scheduled. This may be expected when the individuals are living with AIDS and more likely to become ill. However, in some cases, paying the artists at least a small sum for travel reimbursement encouraged them to commit to the program. Since the artists make their living in part through speaking engagements, this was an important consideration.

More time could have allocated more time to the consent form process to improve responses. Many of the recommendations in the literature regarding active consent could not be followed due to time and budget constraints. However, at the beginning of the study, the department chairs and teachers were relied upon to distribute consent forms. This was ineffective. Understandably, the administrators and teachers had other priorities. When the researcher visited the schools over and over to collect consent forms, students were more likely to remember the “AIDS lady” and bring back their forms.

Students in these high schools experienced a number of challenges in their daily lives. Many of them came from female-headed single-parent households. Several were cared for by their grandparents. They saw other students who were pregnant and how their lives were changed. Their environments included violence, drugs, and gangs. In the face of these difficulties, students displayed remarkable ambition, courage, and compassion. Many students were interested in the academic nature of this research project, and asked questions about college life and work. In a culture that still stigmatizes and limits the rights of gay and lesbian individuals, some students were brave enough to ask questions about homosexuality. Even though some of the artists were

more privileged than the students and came from different demographic groups, the students showed them respect, appreciation, and empathy.

Scaling Up the Program

Given the positive effect of the AIDS Museum intervention on students' knowledge about HIV, the program could be expanded throughout the Newark schools. Different types of art could be included in the exhibits, or different speakers could come to the schools to test the sensitivity of the results to varying conditions. The program could be implemented outside of schools to test whether the intervention should stand alone or be integrated with the health curriculum. Future studies (particularly those outside of school settings) could be conducted through a RCT, include longer-term follow-up, and measure behavioral outcomes.

The effects of the AIDS Museum program suggest an arts-based approach to HIV education can be effective at improving knowledge about AIDS. At the broader policy level, if this intervention is effective and future studies offer corroborating evidence, there is evidence to support policies that expand and not reduce health education in schools. The CDC could consider adopting an arts-based or school-based EBI.

The AIDS Museum program would probably not replace traditional HIV education conducted within health classes. However, it could complement the existing curriculum. Several potential avenues for expanding, disseminating, and institutionalizing the AIDS Museum program were identified throughout this study. One teacher suggested that after the research is complete, the teacher and researcher should go over the questionnaire out loud with the students, asking who thought a statement was true or false and why, or who agrees or disagrees and why. This has been done in other

studies. The researcher was invited to speak to about 60 teachers at a staff development day at Mt. Vernon School (pre-kindergarten through eighth grade). Two art teachers expressed interest in bringing the AIDS Museum program to their classes, or perhaps to an after school program. One teacher, whose subjects included social studies, science and, once a week, health, suggested that the science curriculum might be a better place for HIV education because more time is allotted to science than health. A few teachers noted that HIV education is not fully implemented because it is not on standardized tests. Teachers might be another potential audience for the AIDS Museum program. They can then deliver the intervention to their students. The program could be adapted for younger middle school students. The program seemed to be most effective for tenth grade students, but interviews with teachers and administrators identified the greatest need for HIV education at the middle school level. The researcher was invited to present about HIV to eighth graders at two schools, in a classroom setting in one and to the student newspaper club at the other. The students in the newspaper club wrote an article based on what they learned from the presentation to share the information about HIV with their schoolmates. The exhibit was not transported to these schools, but the students were able to view images of the artwork on a computer or a print out. The advisor for the newspaper club gave the following feedback, "They were very impressed. They were also asking about the possibility of getting it to be housed here so that everyone could see it."

This may be a future challenge. Due to moving the exhibit so many times, the artwork was in jeopardy. For instance, the glass broke on one of the paintings. Some of the pictures started to come out of their frames. Although students requested and seemed

to respond better to the in-person exhibit, in the future, it may be better to offer the program to more students at a time or in one location so as to avoid transporting the artwork so frequently or use digital images of the art.

