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Teenage pregnancy is a major public health concern facing the United States. While there has been a vast decrease over the past decade, teenage pregnancy continues to negatively impact the life course of both teenage parents and their offspring. Further, North Carolina has one of the highest rates of all 50 states. In partial recognition of this, House Bill 88, aka the Healthy Youth Act, was passed mandating all school districts adopt at minimum abstinence plus reproductive health and safety curriculum by the end of the 2011 school year. However, evidence suggests that there will be unequal adoption, with some school districts not adopting, some will still be adopting and some having completed adoption. The study presented seeks to account for not only the perceived attributes of the policy but the contextual and environmental elements that influence the adoption of an innovation.

The goal of the study was to apply the Diffusion of Innovations (DOI) framework to explain the rate of adoption of the Healthy Youth Act by the school districts. The aim was to gain an understanding about how the perception of a policy and the environment in which it exists contributes to adoption and what policy makers and communities can do to increase the likelihood of policy adoption.

A mixed methods approach was used. First, a survey assessing the perceived attributes of the policy was distributed to curriculum coordinators, followed by interviews to understand what elements contribute to the difference in adoption between school districts. Using SPSS for the survey, frequencies and individual t-tests were used to

investigate how the perceived attributes of an innovation contribute to adoption. Content analysis was used to analyze narrative profiles from the interviews focusing on how the elements of Diffusion of Innovations and the community contribute to and explain the different rates of adoption.

The survey results indicated that relative advantage and compatibility are significantly associated with policy adoption. This was further supported by the interviews, with participants discussing how the new policy allowed them to better educate and meet the needs of the student population. Finally, perceptions of the community influenced the process undertaken to adopt the policy, leading to greater transparency than necessary.

Based on the findings, the DOI framework is an effective way to assess policy adoption. The framework indicates that policy makers should work to educate school administrators on the relative advantage and compatibility of new policies with meeting the needs of the students. Additionally, the community needs to be involved and considered throughout the adoption process. Finally, with school districts nationwide moving towards end-of-year testing for health topics, the DOI framework can offer insight into why programs are or are not effective and what needs to be done to improve the likelihood of successful program adoption.

ELEMENTS CONTRIBUTING TO THE RATE OF ADOPTION OF THE HEALTHY
YOUTH ACT IN NORTH CAROLINA SCHOOLS

by

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To my family:

~ Throughout my life and education, I have known that you are always there to provide support, guidance in my endeavors. The skills and strength you have given me enabled this to happen.

APPROVAL PAGE

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CHAPTER I

INTRODUCTION AND LITERATURE REVIEW

Overview

Adolescent sexual activity is an ever-present public health issue. Data shows that there was a 15% decrease in sexual activity among teenagers in the 1990s, which was maintained during this past decade (Pregnancy, 2009b). The 2009 Youth Risk Behavior Survey data reveals that the overall rate of sexual activity among 9th through 12th graders decreased 15% from 1991 to 2009. Accompanying this decline in sexual activity is a corresponding decline in teenage pregnancy. From 1990 to 2002, there was a 36% decline in teenage pregnancy, which has been attributed to increased abstinence and exposure to contraceptive methods (J.S., Duberstein Lindberg, Finer, & Sing, 2007; Santelli J.S., 2007; Santelli, Duberstein Lindberg, Finer, & Sing, 2007). Finally, the national rate of gonorrhea and chlamydia has decreased among both male and female teens (Douglas Kirby, 2007).

North Carolina has experienced a greater rate decrease in teen pregnancy than the one seen nationally. From 1991 to 2009, North Carolina experienced a 36% decrease in pregnancies for those aged 15-19 (Martin et al., 2009), dropping North Carolina down to 13th highest rate nationwide, lower than it has been in over a decade (Kost, Henshaw, & Carlin, 2010). This is also reflected in the STD rates, with the rate of chlamydia increasing and gonorrhea decreasing from 2006-2010 (Services, 2011).

To help facilitate a continued decline in teenage pregnancy rates, in 2009 the North Carolina General Assembly passed House Bill 88, aka “The Healthy Youth Act”. The Act requires that all North Carolina school districts select and implement at minimum a family life curricula that promotes not only abstinence but provides accurate information on contraception, safe sex practices, and healthy relationships to its students. However, the decentralized structure of the state’s education authority (Department of Public Instruction), the vagueness of the bill’s language, the lack of funding for its implementation and the diverse nature of North Carolina’s population creates doubt as to the degree of implementation the bill will experience. The proposed research study utilizes the Diffusion of Innovations as a framework to investigate the rate of adoption of the Healthy Youth Act statewide.

The literature review below begins first by reviewing the teenage pregnancy prevention literature, including rates and consequences of teenage birth. It is then followed by a discussion of curriculum based strategies to reduce and prevent pregnancy prevention. Schools as a setting for public health interventions are reviewed and the Mintzberg (1979) framework of organizational components is applied to schools. This is followed by examining how public policy is implemented within organizations. Finally, an explanation of the Diffusion of Innovations (Rogers, 2003a) and its appropriateness for analyzing the adoption of the Healthy Youth Act are explored.

The goal of this mixed methods study is to understand the rate of adoption of the Healthy Youth Act within and between counties through use of the Diffusion of Innovations (DOI). The aim is to understand which DOI factors contribute significantly

to adoption so that policy makers can use this knowledge to increase the adoption of future policies. The proposed research questions are shown in table 1 below:

Review of the Literature

Teenage pregnancy is one of the major public health crises facing American society today. Every year, approximately 750,000 teenagers (ages 15-19) become pregnant (Institute, 2006) and the majority will give birth. In 2001, the annual cost of teenage pregnancy was an estimated \$9.1 billion, with total expenditures reaching \$161 billion between years 1991-2002 (Hoffman, 2006). Overall, 53% of welfare funds are spent on families in which at least one child was born when the parents were still teenagers Hoffman (2006).

However, the intangible costs of teenage pregnancy and parenthood are far greater. Research shows that teenage parents experience worse health and life outcomes than their peers. Teen parents are less likely to receive consistent prenatal care than those who wait to have children (Dimes, 2009). About one in four of teenage moms will experience a secondary pregnancy within two years of their first (Pregnancy, 2009b). After the birth, only 40 percent of teenage mothers graduate from high school (Hoffman, 2006). Teen fathers have been found to suffer from low educational attainment and a decrease in lifetime earnings due to fatherhood (Brein & Willis, 1997; Hoffman, 2006). Eight out of ten teen fathers do not marry the mother of their first child and pay less than \$800 annually in child support (Brein & Willis, 1997). As a result, the National

Campaign reports that over 75 percent of unmarried teen moms go on welfare within five years of giving birth.

Unfortunately, marriage does not necessarily create a positive environment for children of teenage mothers. Teen mothers who marry are more likely than their unmarried counterparts to have multiple children spaced closely together (Pregnancy, 2004). This equates to an increased rate of “premature birth, low birth weight, and lower quality and quantity of parental time” (Hoffman; Pregnancy, 2004). Further, teens who marry have a higher than average divorce rate than older couples (Pregnancy, 2004). Additionally, research suggests that women who experience unwanted or unplanned pregnancies are more likely to experience physical abuse before and during the pregnancy than those whose pregnancies were planned (Logan, Holcombe, Ryan, Manlove, & Moore, 2007).

Consequences of Teen Pregnancy

The negative consequences of teenage parenthood extend beyond the teenage years. Research has suggested that mothers of unplanned children experience worse mental health than those who planned their pregnancies (Grussu, Quatraro, & Nasta, 2005; Hardee, Eggleston, Wong, Irwanto, & Hull, 2004). The trend is perpetuated in teenage motherhood. Biello, Sipsma and Kershaw (2010) found that prior to parenthood, teenage females had the same level of mental health but for 4 years following the birth, teenage mothers experienced lower mental health than their non-parenting counterparts. Trends are similar for teenage fathers, with them reporting lower mental health after the

birth of the child to the mental health state of non-parenting males. Finally, Taylor's (2009) report on the midlife impact of teen pregnancy revealed that teen parents are likely to have elevated physical health problems, lower educational attainment, and less prestigious jobs than those who delayed parenthood.

Unfortunately, the consequences of teenage parenthood are not limited to the parents. Children of teenage parents are more likely to be born prematurely (Martin et al., 2009), increasing their likelihood of developing respiratory illnesses, mental retardation and other mental delays, dyslexia, hyperactivity, eye problems, and other health conditions. Children of teenage parents are two times more likely to experience abuse, 50 percent more likely to be held back a grade, to perform poorly on standardized tests, and to never finish high school (Haveman, Wolfe, & Peterson, 1997; Hoffman, 2006). Overall, only two thirds of children born to teen parents receive a high school diploma compared to 81% of those born to parents who delayed parenthood (Terry-Humen, Manlove, & Moore, 2005). Finally, daughters of teen mothers are three times more likely to become teen parents themselves (Hoffman, 2006), whose offspring are likely to experience the same life outcomes.

Because of these negative consequences, several campaigns emerged over the past two decades to decrease the rate of teen pregnancy. These efforts resulted in a 36% decline in teenage pregnancy from 1990 to 2002. Industry experts, including the CDC and Kaiser Family Foundation, hypothesize that a combination of increased access to contraceptive methods and abstinence has led

to the decrease in teenage pregnancy (Santelli et al., 2007). This led to the lowest United States teenage pregnancy rate in 30 years. Such efforts led to a projected savings of \$161 billion between 1991 and 2004 in childbearing costs associated with teenagers (Hoffman, 2006).

National Pregnancy Rates

While the overall teenage pregnancy rate is declining, the rate is disproportionately experienced by different groups of the population. The largest rate was amongst Hispanic teens at 86 per 1000, followed by non-Hispanic African Americans at 63.7, 54.7 for Native Americans and 26.6 for non-Hispanic whites (Hoffman, 2006). Singh and Darroch (2000) reported that while the overall teen pregnancy rate was 83.6 per 1,000, the rate for white teen female pregnancy rate was 52 per 1,000. The National Campaign (2006; Pregnancy, 2009a) reports that over half of all Hispanic and African American females will become pregnant at least once before turning 20 compared to 19% of their non-Hispanic white counterparts. Finally, Hispanic teens are most likely to give birth by age 20 (Pregnancy, 2009a).

North Carolina Pregnancy Rates

Unfortunately, the issue of teenage pregnancy is felt greater in North Carolina than the majority of the nation. The Adolescent Pregnancy Prevention Council of North Carolina (APPCNC) reports that North Carolina has the 9th highest teen pregnancy rate in the nation. According to the North Carolina Department of Health and Human Services, in 2007 the teen pregnancy rate was

63 per 1,000. Overall, there were a total of 53,602 births to teens aged 15-19 and 181 to adolescents aged 10-14 in 2009 (Carolina, 2009).

The estimated cost to North Carolina taxpayers for the children of teenage parents included \$54 million for public health care, \$36 million for child welfare, \$61 million for incarceration of the sons of teenage mothers, and \$105 million in lost tax revenue due to decreased earning of teenage parents (Strack, Brown, & Orsini, 2009). Further, they found that "...had birth rates not declined by 30% from 1991 to 2004, North Carolina taxpayers would have incurred an additional \$219 million" (p.5). (Strack et al., 2009).

Further, it is unlikely that a decline in teenage pregnancy will be seen in the near future. In 2005, Dr. Douglas Kirby conducted a review of teenage pregnancy prevention programs and identified over 500 risk and protective factors contributing to teen sexual behavior. In Kirby's 2005 review of teenage pregnancy prevention programs, community level components (unemployment, violence, community welfare) were identified as both affecting/contributing to the teenage pregnancy rate and being the least amenable to change. Currently, North Carolina is ranked 36th, experiencing a higher than average unemployment rate of 9.8% (Statistics, 2010). Additionally, the North Carolina uniform crime report rate is higher than the national average for murder (5.3 v. 5 per 100,000), property crime (3668.1 v. 3036.1 per 100,000), burglary (1149.5 v. 716.3 per 100,000) and larceny (2305.2 v. 2060.9) (Investigations, 2010). Finally, Dr. Phillips of the University of North Carolina, Chapel Hill reported that in 2006, 1.4 million

residents were uninsured in North Carolina, with 60% of those uninsured coming from a family with a median income of under \$38,700 (Phillips, 2008). With the current economic and health care crisis, it is unlikely these numbers will see improvement.

Sex Education in the United States

The conversation on the appropriate components for sex education often revolves around abstinence-only education and comprehensive sexuality education. However, these are only two of the three widely recognized categories of sexuality education. The full spectrum consists of *abstinence-only*, *abstinence plus* and *comprehensive sexuality education*. Below the definition intent and information covered by each, followed by evidence of what makes an effective sexual health education.

Abstinence-only education. Abstinence-only education focuses exclusively on the postponement of sexual activity until marriage. The argument behind abstinence-only education is that abstaining from sexual activity is the only way to always prevent unwanted or unplanned pregnancies and the spread of STDs. STDs and HIV are only discussed as a result of premarital sexual activity. If contraception is discussed, it is often in terms of failure rates rather than effectiveness (States, 2011). Further, these programs do not distribute information on family planning methods for those who choose not to postpone sex until marriage. Proponents of this method emphasize that abstinence-only education instills morality into youth and prevents undue mental, physical and

emotional anguish that engaging in premarital sex has on individuals. Critics of abstinence-only education believe that the approach does not provide youth with enough health information to adequately protect themselves (D. Kirby, 2007) and that the promotion of sexual activity within marriage borders on religious interference and may stigmatize those with different values or those who are not heterosexual (Santelli et al., 2007).

Abstinence plus education. Abstinence plus education still emphasizes that abstinence until marriage is the desired norm for American society but does introduce scientifically accurate information on contraception, STDs and HIV into the program. Information is required to discuss effective rates of contraceptive choices and provide family planning information for all youth (States, 2011).

Comprehensive sexuality education. According to the Sexuality Information and Education Council of the United States (SIECUS), comprehensive education starts in kindergarten and continues through 12th grade. These programs include age-appropriate, medically accurate information on a broad set of topics related to sexuality including human development, relationships, decision-making, abstinence, contraception, and disease prevention. They provide students with opportunities for developing skills as well as learning information.

Effectiveness of Sexuality Programs. Dr. Kirby (D. Kirby, 2007) published his analysis of over 450 articles on the effects of various sexual health programs. His analysis of the articles revealed that there were over 500 risk and

protective factors with preventing teenage pregnancy. As part of the review, Dr. Kirby found that there was little to no evidence indicating the abstinence only programs prevented sexual activity, reduced the number of sexual partners or hastened return to abstinence. However, he also found that there is no indication that abstinence only education led to an increase in sexual activity and number of sexual partners.

Kirby's results supported the effectiveness of comprehensive sexuality education. Of the 48 evaluated programs, two-thirds of those that were comprehensive were found to have a positive impact on sexual behavior. Over 40% were found to delay sexual initiation, decrease the number of sexual partners and increase the likelihood that contraception was used. Thirty percent of programs were found to reduce the frequency of sex and more than 60% were found to decrease the likelihood of unprotected sexual activity. Additionally, over 40% were found to positively impact more than one of the aforementioned areas. Finally, it was found that comprehensive sexuality education did not lead to early sexual initiation or increase sexual frequency in adolescents.

Schools as a Setting for Health Promotion

The use of school as a setting for health promotion is likely to improve the health and well-being of youth. This setting is considered appropriate for targeting youth because they are considered a captive audience during their tenure in the school system (Poland, Green, & Rootman, 2000).

There are multiple reasons for the use of schools to deliver health promotion programs. The first reason for the use of schools is time. Including kindergarten, the average child will spend 7 hours a day in school, 5 days a week for 180 days a year over 13 years. The second reason is the importance of schools in the social and physical development of children. Children develop relationships that become central to a child's social network (Poland et al., 2000) and provide a setting for targeted interventions and programs. Finally, the promotion of health is found to have a positive impact on learning. Studies show children who eat well, sleep, and exercise have better academic outcomes than those who do not.

This is not to say that schools are without disadvantages. Often times, health promotion programs are competing for shared or scarce resources, academic priorities and public opinion on importance level for children (Poland et al., 2000). This increased with the passage of No Child Left Behind, which put extra emphasis on the core subjects over the physical, mental and emotional health of children. This has been found to cut into elementary school recess and reduce the allotted gym and health class to provide more time and money to focus on the mandates of the law (Powell, Higgins, Aram, & Freed, 2009).

However, in order to understand the importance of schools in the development of positive health behaviors, one needs to understand the structure of schools/school systems and how policies and programs get accomplished. While there are many different ways to look at their structure, it is of utmost importance to understand the structural elements of the school system. By understanding the

underlining power dynamics and roles of personnel in determining curriculum (standard course of study for North Carolina), the target for examination can be found.

Structure of Schools

The examination of schools and school structure emerged from the field of organizational structure and management. Henry Mintzberg (1979) theorized that there are three basic elements of any organization: operating core, administrative component and support staff. The operating core consists of those who perform the basic tasks of the organization. The support staff are specialists who provide support services for the organization but operate outside of the organization's operating world. Finally, the administrative components broken apart into three subcategories: strategic apex, the middle line and the technostructure. The strategic apex consists of the top administrators who ensure the organization operates effectively and consistently to its mission. The middle line consists of administrators who link the strategic apex to the operating core. These individuals are the senior managers, who have direct authority and supervision over the operating core. Finally, the technostructure consists of administrators whose primary responsibility is the planning and training of the organization (Mintzberg, 1979). These individuals are removed from the operating work flow as, "...they may design it, plan it, change it, or train the people who do it, but they do not do it themselves" (p. 29-30).

Figure 1 is adopted from Chance Chance (2009) displaying the connection of Mintzberg's basic elements of organization to that of the school system. As shown, the strategic apex of the school system consists of the superintendent and assistant superintendent. These individuals are charged with managing and overseeing the inputs (curriculum), processing (diffusion), output (test scores) and direct support tasks of the school districts. The middle line consists of school principals and vice principals, who are in charge of administering the components above within their individual system. The operating core or teachers are those in charge of carrying out the basic work of the organization. The technostructure, as shown, is outside the direct oversight of the strategic apex, is charged with standardizing the work of others within the school district. Finally, the support staff carries out work outside the direct mission of the organization but nonetheless enables the other four groups to operate effectively.

While all school systems have the same basic structure, the way and quality in which the various elements interact with one another determine the type of school organization that exists. The way in which these mechanisms are executed within the school system influence the way in which decisions are made and who has power and authority within the organization. These five mechanisms are:

1. Mutual adjustment where coordination is achieved through informal communication among workers.

2. Direct supervision where one person is responsible for monitoring and overseeing the work of others
3. Standardization of work where work procedures are prescribed and specifically outlined
4. Standardization of output where expectations of products and performance are specified.
5. Standardization of skills where training, skills, and knowledge to perform tasks are uniform among workers in various specialized areas.