Other HIV prevention programs have incorporated videos (e.g. Jones, 2008). The AIDS Museum intervention could be adapted as a video. A tour of the exhibit or message from the artists could be recorded and shown in classrooms. Since scheduling of artists was an issue, video recorded messages or real time interaction via programs such as Skype may be used, especially so the kids can hear from artists who do not live close by. During the interviews, students agreed that this would be a good option. The AIDS Museum exhibit travelled to another high school for a special AIDS awareness day for 160 Teen PEP peer educators from several high schools. Although the full intervention was not implemented, this suggests another potential avenue to reach a large number of students in one location. Further, the teen peer educators may be an appropriate group to target with the AIDS Museum intervention, as was suggested by the district HIV prevention education specialist. These peer educators would then be able to deliver HIV education to more students.

In one of the schools in the study and other schools in the district, health clinics operate within the school building. These are open to both students and the outside community. Anecdotally, the clinics have a positive reputation for service delivery. There is some integration between other parts of the school, such as the health education classes, and the clinics. For instance, some health classes visit the clinics. However, there is room to further leverage the strengths of the clinics. This is also one area in which the AIDS Museum intervention could be integrated with existing services.

Through interviews, clinic staff such as social workers favored approaches to HIV prevention that were evidence-based. Since the AIDS Museum intervention shows promise as a way to improve knowledge about HIV, the program could be offered as a service of the clinics to students and community members.

One possible way to overcome the challenge of the requirement of active parental consent would be to replicate the study with a population of first-year students at local colleges who are alumni of the Newark Public Schools. Since most of these students would be over 18 years old, parental permission would not be necessary. In this situation, it might also be possible to ask students questions about behaviors in addition to knowledge and attitudes.

Due to the emphasis on math and literacy in light of NCLB, one possible way to encourage implementation of the AIDS Museum program or HIV education in general would be to incorporate these skills into the program. For instance, poetry or literature related to AIDS could be included in the program. Students could learn about statistics related to HIV. The scientific aspects of AIDS could be explored further.

Contributions of the Study

This dissertation contributes to the literature on evaluating and implementing HIV education programs. The qualitative, process evaluation offers insights about the acceptance of this type of program in a school district, how well it fits into the academic structure, and implementation challenges. This study contributes to this research literature by offering a bottom-up micro-implementation perspective and examining the viewpoints of multiple stakeholders. The contribution of the outcome evaluation component of this study is to examine the effect of an art exhibit upon knowledge and

attitudes. Methodologically, this study's contribution is to test the HIV Prevention Attitude Scale and the AIDS Knowledge Questionnaire in different settings with different populations. In the ways discussed in this section and throughout the dissertation, the findings of this study may contribute to interdisciplinary knowledge in the fields of public administration and urban health and education. This study demonstrates that it is possible to conduct HIV education programs that effectively improve student knowledge even in the face of challenges such as tough economic conditions, turnover of staff involved in HIV prevention, lack of training, competing priorities in the district due to other social problems and state, federal and district mandates, an active parental consent policy, and student attendance issues.

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Attachment 1
 Individual Interview Protocol
 Participants: School staff and administrators

Introduction

Thank you for participating in this interview today. My name is Ashley Grosso, and I'm a PhD student at Rutgers Newark doing a study about HIV education in high schools. I'd like to ask you some questions about how HIV education is implemented at (name of school). What we discuss will be included in my dissertation, but your answers will be confidential. I will not share your answers with anyone from the school or district. Do you have any questions before we begin?

HIV education

What is your role at (name of school)?

How are you involved in HIV education?

What HIV education programs are currently taking place at your school?

What HIV education programs have there been at the school in the past?

Are you planning any new HIV education programs?

How much money is spent at your school on HIV education?

What concerns do you have, if any, about implementing HIV education at your school?

What sort of evidence would convince you to adopt a particular program or policy on HIV education?

AIDS Museum

Now I have some questions about the AIDS Museum's program that is being implemented in partnership with your school.