It is the chosen mechanism of focus described above that determines the type of organization and therefore how the power and authority is distributed among the five components. The five types of structures are: simple structure, machine bureaucracy, professional bureaucracy, divisionalized organization and adhocracy. In the simple structure, the primary mechanism is direct supervision of individuals and units, with “little to no technostructure, few support staffers, a loose division of labor, minimal differentiation among its units and a small managerial hierarchy” (Mintzberg, 1979). A machine bureaucracy relies on standardization of work processes to ensure work is standardized amongst the operating core and support staff. The professional bureaucracy’s prime coordinating mechanism is the standardization of skills across highly specialized positions. The Divisionalized form relies on the standardization of output based on market demand. Finally, the adhocracy is categorized by mutual adjustment in all sectors through informal mechanisms to ensure maximum efficiency in organization. Based on these descriptions and knowledge of the North Carolina school system, the majority of the power is held by the individual school districts

rather than those at the Department of Public Instruction. This by definition makes North Carolina schools a professional bureaucracy, where “...standardized skills are very important but where the administrative control is more decentralized with power in the hands of the professionals” (Chance, 2009).

This classification as a professional bureaucracy influences the way in which new policies are implemented in school districts or local educational authorities (LEAs). First, a policy is passed through various avenues and is given to DPI. The policy is then reviewed and given to the head of the each strategic apex, the local educational authority’s superintendent. It is this step that starts the decentralization of power and creates differences in diffusion of implementation across LEAs. Once reviewed by them, the technostructure is involved to help identify the course of study which will meet, at least, the minimum requirements of the policy. These are in made available for public comment prior to diffusion and implementation in the district schools. This process of public comment and diffusion is described in further detail in the coming sections. Once the course of study is approved, it is distributed to the middle line and operating core of the school system. The operating core is then trained on the course of study to help ensure standardization across the system.

It is this classification as a professional bureaucracy that contributes to the implementation of the Healthy Youth Act. With each new iteration in policy diffusion and implementation, it is left to the hands of the LEA’s Superintendent to determine whether or not to institute the policy and to what degree it should be

adapted and the curriculum coordinators to select and determine the individual district's course of study. This discretion contributes to the (perceived) diversity in sex education programs throughout the state.

It is based on this organizational structure and job roles that the study's target population of interest will be the technostucture or curriculum coordinators in charge of selecting the standard course of study for their LEA. This decision was based on several elements. First, the goal of the study is identify which LEAs have adopted a course of study which incorporates the elements of the Healthy Youth Act. As this decision is made at a district level and the curriculum is chosen by the curriculum coordinators, they are the logical source of information. Second, while it would be advantageous to survey individual schools, their principals and the health educators, their inclusion at this stage is not warranted. The goal is to determine who is adopting the act and who isn't. Further, different LEAs have different personnel positions in charge of executing the health curriculum. For instance, Guilford County employs a core group of health educators who travel to each school to deliver the reproductive health and safety (the name for sexuality education in North Carolina) curriculum, while others train physical education teachers to give it. Third, the decision to survey individuals at the upper level is supported by anecdotal evidence. Through personal conversations with DPI staff, it was found that a few counties have outright told them they would not be implementing the Healthy Youth Act and that there was nothing they could do to force them into compliance.

History of Sex Education in North Carolina

Reproductive health and safety education within the North Carolina School System has been in flux in recent decades. Prior to 1996, the North Carolina school system taught comprehensive sexuality education. However, in 1995, this policy was repealed and replaced with curriculum emphasizing abstinence until marriage (AUM). In 1996, federal funding (title V) was made available to states teaching abstinence only education, thus strengthening the hold the curriculum had in place.

Under the abstinence until marriage policy, the following information was standard within the school system. First, the law required schools to teach that “abstinence from sexual activity outside of marriage is the expected standard for all school-age children” (Instruction, 2006) (p. 40). Second, teach and emphasize the risks of premarital sexual activity. These included but were not limited to the health and emotional problems that engaging in sex before marriage could cause. Third, present techniques and strategies to deal with peer pressure and offer positive reinforcement. Fourth, present reasons, skills and strategies for remaining or becoming abstinent from sexual activity. Fifth, provide factually accurate biological information related to the human reproductive system. Sixth, teach that, “a mutually faithful monogamous heterosexual relationship in the context of marriage is the best lifelong means of avoiding sexually transmitted disease, including HIV/AIDS” (Instruction, 2006) (p. 40). Seventh, schools had to provide information on both the effectiveness and failure rates of current

contraception in preventing pregnancy and sexually transmitted diseases. Finally, schools need to provide opportunities for parent/child interaction throughout the curriculum (Instruction, 2006).

It is of note that the old North Carolina policy gave schools the ability to teach more than abstinence until marriage and provide comprehensive sexual education by holding a public hearing to promulgate proposed changes to the curriculum, that the objectives and all new materials be available for public review at least 30 days before the hearing, that parents and guardians be available to review new materials for at least 30 days after the hearing, and allow parents to opt their child out of any sexual health education. There is no statistical data on how many school systems in North Carolina implemented more than abstinence until marriage education; however personal conversations with field professionals suggest that several school districts have been teaching comprehensive sexuality education.

Since the repeal of comprehensive sexuality education in 1995, advocacy groups statewide, including but not limited to adolescent pregnancy prevention groups, women's rights organizations and health educators, have sought the reinstatement of abstinence plus or comprehensive education (United, 2008). For seven consecutive legislative sessions these groups would seek to introduce new policy but were unsuccessful in getting it passed.

This trend changed in the 2008-2009 legislative session. At the start of the legislative year, two sister bills were introduced advocating for a more

comprehensive approach to sexuality education: House Bill 88 and Senate Bill 221. These two were later reconciled and combined into House Bill 88 to form what is now known as the *Healthy Youth Act* in North Carolina. After passing the Senate with a 25-21 votes and the House with a 60-55 vote, Governor Perdue signed the bill into law on June 29, 2009 (States, 2010).

The new *Healthy Youth Act* became effective at the start of the 2010-2011 academic year. While some of the requirements from the old policy were maintained, several changes were made. The new requirements for sexuality education under The Healthy Youth Act are listed below (Assembly, 2009):

- Material used be based on scientific research that is peer reviewed and accepted by professionals and credentialed experts in the field of sexual health education
- Teaches about sexually transmitted diseases. Instruction shall include how sexually transmitted diseases are and are not transmitted, the effectiveness and safety of all federal Food and Drug Administration (FDA)-approved methods of reducing the risk of contracting sexually transmitted diseases, and information on local resources for testing and medical care for sexually transmitted diseases. Instruction shall include the rates of infection among pre-teen and teens of each known sexually transmitted disease and the effects of contracting each sexually transmitted disease. In particular, the instruction shall include information about the effects of contracting the Human Papilloma Virus, including sterility and cervical cancer.
- Teaches about the effectiveness and safety of all FDA-approved contraceptive methods in preventing pregnancy.
- Teaches awareness of sexual assault, sexual abuse, and risk reduction. The instruction and materials shall:
 - Focus on healthy relationships.

- Teach students what constitutes sexual assault and sexual abuse, the causes of those behaviors, and risk reduction.
- Inform students about resources and reporting procedures if they experience sexual assault or sexual abuse.
- Examine common misconceptions and stereotypes about sexual assault and sexual abuse.

As with the previous reproductive health and safety education policy, families are given the opportunity to opt out from the new curriculum and school systems are allowed to expand upon the information given through the process previously described. Table 2 below displays the common ground and differences between the Healthy Youth Act and the previous policy.

However, the policy does not define the particular curriculum to be used to meet the requirements of The Healthy Youth Act and the Department of Public Instruction has not provided a list of approved curriculum for LEAs to consider. Additionally, the standard course of study has not been updated to reflect this new policy and will not be updated until 2012. Finally, the policy itself is an unfunded mandate with no formal structure set up to oversee its implementation. This leaves and creates much implementation variability between school districts.

Some efforts have been spearheaded to assist counties in complying with the new curriculum. The North Carolina School Health Training Institute at Appalachian State University has developed teaching modules to fill the gaps in the current approved curriculums being used. The Adolescent Pregnancy Prevention Campaign of North Carolina developed a Request for Applications to

provide funding and training for LEAs to adopt new curriculums. Finally, several community-based organizations, such as the Family Life Council of North Carolina, have already developed programs which can be taught and implemented in the school system.

Landscape for the Healthy Youth Act

As described, the Healthy Youth Act constitutes a significant departure from the prior policy. While some LEAs have been teaching a more comprehensive form of sexuality education, it is likely that a significant number will need to modify or change their current curriculum. The need to change does not necessarily create the context or landscape for successful adaption to occur. With any systems change that affects both children and their health and wellbeing, there exist numerous stakeholders who will influence the implementation of the new policy. These include school personnel, the school board, superintendent of schools, parents, students, elected state officials and community members. To understand each stakeholder's stance on the issue, one needs to consider different factors likely to influence their opinions: political, social, economic, practical and legal.

Legal Factors

The issue at hand has been created by legal action. The Healthy Youth Act was passed in 2009 with an enactment date of 2010-2011. By this time, schools are to have selected a new curriculum or created modules to supplement the old one to meet the legal requirement. The bill states what is necessary to be

in compliance but leaves much room for variation. No one curriculum has been chosen by the state, creating uncertainty among LEAs. Further, it is unclear who is actively monitoring the implementation to ensure the requirements are met. Finally, personal conversations reveal that some groups fear that the new bill will be repealed during the next legislative session.

Political Factors

Sex and sexuality are controversial issues in American society. When coupled with adolescents and society's youth, the issue can become volatile. As previously demonstrated, teenage pregnancy prevention is a front-burner issue, one felt passionately by both conservatives and liberals alike. However, the approach taken by each differs greatly. According to public record, the majority of votes for the Healthy Youth Act were from democratic candidates. Further, no Republican candidate sought to sponsor the bill during this past legislative session, creating little bipartisan support for the bill.

Nationally, there has been a political push for the passage of more comprehensive sexuality education. As one of his first acts, President Obama repealed Title V, which provided funding for abstinence only education. Since this time, Title V has been reinstated but with the provisions that funds can also be used for mental health and substance abuse prevention in teens.

Social Factors

For the public and community members at large, a recent survey conducted in North Carolina revealed that the vast majority of parents (over 95%)

approve of comprehensive sexuality education in the schools. Further, the opt-out option has been created for parents vehemently opposed to the schools teaching their children about sex. This, in theory, should create peace of mind for LEAs who adopt the Healthy Youth Act.

Unfortunately, this may not always be the case. As personal conversations with Adolescent Pregnancy Prevention advocates revealed, a vocal minority appeared at the majority of community meetings to oppose the passage of The Healthy Youth Act. It is this same minority who advocates fear will attempt to prevent a more comprehensive approach from being taught. This has the ability to create a climate of fear in the school system, either preventing the successful adoption of The Healthy Youth Act or necessitating LEAs to withhold information on innovative solutions to the problem.

In either case, the students will be affected. On one hand, they have the chance to learn accurate and comprehensive reproductive health and safety information in the schools and on the other, they have a great chance of being denied this right. The group that stands to benefit the most from the passage of The Healthy Youth Act has the least control over the outcome.

Economic Factors

As stated, The Healthy Youth Act is an unfunded mandate during a time of economic crisis. North Carolina is projecting a budget shortfall of \$3.8 billion in 2012 (McNichol, Oliff, & Johnson, 2011). Schools are expected to comply during the 2010-2011 academic year with little fiscal support from the state. This

will likely create a large gap in levels of implementation throughout the state. Some LEAs will have to do minimal changes to comply while others will need to do a complete overhaul of their reproductive health and safety education. Without adequate support, some school boards may be unable to institute the law and argue for a continuance or exception. In the meantime, state officials are focusing on ways to fill the holes in the budget, making it unlikely for the allocation of funds to assist slow adopters in creating change. This unfavorable political climate will likely mean that diffusion of the bill will not fully occur during the mandated time period.

Practical Factors

There are many practical factors to be considered. In all likelihood, there will not be full adoption of the Healthy Youth Act during the specified time period. Many community bodies and advocacy organizations are offering assistance but not all schools will qualify to receive it. Further, with no active monitoring, the incentive to implement is low.

This does not mean that this problem should be put on the back burner. As shown, North Carolina consistently has one of the highest teenage pregnancy rates in the nation. While the upfront cost of implementing such a requirement may be high, preventing teenage pregnancy will likely save millions in health care costs, social welfare programs and education. During this time of economic crisis, such savings should not be ignored.

This means that the school boards, community leaders and the state department of education need to recognize that they have a vested interest in ensuring the Healthy Youth Act's implementation. LEAs which lag behind others need to be given assistance to comply next school year. Programs and solutions need to be easily adaptable to increase the likelihood of sustainability. Finally, "low hanging fruit" needs to be documented and promulgated to demonstrate the success of new programs.

How Policy Is Implemented

There are three main phases to the policy making process: policy formulation phase, policy implementation phase and the policy modification phase. The proposed project will be focused on phase two, policy implementation. Within this phase, there are two stages: rulemaking and operationalization.

Rulemaking is defined as the "establishment of the formal rules necessary to fully operationalize the intent embedded in public laws" (Longest, 2006). While the policy itself is often developed by the legislative branch (the North Carolina Legislature), it is up to the executive branch to establish the rules of operationalization. The policies passed are often vague on implementation details, leaving much room for interpretation. Therefore, the process of rulemaking often occurs in five steps: grant of rulemaking authority, proposed rule stage, final rule stage, review, and effective date.

However, the way rulemaking occurs varies based on the societal level the policy was developed and meant to influence and the overall structure of the implementing organization. As discussed, the North Carolina School System or Department of Public Instruction (DPI) is a professional organization, with a decentralized power base. This structure is echoed in all phases of the policy rulemaking process. The first step, granting the rulemaking authority, was given by the legislature to DPI. DPI has not promulgated any further clarification for LEAs, instead opting to wait for the 2012 revision of the North Carolina Standard Course of Study.

This lack of specificity is creating variability with step two, the proposed rule stage. Each LEA is in charge of selecting a reproductive health and safety curriculum which best meets the needs of their county and aligns with The Healthy Youth Act. The curriculum is then, by legislative mandate, required to be made available for public comment prior to any official adoption.

Step three, the final rule stage, will be heavily influenced by the actions in step two. Some school districts will receive overwhelming support for the changes while others will experience resistance from the community. Schools districts may be forced to adopt a curriculum they do not believe in, creating an organizational climate opposed to the changes. Others will be able to implement a program that reflects the norms and values of the school system, resulting in great compatibility between the schools and the new program.

Step four, review, will happen to varying degrees. As discussed, there is no active oversight by DPI for the policy's adoption. Therefore, the task of review will likely be picked up by the policy's stakeholders, both those who were for and against the new curricula. The last step is when the agreed upon rules become active.

After the rulemaking stage, the policy enters the operationalization stage. The operational stage "...involves the actual conduct or running of the programs and processes embedded in enacted public laws" (Longest, 2006). Within this stage, two variables will influence how successful it is: the policy itself and its construction and the characteristics of the organization in charge of the policy's adoption.

The first variable, the policy and its construction, has the ability to influence policy adoption in a few ways. First, the policy goals and objectives need to be clear in order for the policy to achieve its intended outcomes (Morone, 1990). All elements of the organization need to understand what they are doing and why. Effective communication channels need to be established to influence coordination between the multiple levels and create a stronger likelihood of successful diffusion.

Second, the underlying theory or hypothesis of the policy needs to be clear. If the actions of the policy cannot reasonably lead to the intended outcome, the policy will likely fail (Thompson, 1997). The resources available need to be able to achieve the policy's goals.

Finally, the degree of flexibility in the policy needs to be limited. This does not mean that each LEA needs to have the same program but rather the amount of ambiguous language is limited. Ambiguity in the rules and policy intent can increase the complexity of adoption and lead to frustration in school personnel. The goal should be to streamline activities and chose a program that is easy to understand and adopt in the school (Longest, 2006).

The second variable of successful policy adoption and operation are the characteristics of the implementing organization. Perhaps the most important factors to consider are whether, “...(1) the organization is sympathetic to the policy’s goals and objectives and (2) the organization has the necessary resources, in the form of authority, money, personnel, status or prestige, information and expertise, technology, and physical facilities and equipment, to implement the policy effectively” (Longest, 2006).

The level of sympathy provided by the organization towards the policy’s goals and objectives is important at all levels of the administration. The curriculum instructors are in charge of selecting a program that best fits the needs and values of their organization. The school board is in charge of defending the selection to the public at large. The school administrators need to ensure that the teachers are trained in the curriculum and that they are teaching it with reasonable fidelity. Finally, the teachers themselves need to deliver the curriculum, with their degree of fidelity and commitment to the new policy likely dependent on their own personal values.

Therefore, the programs selected to meet the *Healthy Youth Act* need to reflect the organizational culture of the LEAs in terms of the prevailing norms and values within. By matching the program with the culture, greater compatibility will be achieved. Further, by matching the curriculum with the culture, the relative advantage of the new over the old will be inherently seen. The entirety of the organization will see the benefit of the curriculum both to the students and the community at large, leading them to champion for and adapt to the new way of teaching.

However, the chosen program needs to be selected both for its compatibility with the organizational culture but also for its compatibility with the organization's resources. Resources are both intangible (money, time, etc.) and tangible (teachers, physical space, lesson materials, etc.) elements needed to successfully execute the program. While the school system may want to adopt the most technical, up-to-date program available, the officials need to be realistic in what they can do. With budget cuts and a looming deficit, the program chosen needs to be something that can be sustained by the school system and still meet the requirements of the Healthy Youth Act.

As demonstrated, it can be challenging to disseminate new public health interventions, prevention programs and implement evidence-based programs. In particular, program and policy decisions made for those in charge of adoption create challenges during the adoption stage. In cases such as this, it is important to analyze the system of diffusion rather than the individuals (Glanz & Rimer,

2005). Diffusion of Innovations assists in this capacity by examining the steps and processes required to achieve widespread dissemination and adoption of public health innovations (Glanz, Rimer, & Viswanath, 2008; Rogers, 2003a, 2003b).

Diffusion of Innovations

According to Rogers, diffusion is the process by which, "...an innovation is communicated through certain channels over time among the members of a social system" (2003a). There are four major elements of the diffusion theory: innovation, communication channels, time and social system. Figure 2 is adapted from Rogers and displays each of the variables determining the rate of innovation adoption. Table 3 summarizes each element of an innovation, followed by discussion of each.

Innovation

An innovation is defined as, "an idea, practice, or object that is perceived as new by an individual or other unit of adoption" (Rogers, 2003a) . For the purpose of this study, the innovation in question is the Healthy Youth Act, with the chosen curriculum the method in which it is operationalized. Further, there are five characteristics of an innovation with contribute to the degree of institutionalization within the school system.

Relative Advantage. Relative advantage is defined as the degree to which an innovation is perceived as better than the idea it supersedes (Rogers, 2003a). If the Healthy Youth Act is perceived as being better than the previous

policy, it is likely that the new program will be adopted quickly; if perceived as being worse than its predecessor, it will likely not be adopted.