Would you be open to continuing to partner with the AIDS Museum if the intervention shows some evidence of effectiveness?

For what grade levels do you think the AIDS Museum intervention would be appropriate?

How many classes would you want to participate in the AIDS Museum program? Which grade levels?

Would your school be likely to provide any funding for the AIDS Museum partnership?
Closing

Is there anything else you would like to tell me about HIV education at your school? Or do you have any questions for me?

Thank you again for taking the time to meet with me today. Your answers will really help me in my research. You can contact me in the future if you have anything else you'd like to share.

Attachment 2
Individual Interview Protocol
Participants: District administrators

Introduction

Thank you for participating in this interview today. My name is Ashley Grosso, and I'm a PhD student at Rutgers Newark doing a study about HIV education in high schools. I'd like to ask you some questions about how HIV education is implemented in the Newark Public Schools. What we discuss will be included in my dissertation, but your answers will be confidential. I will not share your responses with anyone from the district. Do you have any questions before we begin?

Background

What is your role working for the district?

How are you involved in health or HIV education?

Health and HIV education: past, present and future

How did the district choose the health education textbook, *Glencoe Health*?

What HIV education programs do you know of that are currently taking place in the Newark Public Schools?

What HIV education programs have taken place in the district in the past?

Are you planning any new HIV education programs?

What sort of evidence would convince you to adopt a particular program or policy on HIV education?

Specific factors influencing HIV education

What concerns do you have, if any, about implementing HIV education in the Newark Public Schools?

How much money is spent district wide on HIV education?

What funding sources are used?

What state or federal policies affect the district's HIV education programs?

How do parents react to the teaching of HIV education in the schools?

Closing

Those are all of the questions I have. Do you have any questions for me? Are there any issues that we've missed or anything else that you would like to say or to tell me?

I want to thank you so much again for your time and insights. I've learned a lot that will help me in my dissertation research. You have my contact information, so feel free to be in touch if you have any questions or other ideas you want to share

Attachment 3
Focus Group Protocol
Participants: Health Teachers

Introduction

Thank you for taking the time to participate in this focus group about HIV/AIDS education. My name is Ashley, and I'm a graduate student at Rutgers Newark. What you say in this group will help me understand from your perspective some issues about implementing HIV/AIDS education in your high school. This research is for my dissertation, but your comments will be kept confidential.

There is no particular order in which you need to speak. I invite you to respond to my questions candidly and completely. You may also comment on or pick up the thread of someone else's comment.

We are recording this session so that I'll be able to think about your comments later, more carefully by reviewing the recording, but no one from your school or the district will have access to the recording. Also, my classmate will be taking notes during our discussion.

Before we begin, do you have any questions?

May we now begin?

First I want to ask about your school's health classes in general.

What do you think about the textbook the district uses, Glencoe Health?
Probe: How accurate and up-to-date is the information in the text?

What materials do you use in health classes besides the textbook?
Probe: For which topics do you use (videos, guest speakers, handouts)?

In addition to using materials in the classroom, some teachers use field trips as an educational tool. What are your thoughts about field trips for health classes?

Now we'll move on and talk about HIV/AIDS education specifically.

About how much time do you typically spend in health classes on the topic of HIV/AIDS?

How do you handle sensitive topics such as injection drug use and sex education?

How are decisions made about the content of HIV education at your school?

Probe: department chairs, teachers, parents, the school principal, the school superintendent or other district staff, state or federal lawmakers, or someone else?

What other factors affect the content?

What are the challenges, if any, to providing HIV/AIDS education to students in your school?

How do students respond to HIV/AIDS education in health classes?

How do parents respond to the school's HIV/AIDS education program?

Where would you look if you wanted to get ideas about HIV/AIDS education?

Probe: Some possibilities include other schools, published best practices, government organizations such as the Centers for Disease Control and Prevention, state curricula, or district curricula.

Conclusion

We're almost out of time now. Again, the purpose of this focus group was to discuss issues about implementing HIV/AIDS education at your school. Are there any issues that we've missed or anything else that you would like to say or to tell me?