Compatibility. Compatibility is defined as the degree to which an innovation is perceived as being consistent with the existing values, past experiences, and needs of potential adopters (Rogers, 2003a). In order for an innovation to be perceived as compatible, it needs to be considered reflective of the organization's values, norms and situation (S. K. Bowen et al., 2010; Holloway, 1977; Longest, 2006). If the Healthy Youth Act is thought to be compatible, adoption will occur.

Complexity. Complexity of an innovation is defined as the degree to which an innovation is perceived as difficult to understand and use. Complexity is often related to technical requirements, conceptual sophistication or training needed to implement a new program (S. K. Bowen et al., 2010; Holloway, 1977; Longest, 2006). If the new requirements of the Healthy Youth Act as perceived as being complicated, adoption is likely to be delayed.

Trialability. Trialability is the degree to which an innovation may be experimented with on a limited basis (Rogers, 2003a). This characteristic is often seen as the ability to try parts or pieces of a new innovation before its full adoption (Moore & Benbasat, 1990).

Observability. Observability is the degree to which the results of an innovation are visible to others (Rogers, 2003a). The quicker results are seen to the general public, the more likely an innovation is adopted (Holloway, 1977;

Rogers, 2003b). For the Healthy Youth Act, observability of a previous successful program in a neighboring county may lead to quicker adoption of the new policy guidelines. However, lack of tangible results in the first years may lead others to delay adoption and may even cause retraction of the Act.

Based on this information, an innovation is likely to be adopted if it is seen as having a large relative advantage, compatible with social and community norms, simplistic, able to be slowly implemented and early successes are easily seen (Rogers, 2003a). Because the policy in question is being adopted via different innovations in one social system, previous research (Fliegel & Kivlin, 1966; Kearns, 1992; Rogers, 2003a) indicates that these characteristics be the focus of research. However, other elements need to be considered in the adoption of the Healthy Youth Act.

Innovation-Decisions

There are three types of innovation-decisions: optional, collective and authority. Optional innovation-decisions is where the choice to adopt or reject an innovation is left to the hands of each individual within the system. Collective innovation-decisions is what the decision to adoption is made by consensus. Authority innovation-decisions is where the decision to adopt is made by the oligarchy in power (Rogers, 2003a). Research demonstrates that even when a policy is mandated for adoption and implementation, the rate of adoption can still vary from entity to entity.

Communication Channels

A communication channel is the means by which messages get from one individual to another (Rogers, 2003a). Communication channels are categorized as either interpersonal or mass media and localite or cosmopolite. Mass media has been found to disseminate innovations quickly and efficiently while interpersonal involves face-to-face communication between a few individuals. Research has spoken that in order to increase the probability an innovation be adopted, communication channels need to first begin with mass media and to interpersonal communication (Copp, Sill, & Brown, 1958; Rogers, 2003a). Overall, research supports the following generalizations about the relationship between communication and adoption (Rogers, 2003b):

- a. Early adopters have more social participation than later adopters
- b. Early adopters are more highly interconnected through interpersonal networks within and outside their social system than later adopters
- c. Early adopters have more contact with change agents than later adopters
- d. Early adopters have more exposure to both mass media communication channels and interpersonal communication channels than later adopters.
- e. Earlier adopters seek information about innovations more actively than later adopters

- f. Earlier adopters have greater knowledge of innovations than later adopters

Social Structure

Social structure is defined as a set of interrelated units that are engaged in joint problem solving to accomplish a common goal (Rogers, 2003a). The structure of a social system is given stability by the individuals within. Additional elements contributing to structural stability are social norms, leadership and having a change agent advocating for the innovation (Rogers, 2003a). In particular, Rogers has found that the presence of a change agent or policy champion is important to the adoption of a policy on a sensitive topic. Research has found that the more an innovation contributes to the overall stability of an organization, the more likely it is to be adopted (Holloway, 1977; Rogers, 2003a).

Change Agent

A change agent is, "...an individual who influences clients' innovation-decisions in a direction deemed desirable by a change agency" (Rogers, 2003a). Generally, a change agent seeks to secure the adoption of new ideas but can work to slow or impede the diffusion and adoption process with organizations (Rogers, 2003a). Regardless, a change agent serves a critical link between a resource system and those receiving the innovation. Within the role of change agent, there are four factors that contribute to either facilitating or impeding the adoption of a new innovation. First, the amount of effort put into adoption is positively correlated with the rate of adoption. Second, the degree to which the change

agent has a client orientation (closer rapport with program recipients, high degree of credibility, etc) is positively correlated with adoption. Third, the innovation has to be perceived as compatible with the clients' needs. Finally, adoption success is associated with the degree of empathy the change agent has with the clients.

Time

Time is characterized by three phases: 1) the innovation-decision process by which an individual passes from first knowledge of an innovation through its adoption or rejection; 2) the innovativeness of an individual or other unit of adoption compared with other members of a system and 3) an innovation's rate of adoption in a system. The time in which it takes individuals to get from one phase to another contributes to how quickly a new innovation is adopted.

Rate of Adoption

All of the above elements contribute to the rate of adoption of an innovation. Based on Rogers (2003a), there are five levels of adoption: innovators, early adopters, early majority, late majority, laggards. Because of the timeframe in which adoption of the Healthy Youth Act is mandated by the law, adoption categories will be abbreviated from the original framework. These will include: innovators, adopters (early adopters and early majority), late adoptions (late majority) and non-adopters (laggards).

Policy Implications

The findings of this study will be used to further not only family life education in the North Carolina but also to further the field of public health education in the school system. First, the findings will be used develop a standardized survey to assist policy makers in assessing how well a new program is diffused within school systems and the characteristics or elements of the program that need to be address to increase compliance. According to Mintzberg (1979), most if not all school systems are professional bureaucracies, thereby decentralized by nature. As a result, most states and school districts will likely vary on what policies are implemented and how well they are done. In an age where accountability and results are emphasized, a standardized tool to assess how well policies and programs are diffused will assist in making informed decisions as to the future of school programs.

Second, the literature surrounding the experience of implementing a policy of a sensitive nature within the school system is sparse. As health educators, we instinctively know that not only personal but also community and institutional characteristics influence when and how well a program is adopted. By understanding the differences between the LEAs who were and were not successful in adoption, we can begin to develop a framework of understanding some possible ways to address these barriers. While the research is centered in North Carolina, it is likely the experience of adopting a controversial policy in the

school system is universal. The lessons learned from this research endeavor can be used elsewhere.

Finally, the difficulty of assessing a school, district or state policy is universal. The method of determining and selecting the appropriate target for a school policy study is one not highly covered in the public health literature. The rationale and structure of the school system was found in education and organizational behavior literature and used to inform this public health study. This borrowing and adaption of field knowledge will likely be beneficial to other researches as they attempt to negotiate their local school system.

Tables and Figures

Table 1: Research Questions and Hypotheses

Question 1	<p>What perceived attributes of the Healthy Youth Act are associated with its level of adoption?</p> <p><i>H1: Adopters of the Healthy Youth Act are more likely to indicate that the new policy is better than its predecessor when compared to non-adopters and those still adopting.</i></p> <p><i>H2: Adopters of the Healthy Youth Act are more likely to indicate their organizational culture is compatible with it than non-adopters and those still adopting.</i></p> <p><i>H3: Those who are still adopting the program will be more likely to indicate the Healthy Youth Act is complex than those who have adopted the program.</i></p> <p><i>H4: Adopters of the Healthy Youth Act are more likely to indicate they observed success in other LEAs than non-adopters and those still adopting</i></p>
Question 2	How did the role of social systems influence the rate of adoption of the Healthy Youth Act?
Question 3	What role did communication channels play in the rate of adoption of the Healthy Youth Act?
Question 4	What was the role of change agents in the rate of adoption of the Healthy Youth Act?
Question 5	What is the role of the community in the adoption of a new LEA policy?

Figure 1: Structure of School Districts

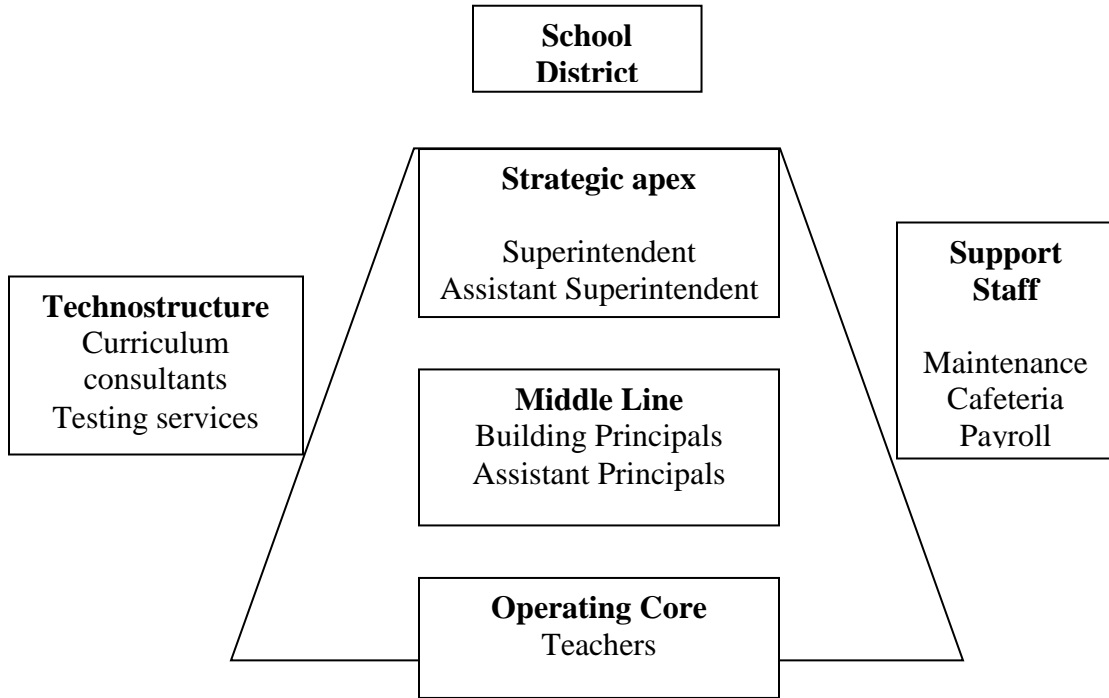


Table 2: Sex Education Policy and the Healthy Youth Act

Policy Mandate	Previous Policy	The Healthy Youth Act
Abstinence outside marriage is the expected standard.	X	X
Teach and emphasize risks of premarital sex	X	X
Present techniques to deal with peer pressure and offer positive reinforcement	X	X
present reasons, skills and strategies for remaining or becoming abstinent	X	X
provide factually accurate biological information related to the human reproductive system	X	X
a mutually faithful monogamous heterosexual relationship in the context of marriage is the best way to avoid STDs, including HIV/AIDS	X	X
Provide Information on both the effectiveness and failure rates of current contraception in preventing pregnancy and STDs	X	
Offer opportunities for parent/child interaction	X	X
Material used be based on scientific research that is peer reviewed and accepted by professionals and credentialed experts in the field of sexual health education		X
Need to present and discuss the effectiveness and safety of all FDA-approved contraception for the prevention of STDs		X
Need to present and discuss the effectiveness and safety of all FDA-approved contraception for pregnancy prevention		X
Teach and raise awareness around sexual assault, sexual abuse and risk reduction		X

Figure 2: The Diffusion of Innovations

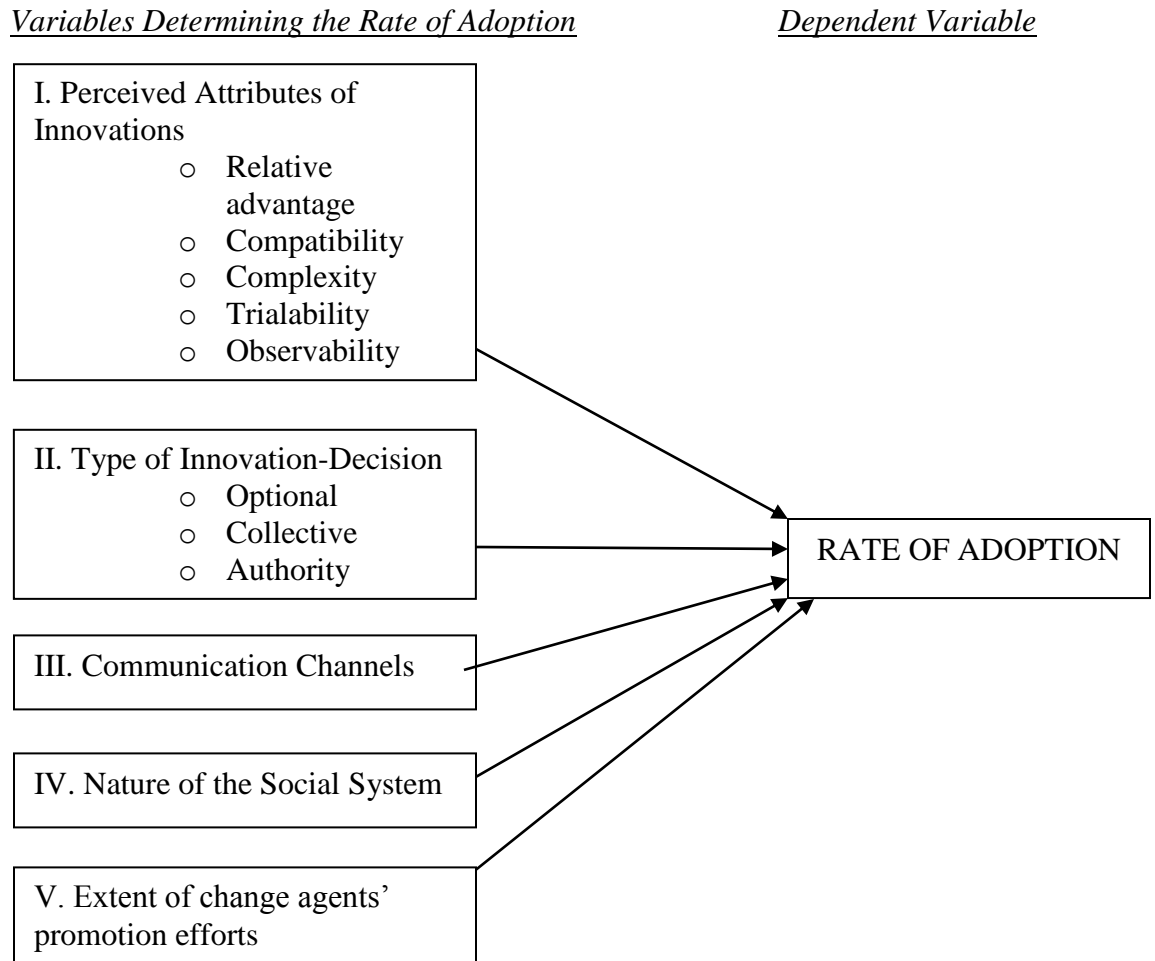


Table 3: Attributes of an Innovation

Concept	Definition	Application
Relative Advantage	The degree to which an innovation is perceived as better than the idea it supersedes	Point out unique benefits: monetary value convenience, time saving, prestige
Compatibility	Degree to which an innovation is perceived as being consistent with the existing values, past experiences and needs of potential adopters	Tailor innovation for the intended audience's values, norms or situation
Complexity	How difficult the innovation is to understand and/or use	Create program/idea/product to be uncomplicated, easy to use and understand
Trialability	Extent to which the innovation can be experimented with on a limited basis	Provide opportunities to try on a limited basis
Observability	degree to which the results of an innovation are visible to others	Assure visibility of results: feedback or publicity

CHAPTER II

METHODOLOGY

The purpose of this mixed methods dissertation research is to apply the Diffusion of Innovations to understand and explain the differences in adoption of the Healthy Youth Act. The research will be composed of three phases. The first is to pilot test a new instrument to assess the perceived attributes of the Healthy Youth Act. Phase two will be the full survey, where curriculum coordinators statewide will be asked to indicate the level of adoption the Healthy Youth Act has had in their district and what attributes have influences this rate. The third phase will be a series of interviews with curriculum coordinators from school districts who indicate they have a) adopted the Healthy Youth Act, b) are still in the process of adopting the Healthy Youth Act, or c) have not or will not adopt the Act. The results will be used to assist policy makers in understanding what elements of a policy are most influential in adoption and develop ways to increase the likelihood of adoption.

Research Questions

Table 4 displays the research questions to be answered by the described methodology. The research questions presented are adopted directly from the Diffusion of Innovations framework presented on page 30 of the literature review narrative. As

shown, all but one variable (innovation-decision) has a research question surrounding it. This is because the policy was mandated by the state of North Carolina and therefore the type of decision to adopt will not vary between LEAs. The fifth research question, while not directly displayed in Figure 1, was added for a variety of reasons. First, it contributes to the social system and environment in which the LEA is located. Second, through analysis of how educational policy decisions are made in North Carolina, it has been shown that the community can prevent innovations from being carried out or demand that a more comprehensive approach be taken. Finally, the landscape for the Healthy Youth Act and anecdotal evidence reviewed earlier suggest the community will have had some influence over its adoption.

Mixed Methods Approach

Mixed methods research is, "...an approach to inquiry that combines or associates both qualitative and quantitative forms [of research]. It involves philosophical assumptions, the use of qualitative and quantitative approaches and the mixing of both approaches in a study" (Creswell, 2009). These research approaches were developed as a way to maximize the benefits of research approaches and minimize the limitations each has on its own (Creswell, 2009). Further, the problems often addressed by public health education and related fields are often complex in nature, necessitating the use of multiple sources to adequately capture and address the topic at hand.

In the field of mixed methods research, there are three general approaches use: sequential mixed methods, concurrent mixed methods and transformative (theory-based) mixed methods. Sequential research methods are where the researcher wants to elaborate

one method of research through the use of another. Concurrent mixed methods are where both qualitative and quantitative data collection occur simultaneously and information is integrated for analysis. Finally, a transformative mixed method uses a theoretical lens to guide the research which contains both quantitative and qualitative elements.

For this project, the transformative mixed methods approach will be used. In this case, the theoretical lens or framework is the Diffusion of Innovations, which has been instrumental in conceptualizing this study. The result of the transformative mixed methods is often to prompt action of the individuals in which the topic affects. As discussed in the policy implications section of the literature review and the dissemination section below, the results of the study will be used not only to inform future studies but assist those in successfully introducing and adopting health education policy in different organizations.

Within the transformative mixed methods approach, a sequential strategy will be used. The first stage of research (divided into two phases) will be quantitative, followed by a qualitative approach to build and complement the first. Further explanations of each stage or phase of research is discussed below.