Unfortunately that's all the time we have together. I want to thank you so much again for your time and insights. I've learned a lot that will help me in my research. All of you have my contact information, so feel free to be in touch if you have any questions or other ideas you want to share

Attachment 4
Individual Interview Protocol
Participants: Students

Introduction

Thanks for meeting with me today. My name is Ashley Grosso, and I'm a student at Rutgers Newark. I'm doing a research project about HIV education for my dissertation. I'm going to ask you some questions about what you've learned about HIV and AIDS. Your answers will help me to understand your perspective on HIV education in and outside of your school, but you don't have to answer any questions that make you uncomfortable. I'm audiotaping the interview so that I won't be distracted taking notes during our conversation. Even though the information I learn from you will become part of my dissertation, I won't share your answers with anyone from your school, and I won't record your name. Before we get started, do you have any questions for me?

May we begin?

Previous knowledge

How much did you learn about HIV and AIDS before this year?

Aside from school, where have you seen or heard information about HIV?

AIDS Museum

What did you like, if anything about the field trip to the AIDS Museum?

What were your impressions of the artwork?

What did you think about the discussion with the artist?

Had you ever met someone living with HIV before?

What type of art project did you create?

Attachment 5 Human Subjects Certification

ORSP HSCF Certification for Ashley Grosso (Login: ac514567-13/7-4031-037a-707a110... Page 1 of 1



Office of Research and Sponsored Programs
Administrative Services Building III ♦ Cook Campus
3 Rutgers Way ♦ New Brunswick ♦ New Jersey 08901
732/932-0150 ext. 2104 ♦ fax : 732/932-0163 ♦ web: <http://orsp.rutgers.edu>

12/22/2008

Dear Ashley Grosso

I am pleased to inform you that you have successfully completed the Rutgers University Human Subjects Compliance Program. This educational program includes information on the regulations, history, policies, procedures and ethical practices pertaining to research involving human subjects, which will be helpful to you as you conduct your research.

Your approval date is 10/20/2008. Duration of approval will be based on federal requirements which are not yet determined. Well in advance of the expiration date of your approval period, you will be notified so that you may continue your education regarding the protection of human subjects.

Additional information will also be provided on the IRB list-serve and posted on the human subjects website:
< [\[redacted\]](#) >

Please retain this letter of certification. It will be required for submitting human subjects protocols, and continuing review forms. When submitting a funding request to NIH, the certification date will be required for inclusion on a different certification letter, which may be requested by contacting the Sponsored Programs Administrator, by email at < [\[redacted\]](#) > or by phone at (732) 932-0150 ext. 2212. Thank you for your cooperation.

Sincerely,

A handwritten signature in blue ink, appearing to read "Sheryl N. Goldberg".

Sheryl N. Goldberg
Director
Office of Research and Sponsored Programs

http://acfc.rutgers.edu/sakai/printer_friendly.php?pi_full_name=Ashley_Grosso&user=ae... 12/22/2008

Attachment 6: Teacher Consent Form

I have been invited to participate in a research study that is being conducted by Ashley Grosso, who is a student in the Public Administration Department at Rutgers University and whose Faculty Advisor is Gregg Van Ryzin in the Department of Public Administration at Rutgers University. The purpose of this research is to determine how different pedagogical approaches to HIV education affect students' knowledge and attitudes.

I, **(name)**, give my consent to participate in the research entitled "Using Art to Educate Students about AIDS." I understand that this participation is entirely voluntary and there will be no negative consequences if I do not participate. I can withdraw my consent at any time and have the results of the participation returned to me, and removed from the records. The overall research results will be made available upon request.

The following points have been explained to me:

1. **The research procedures are as follows:** I will participate in one videotaped focus group with other health teachers about HIV education at our school during a regularly scheduled department meeting. The department chair will not be present. Answering any individual question will be voluntary. Total participation time will be up to one hour and 30 minutes.
2. The results of this participation will be confidential and will not be released in any individually identifiable form without my consent unless required by law. No names will be recorded. My individual answers will not be identifiable. The video will not be viewed by anyone other than the researcher and dissertation committee. Only the aggregate results of the research will be available to the school or district.