Study Design

This mixed methods study is designed to assess the level of adoption for the Healthy Youth Act in North Carolina schools and the difference between the school districts based on their level of adoption. The first phase will be to pilot test the survey instrument assessing the five program characteristics leading to adoption as defined by the Diffusion of Innovations framework. After analyzing the results and making the

appropriate changes to the instrument, phase 2 will survey the curriculum coordinators and/or lead health educators to determine the level of diffusion of the Healthy Youth Act in North Carolina districts. The third phase will be used to expand on the findings of the survey through the use of interviews to further understand the difference of the rate of adoption between LEAs. Phases one and two will be discussed first and phase three second.

Phase 1 & Phase 2: Quantitative Survey

Recruitment

In order to recruit participants, the following steps are being taken. First, state-wide agencies and organizations working with the Healthy Youth Act were approached and made aware of the project. These agencies were: Adolescent Pregnancy Prevention Campaign of North Carolina (APPCNC), the North Carolina School Health Training Center at Appalachian State University (the Center) and the North Carolina Department of Public Instruction (DPI). APPCNC and the Center have given support of the project and DPI, while not formal support, has agreed to not hinder the project and would like any results of the study shared with them.

For the first phase, the Assistant Superintendents from the various school districts will be contacted and invited to participate in the pilot survey. They will be informed of the intended use of the findings and that their results will only be used to improve the instrument. This method of pilot testing was designed based on conversations with Dr. Ric Luecht, professor of Survey Methodology in the Department of Educational Research

Methodology. He indicated that with a small total population, a survey can be piloted on a closely related population.

For the second phase a list of the curriculum coordinators or lead health educators at each LEA in charge of selecting the family life curriculum will be emailed and mailed a letter introducing them to the project and its intent. Pre-notification has been found to be successful in increasing the number of participants for a survey (Kaplowitz, Hadlock, & Levine, 2004). Approximately one to two weeks after the introduction letter is sent, the curriculum coordinators and/or lead health educators from each county will be emailed inviting them to formally participate in the study. At the end of the survey, they will be asked to indicate if they would consent to a follow-up interview to further understand the process of implementing the Healthy Youth Act.

Sample Size and Power

Because of the different project phases, the sample size and power for each will be addressed separately. For phase 1, all Assistant Superintendents will be invited to participate in the pilot survey. There are a total of 115 LEAs in North Carolina and the overall goal is to survey at least 30 Assistant Superintendents to ensure the analysis is meaningful.

For phase two, the curriculum coordinators in each LEA will be recruited for participation. The anticipated response rate is 40-50% based on a similar study with middle school principals (K. Wilson, Pruitt, & Goodson, 2008). Additionally, discussions with Dr. Terri Mitchell of the North Carolina School Health Training Center at Appalachian State University indicate that a response rate of 60% is achievable. Based

on this work, the anticipated response rate is approximately 50-60% or 56 to 70 surveys. If the desired anticipated sample size is not reached or the LEA in question does not have a curriculum coordinator, the survey will be extended to lead health educators. Similar to curriculum coordinators, there is approximately one lead health educator per LEA, making their anticipated response rate is the same as curriculum coordinators.

Description of Participants

There are currently 115 LEAs in North Carolina. Typically, each LEA has a curriculum coordinator and a lead health educator. The curriculum coordinator is in charge of coordinating the selection and implementation of school curriculum and the lead health educator works with the curriculum coordinator to train the local health teachers. The lead health educator is a supervisory position in charge of overseeing those who deliver the reproductive health and safety curriculum to students. A demographic profile of the individuals in this position will be created upon completion of the survey.

Survey Design

The structure and wording of the survey was largely based on previous work by Wilson, Pruitt and Goodson (K. Wilson et al., 2008), who utilized the DOI framework to analyze the likelihood of abstinence-only sexual health education adoption in Texas middle schools. However, because the survey is seeking to analyze an actual situation and retrospectively analyze policy adoption, other tools were also considered in the development of the survey. These tools came from education, computer technology and disease prevention/education (S. K. Bowen et al., 2010; Holloway, 1977; Moore &

Benbasat, 1990). Finally, the work of Rogers (2003a) on the DOI framework and Longest (2006) on public policy development and implementation were used.

Data Collection Procedures

To collect the data, the following steps will be taken. First, the survey will be made electronic using the Qualtrics software. Potential phase one participants will be contacted via email and invited to participate in the pilot study (Appendix A).

Individuals will be given a web address directing them to the study and will be re-invited to participate one week after initial contact. The individuals will be asked to give consent (Appendix B) prior to completion of the survey (Appendix C). Approximately two weeks will be given for survey completion with the goal of obtaining a minimum of 30 respondents. This may be extended if the minimum sample size is not obtained.

For phase two, there will be a few steps to sample and collect data. The results from phase one will be analyzed and necessary changes made to the survey based on the findings. Potential participants will get a pre-notification informing them about the study. One week later, each potential participant will be emailed, inviting them to complete the study (Appendix D). Two follow-up emails will be sent, one two weeks after the first and the final one a month later, with a total of six weeks allotted to this phase. Because the consent will occur online and identifying information will be collected, the long consent form will be used to duly inform individuals of their rights as study participants. Similar to Evenson et al. (2009) and based on feedback from Dr. Terri Mitchell, data collection will start during August and will likely conclude the first month of the 2011-2012 academic year.

When a participant decides to complete the survey, the email will contain a link directing them to the Qualtrics survey. Each person will be notified and given the survey link through the Qualtrics website to increase anonymity. Further, safeguards will be put into place to a) prevent the individual from taking the survey multiple times and b) allow participants to save answers and continue later. Prior to beginning, they will be consented and asked to give an electronic signature certifying they agree to the conditions of the study. After consenting, they will be directed to the first question. It is anticipated that the entire survey will take 10 minutes to complete. At the end of the survey, they will be asked if they consent to being interviewed to further discuss their experiences with the Healthy Youth Act. The web-based survey format was previously successful in Evenson, Ballard, Lee, and Ammerman (2009) study of the North Carolina policy to increase physical activity.

Measures

To assess the proposed research questions, measures were developed from the Diffusion of Innovations framework. The survey to be piloted in phase one and executed in phase two, will assess the five characteristics of programs (compatibility, complexity, trialability, observability and relative advantage) and how these influenced the adoption of the Healthy Youth Act. This decision was based on Rogers (2003a), who found that the diffusion of a policy in a decentralized organizational structure is best analyzed by these program characteristics. It is important to note that because of this decentralization, some counties were likely conducting abstinence plus education (or more) prior to the passage of the Healthy Youth Act. To capture this, participants are being asked to

indicate what type of program was in use before the Act was passed. It should be noted that these elements may be adjusted based on the results of the pilot survey.

The following constructs will be measured to determine the level of diffusion of the Healthy Youth Act:

Components of the Family Life curriculum. This construct will be measured both prior to the Healthy Youth Act and since its passage. The requirements were pulled from both pieces of legislation and put into table format. They will be asked to check off which elements their old and current curriculum contains. A score will be tallied to determine if they were previously instituting more than abstinence until marriage curriculum and if they are currently in compliance with the Healthy Youth Act. In order to be classified as adopters, participants need to indicate all elements of the Healthy Youth Act are incorporated in their curriculum.

Existence of Adoption of the Healthy Youth Act. Participants will be asked to indicate whether or not they adopted their reproductive health and safety curriculum to comply with the Healthy Youth Act. Participants will have the option of indicating whether adaption was needed, if the policy was adopted or is currently being adopted and whether they choose not to adopt. This will be used to filter them to one of two versions of the survey to assess adopters and those who chose not to adopt. Additionally, adopters will be asked to indicate the month and date in which they reached full adoption in their school district. Those still adopting will be asked to indicate how much of the process they have completed via percentage and a short description to determine the rate in which those still adopting are achieving.

Relative Advantage. Items to assess the relative advantage of the new curriculum are based on work done by Rogers (2003a), Wilson, Pruitt and Goodson (2008), Holloway (1977), and Bowen (2010). Items were constructed asking the participants to indicate how they feel about the policy compared to the previous, how the students like it, how the community reacted towards it, whether or not it makes it easier to promote positive family life, if the benefits outweigh the deficits, and the overall advantage of the curriculum. Items 21 (I believe that the Healthy Youth Act will better reduce the number of unwanted pregnancies among youth than the old) and 22 (I believe the Healthy Youth Act will better reduce/prevent the number of sexually transmitted disease among youth than the old) were adopted from the Wilson, Pruitt and Goodson (2008) study. All items are measured in a 4-point Likert scale (strongly disagree to strongly agree), similar to how previous studies measured the constructs.

Complexity. Items to assess the complexity of the Healthy Youth Act are based on work done by Rogers (2003a), Wilson, Pruitt and Goodson (2008), Holloway (1977), and Bowen (2010). Items center on the ease of program implementation, level of training required of health educators to adequately implement the program, and clarity of the Act's components and new curriculum. The complexity scale from Wilson, Pruitt and Goodson (2008) is used, which when originally assessed, had an overall Cronbach's alpha of .86. Items will be measured in a 4-point Likert scale (strongly disagree to strongly agree), similar to how previous studies measured the constructs.

Compatibility. Items to assess the compatibility of the Healthy Youth Act are based on work done by Wilson, Pruitt and Goodson (2008). The Act's compatibility will

be assessed both on the individual and organizational level to establish if there was congruence or incongruence in personal and professional norms and values. All items will be measured in a 4-point Likert scale (strongly disagree to strongly agree), similar to how previous studies measured the constructs.