I agree to participate in the focus group interview.

Signature of Researcher: _____ Date: _____

Signature of Participant _____ Date: _____

I agree that the researcher may audiotape the focus group interview.

Signature of Participant _____ Date: _____

PLEASE SIGN 2 COPIES. KEEP ONE AND RETURN THE OTHER TO THE RESEARCHER

If you have any questions about the study, please contact Ashley Grosso, phone: 315-416-7257
Address: Rutgers University School of Public Affairs and Administration
111 Washington Street, Newark, NJ 07102

If you have any questions about your rights as a research subject, you may contact the IRB Administrator at Rutgers University at:
Rutgers University Institutional Review Board for the Protection of Human Subjects,
Office of Research and Sponsored Programs,
3 Rutgers Plaza
New Brunswick, NJ 08901-8559,
Tel: 732-932-0150 x 2104, Email: humansubjects@orsp.rutgers.edu

Attachment 7: Individual Interview Consent Form

I have been invited to participate in a research study that is being conducted by Ashley Grosso, who is a student in the Public Administration Department at Rutgers University and whose Faculty Advisor is Gregg Van Ryzin in the Department of Public Administration at Rutgers University. The purpose of this research is to determine how different pedagogical approaches to HIV education affect students' knowledge and attitudes.

I, **(name)**, give my consent to participate in the research entitled "Using Art to Educate Students about AIDS." I understand that this participation is entirely voluntary and there will be no negative consequences if I do not participate. I can withdraw my consent at any time and have the results of the participation returned to me, and removed from the records. The overall research results will be made available upon request.

The following points have been explained to me:

1. **The research procedures are as follows:** I will participate in an audiotaped individual interview with the researcher to discuss HIV education in Newark public high schools. Answering any individual question will be voluntary. Total participation time will be up to one hour.
2. The results of this participation will be confidential and will not be released in any individually identifiable form without my consent unless required by law. My name will not be recorded. The recording will not be available to anyone other than the researcher and dissertation committee. Only the aggregate results of the research will be available to the school or district.

I agree to participate in the interview.

Signature of Researcher: _____ Date: _____

Signature of Participant _____ Date: _____

I agree that the researcher may audiotape the interview.

Signature of Participant _____ Date: _____

PLEASE SIGN 2 COPIES. KEEP ONE AND RETURN THE OTHER TO THE RESEARCHER

If you have any questions about the study, please contact Ashley Grosso, phone: 315-416-7257
Address: Rutgers University School of Public Affairs and Administration
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If you have any questions about your rights as a research subject, you may contact the IRB Administrator at Rutgers University at:
Rutgers University Institutional Review Board for the Protection of Human Subjects,
Office of Research and Sponsored Programs,
3 Rutgers Plaza
New Brunswick, NJ 08901-8559,
Tel: 732-932-0150 x 2104, Email: humansubjects@orsp.rutgers.edu

Attachment 8: Parental consent/student assent form

My child has been invited to participate in a research study that is being conducted by Ashley Grosso, who is a student in the Public Administration Department at Rutgers University and whose Faculty Advisor is Gregg Van Ryzin in the Department of Public Administration at Rutgers University. The purpose of this research is to determine how different pedagogical approaches to HIV education affect students' knowledge and attitudes.

I, (parent/guardian name), give my consent for (child's name) to participate in the research entitled "Using Art to Educate Students about AIDS." I understand that this participation is entirely voluntary and there will be no negative consequences if my child does not participate. I can withdraw my consent [or my child can withdraw consent] at any time and have the results of the participation returned to me, and removed from the records. The research documents are available for parents to review at your child's school. (**list school contact person**). The overall research results will be made available upon request.

The following points have been explained to me [and my child]:

1. **The reason for the research is:** To evaluate the impact of an HIV education program incorporating the arts on students' knowledge about AIDS and attitudes toward HIV prevention, **and the benefits that I may expect from it are:** the opportunity to attend a field trip to the AIDS Museum.
2. **The research procedures are as follows:** Students will complete a written survey about their knowledge and attitudes about AIDS, attend an exhibit of art related to AIDS, participate in a discussion with an artist living with HIV, and create their own art project. After these activities, and again three months later, students will complete another survey. Some students will also participate in an audiotaped one hour interview about their perceptions of the program. Total participation time will be up to 6 hours over a three month time period.
3. **The discomforts or stresses that may be faced during this research are:** Students may be uncomfortable answering some of the survey questions, which discuss drug use and sexual activity, but do not ask students about their own personal behaviors. Students may skip any question if they choose. The school psychologist will also be notified of the research and available for counseling if needed. Rutgers will not provide compensation or medical treatment in the event of a research-related injury.
4. The results of this participation will be confidential and will not be released in any individually identifiable form without my consent unless required by law. No names will be recorded. Student surveys will be kept in a locked drawer in a locked office.

Parent's Initials _____ Child's Initials _____

I give my consent for my child to participate in the survey and field trip.

Signature of Researcher: _____ Date: _____

Signature of Parent/Guardian: _____ Date: _____

Signature of Student Participant _____ Date: _____

I give my consent for my child to participate in an audiotaped individual interview.

Signature of Parent/Guardian: _____ Date: _____

Signature of Student Participant _____ Date: _____

PLEASE SIGN 2 COPIES. KEEP ONE AND RETURN THE OTHER TO THE RESEARCHER

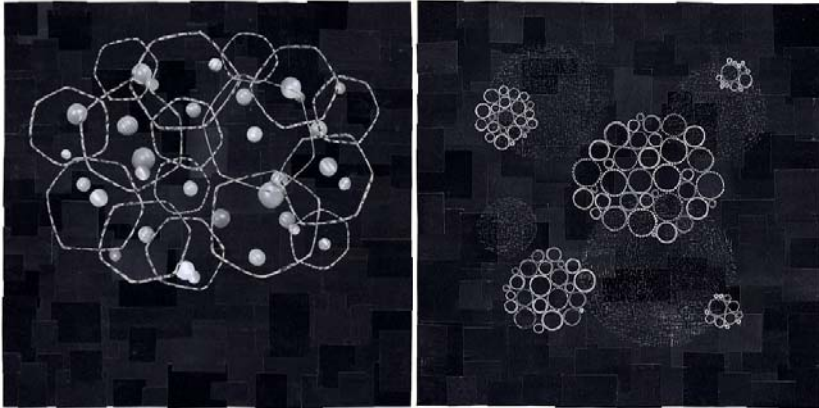
If you have any questions about the study, please contact Ashley Grosso
Phone: 315-416-7257
Address: Rutgers University School of Public Affairs and Administration
111 Washington Street, Newark, NJ 07102

If you have any questions about your rights as a research subject, you may contact the IRB Administrator at Rutgers University at:
Rutgers University Institutional Review Board for the Protection of Human Subjects,
Office of Research and Sponsored Programs,
3 Rutgers Plaza
New Brunswick, NJ 08901-8559,
Tel: 732-932-0150 x 2104, Email: humansubjects@orsp.rutgers.edu

Attachment 9: AIDS Museum program script

Hi, my name is Ashley, and I go to college at Rutgers. I started an organization called the AIDS Museum. to teach people about HIV and AIDS through art. We bring exhibits of art about AIDS and art by artists who have HIV to galleries and schools around Newark and other cities. I'm going to talk with you today about the art exhibit here, and you can come up and look at the pictures and ask any questions you have. On another day, one of the artists is going to come and tell you more about his work.

First I want to ask you, does anyone know what the letters HIV stand for? How about AIDS? HIV stands for Human Immunodeficiency Virus. It is the virus that causes the disease AIDS, Acquired Immune Deficiency Syndrome.



These collages called *Edge of Space* by an artist named David King who has HIV look like something you would see in outer space, but also like something you would see under a microscope. This helps us think about how for someone with HIV, something small like a virus can have such a huge impact on someone's life, physically and emotionally.



This painting called *Look Upon Yourself* is by artist Nadine LaFond, from Haiti. In the early days of AIDS in the United States in the 1980s, immigrants from Haiti were some of the first people to get sick from HIV. Many people blamed Haitians for the spread of HIV. Other groups of people, such as gay men, were also blamed for AIDS because they were some of the first to be affected. Now we know that anyone can get AIDS, and it's what you do, not who you are, that can lead to HIV infection. But in those days, there

was a lot of fear and misunderstanding. Can anyone tell me some ways that you can get HIV?... HIV can be spread through having sex with someone who has HIV, can be passed from mother to child during pregnancy, childbirth, or breast feeding, and through sharing needles or syringes for injecting drugs with someone who has HIV.



This photograph with a syringe is by Kurt Weston, an artist living with HIV. AIDS makes your immune system weak, so people with AIDS can more easily get sick from other illnesses. After Weston got AIDS, he also got another infection called CMV retinitis that left him partially blind. He thought he would never be able to do photography again. But with the help of special equipment, he can still take pictures.



This is a self-portrait called Journeys through Darkness. He wanted to show other people how he sees the world. His vision is still fuzzy. But even though he is blind and has AIDS, he has been able to keep working, taking photographs, and has even won awards for his work. One of the ways someone can be considered to have AIDS if they are HIV infected is if they get another serious illness, like Weston did. Another way is to be diagnosed by a doctor if someone with HIV has a low enough T-cell count. T-cells are in our blood; they are part of our immune system that keeps us from getting sick. HIV attacks and kills T-cells. So if you have HIV and have less than 200 T-cells per milliliter of blood, you are considered to have AIDS. Or, no matter how many T-cells you have, if you have HIV and you get sick from another illness like CMV or cancer, or certain types of pneumonia, you are considered to have AIDS.



Gregory Gallardo painted this picture of Kurt. You can see there is a cross in the picture. Often, art made in response to AIDS has spiritual or religious images. In part this is because so many people have died of AIDS. Many religious groups have also helped people with AIDS. Some people believe that according to their religion the only way you should protect yourself from HIV is to not use drugs and not have sex unless you are married. We want to respect everyone's religious beliefs but also give you the information you need to make the choices that are right for you.



Gallardo also painted this picture called Homeless in LA. He tries to paint people and scenes that ordinarily wouldn't be painted. He donates a lot of the money he makes from selling his artwork to charity, and he donated these paintings to the AIDS Museum. Where this was painted in Los Angeles, a lot of homeless people are addicted to drugs and share the needles they use to inject them, which leads to a lot of them getting HIV from each other.



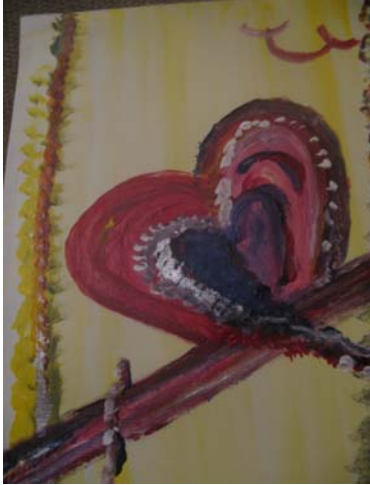
But of course it is not only homeless people who have HIV. Richard Renaldi is a photographer who has had HIV since 1996. He took these pictures for a series called Long Term Survivors. This is Renee, and this is Tony. You can see that not everyone with AIDS looks sick or is in the hospital. You can't tell if people have HIV by looking at them. So the only way you can know if you have HIV is to get tested. You can also tell from the title Long Term Survivors that these people have lived with HIV for a long time, over 15 or 20 years. Even though there is no cure for AIDS, there are medicines people can take that help them live longer and stay healthy. But AIDS is still a serious disease that can make you sick, or lose your sight like Weston.



An artist named Keith Theriot painted this as part of a series called Bloodwork. He is HIV-positive, and uses his own blood to paint pictures. You don't have to worry about getting HIV from the painting though, because he leaves the blood out for 24 hours, which is the time it takes from HIV to die if it's exposed to the air. Inside someone's body or in a needle or syringe, HIV can live for much longer, though.



Not all of Theriot's art is painted with blood. This one, for example, is made from regular paint, and is called the Three Graces. In Greek mythology, the Graces represented things like beauty, joy, and creativity.



So you can see not all of the art in the AIDS Museum is sad or dark. This untitled painting by an artist who goes by the name durkART is also one of our more colorful pieces. He is HIV-positive and has used his experience with HIV as a cause for celebrating life. But even in this colorful painting with a smile, you can see there is also a stabbed heart.



This plane was made at a men's cooperative in Rwanda. Some people think of AIDS as a problem mainly in Africa, but not a big deal in the United States. Actually, in Rwanda the percentage of people who have HIV is about the same as in Newark, two percent. Now, the rate of HIV is much higher in some other countries like Swaziland, where over 25% of people have HIV. But I just wanted to give you a sense of comparison for Newark. The plane was made from recycled materials. The wheels, for example, are made from flip flop sandals. The cardboard is also recycled and is advertising for a company that sells condoms. Using condoms is one way to prevent the spread of HIV through sex. Can you tell me some other ways to prevent the spread of HIV?...(abstinence, monogamy). What about a vaccine or shot to prevent HIV like the flu?... (there is no vaccine to prevent HIV)



This poster was made by an artist named Keith Haring who found out he had AIDS in 1988, and died of AIDS in 1990. He started the Keith Haring Foundation to give money and artwork to AIDS related organizations. This poster was used to raise awareness about AIDS by an organization called ACT UP. The slogans, as you can see, say ignorance=fear and silence=death. Since there is no cure for AIDS, many people try to fight AIDS through education and awareness.



In fact, this picture is called Awareness. It was made by an artist named Crystal Adkins. You see this ribbon? The red ribbon has been used as a symbol of AIDS awareness. You may have seen other awareness ribbons, like a pink one for breast cancer. Adkins specifically made this ribbon grey to show that AIDS is not so different from other illnesses, even though there may be more stigma and discrimination toward people with AIDS.

In these last two paintings there is also a common theme. These figures in the Haring poster represent a phrase you may have heard “see no evil, hear no evil, speak no evil.” Similarly, in Adkins’ work, we see eyes, ears, and a mouth covered by the ribbon. This is because AIDS is often something that is not talked about, especially these days in the United States. But at the AIDS Museum, we believe that looking at the artwork, and listening to peoples’ stories about HIV and sharing this information with others is the only way to stop the spread of HIV. So this is why we brought the art exhibit to you today

Curriculum Vitae
Ashley Grosso

- 1984 Born, July 27 in Syracuse, New York
- 2002 Graduated from Paul V. Moore High School in Central Square, New York
- 2002-2006 Attended Seton Hall University in South Orange, New Jersey
- 2006 B.S. in Diplomacy and International Relations from Seton Hall University
- 2006-2007 Assistant Director, Center for Community Research and Engagement,
Seton Hall University
- 2006-2008 Attended The New School in New York, NY
- 2008 M.S. in Nonprofit Management from The New School
- 2008-2011 Attended the School of Public Affairs and Administration, Rutgers
University, Campus at Newark, New Jersey
- 2010 Article: Grosso, A.L. Social support as a predictor of HIV testing in at-
risk populations: A research note. *Journal of Health and Human Services
Administration*, 33(1): 53-62.
- 2011 Book review: Grosso, A.L. Public administration in the age of AIDS.
Public Administration Review, 71(2): 308-310.
- 2011 Ph.D. Public Administration, School of Public Affairs and Administration,
Rutgers University, Campus at Newark, New Jersey