Trialability and Observability. Items to assess the Trialability and observability of the Healthy Youth Act are based on work done by Rogers (2003a), Wilson, Pruitt and Goodson (2008), Holloway (1977), and Bowen (2010). The decision was made to measure these attributes together based on previous research indicating is this an acceptable and reliable measure of analysis and because the school districts will likely to have had little time to do either. Survey items 43 (The curriculum was chosen because I had seen it work in other schools) and 45 (The new curriculum or elements was easily incorporated into the district's standard course of study) are based off of Wilson, Pruitt and Goodson's work and the others incorporated elements found from all studies. All items will be measured in a 4-point Likert scale (strongly disagree to strongly agree), similar to how previous studies measured the constructs.

Demographics. Based on the literature and previously research of what determines adoption, the following individual demographics will be asked: age, gender, length of time in school system, degree and health education training, race/ethnicity, religious habits and the LEA they represent. These elements were previously found to influence the level of sexual health program adoption (K. Wilson et al., 2008). Additionally, the rural/urban nature of the community in which the LEA resides will be determined, as this was found to previously influence the adoption of health education

curricula (K. Wilson et al., 2008). Finally, they will be asked to indicate whether or not they consent to a follow-up interview to further explore their experience with the Healthy Youth Act.

Rate of Adoption. The outcome variable of interest is the rate of adoption the various LEAs and school districts have had with the Healthy Youth Act. The school districts will be categorized into one of four categories: non-adopters, still adopting/late adopters, adopters and innovators. Innovators will consist of those who already had a reproductive health and safety program meeting or exceeding the requirements of the Health Youth Act prior to its passage. To assess the level of adoption, questions 3, 6, 7 and 9 will be used to triangulate the status in each county. Because the goal of the study is to understand the rate of adoption, innovators will be excluded from analysis because they were using a reproductive health and safety program prior to the Healthy Youth Act and therefore will (likely) be unable to give insight into the adoption process.

Alternative dependent variables have been developed in case there is either extremely high adoption among the LEAs or there are several who are in the process of adopting. As indicated under the subsection *Existence of Adoption of the Healthy Youth Act*, the adopters can be further categorized based on the amount of time it took them to fully adopt the act. Analysis would then be run on the timeline of completion amongst adopters to determine if there is a difference in the five attributes between these LEAs. Similarly, the still adopting category is being asked to indicate where in the adoption process they are with the Act. The amount complete would be converted into categories

to determine the perceived similarities and differences of the Innovations attributes amongst the LEAs.

Data Storage and Management

According to IRB procedures and the study protocol, the participant information will be protected. After completion of the survey, the data will be exported into an excel file. The identification number and participant name will be kept in a separate file. In the data file, all identifiers will be removed. Finally, if a person agrees to participate in the follow-up interview, their contact information and name will be kept in a third file. Only the research team will have access to this information to ensure anonymity of persons and confidentiality of results.

Missing data. Upon completion of the survey, an analysis will be done to determine if missing data exists and the extent to which it occurs. A decision on whether not to exclude the individual will be based on how many sections are incomplete.

Data Analysis

Data analysis will be done after both phase 1 and phase 2. During phase 1, the goal of the analysis will be to determine the reliability of the survey instrument. To do this, Cronbach's alpha will be run both on the individual scales and on all scales. Further, inter-item correlations will be run to ensure that subscale items are better grouped with others of its own scale than those of a different scale. It will also be examined for potential confounding items which hurt the overall integrity of the scale. Based on this analysis, the items of best fit will be used in the survey.

In phase two, the goal of the analysis is to determine the level of adoption of the Healthy Youth Act based on the perceived attributes of the Healthy Youth Act. The first research question is primarily quantitatively based, the second a mix of quantitative and qualitative responses and the last primarily qualitative based. The demographics gathered will be used as control variables in the quantitative assessment. The first question will be addressed here and questions 2-5 addressed in the qualitative analysis section. The analysis plan for each research question is discussed below:

RQ1: What perceived attributes of the Healthy Youth Act are associated with its level of adoption? To investigate research question 1, the following steps will be taken. First, survey questions one and three will be used to determine the type of reproductive health and safety curriculum/policy was in place prior to the Health Youth Act. Then, using questions four and six through nine, the reproductive health and safety curriculum used after the required adoption deadline will be used to determine the level of adoption of the Healthy Youth Act. Based on these elements, the LEAs will be categorized into categories based on the level of adoption they have obtained. These will be: non-adopters, late adopters/still adopting, adopters and innovators. Innovators will be excluded from analysis for reasons previously defined. The remaining categories will form one variable, “adoption”, and its levels will equal the categories above.

After categorization, a composite score for relative advantage, compatibility, complexity and Trialability/observability will be created. Using SPSS, a series of analysis will be conducted. First, descriptive characteristics will be run on each question and demographic to get a global picture of the population and their responses. Then, an

Analysis of Variance will be run on the perceived attributes composite scores for each category and the demographics to see if a significant difference exists across groups. Bonferroni's post hoc analysis will also be run to determine if any differences exist between all groups or between the two most extreme categories possible. Finally, Pearson's product correlations will be run to determine if multicollinearity exists between the composite scores and the dependent variable

After the above steps are completed, an ordered logistic regression will be run to determine the model which best explains the relationship each independent variable has with the overall rate of adoption. The significant demographics found above will be used as control variables in the regression model. It should be noted that because the proposed dependent variable is ordinal, the pseudo r^2 will be used to approximate the amount of variance explained by the model. Table 5 demonstrates the analyses to be completed. As shown, the first step will be to determine which DOI attributes (relative advantage, complexity, compatibility, trialability/observability) contribute significantly to the rate of adoption. The second model will include the significant demographic variables, as determined by the ANOVAs, to serve as control variables with the significant attributes from model one. Finally, the third model will be used for pruning the model based on the results of the previous steps to develop a regression equation with significant predictors and any controls that are needed.

Phase 3: Qualitative Assessment

Recruitment

Participants in phase three will be recruited based on the responses of phase two. The surveys will be reviewed and divided into three groups: adopters, still adopting/late adopters and non-adopters. From there, a minimum of four curriculum coordinators from each category of adoption will be interviewed. Only those who indicated in phase two that they are willing to participate in a follow-up study will be contacted.

Sample Size

For phase three, the sample size will be a minimum of 12: four curriculum coordinators or lead health educators from the LEAs who have adopted the Healthy Youth Act, four from LEAs currently adopting the Healthy Youth Act and four from LEAs who refuse to adopt. It is possible the number will be greater than this estimate as the nature of qualitative research dictates that people are interviewed until saturation is reached.

Qualitative Questions and Data Collection.

To further assess the difference in the level of adoption of the Healthy Youth Act between counties, interview questions were developed and are in Appendix F. The following questions are based primarily off of Rogers (2003a) and anecdotal evidence discussed earlier. They are:

1. First, could you tell me what it means to be a curriculum coordinator
 - a. Day to day activities
 - b. Primary duties of one

2. Could you please tell me what it means to be a curriculum coordinator in your LEA?
 - a. Benefits?
 - b. Challenges?
 - c. Possible probes: what is it like working in a rural or urban community, superintendents, teachers
3. Could you please describe the process you typically use when you are working to adopt a new policy?
4. Now, can you tell me about the process of adopting the Healthy Youth Act?
5. How does communication work between your LEA and:
 - a. DPI?
 - b. other LEAs ?
 - c. how did you first hear about the Healthy Youth Act?
6. (conditional upon whether or not previously discussed) What was the role of the surrounding community in adopting or not adopting the Healthy Youth Act?
7. What was your initial reaction to the Healthy Youth Act?
 - a. Personally?
 - b. Professionally?
8. What agency or person integral really pushed forward the adoption of the Act?
 - a. Was there anybody that was a barrier to adoption? Please discuss.
9. Overall, what is the impact the Act has had on the LEA and community as a whole?

a. Perceptions of repercussions about enforcement

To answer the above questions, the following procedures will be undertaken. Individuals from each category of adoption will be contacted to complete a telephone interview. This format was selected to enable data gathering from people located statewide. A Skype account will be set up and Pamela Call Record, an internet data recorder, will be used. Interviews will take approximately 30-45 minutes to complete and will continue until saturation is reached. Interview notes will be taken as a redundancy measure in case something happens with the recordings.

Data Analysis

To analyze the data, the following steps will be taken. First, field notes will be taken during the interviews to supplement the recording. Two levels of a priori codes will be developed based first on the a) Diffusion of Innovations variables which influence adoption and b) the elements within each characteristic that contribute to adoption. For example, a level one code would be compatibility and the level two codes organizational values, norms and its current situation/environment in which it exists. Table 6 displays the a priori codes and their definitions for analysis.

The first step in analysis will be to develop a narrative profile for each interview. This will be done within 24 hours of completing the interview to ensure accurate recall of the data. Interview notes and recordings will be compared to the profile to ensure accurate representation of the participant's information.

After the narrative profiles are complete, coding will occur. The constant comparative method, whereby coding occurs first within each interview and then across

all groups, will be used (Christ, 2007; Creswell, 2007; Seashore Louis, Febey, & Schroeder, 2005; Weathers et al., 2011). Matrices for each will be developed and used to code each interview question. A priori codes will first be applied to explain the adoption of the Healthy Youth Act within each LEA. Each interview will be coded accordingly. The decision to develop additional codes will be made if analysis of multiple interviews show that there is an underlining theme being discussed that is not adequately captured in the existing codes. Recordings will be used to verify the coding results are applicable to the interview. Findings will be applied to answer each research question. Table 7 displays how each research question will be answered by the interview.

After coding, the qualitative data will be used to qualify and explain the quantitative data (Creswell, 2009). After coding is complete, a profile of each curriculum coordinator or lead health educator will be developed discussing the relationship of responses with the Diffusion of Innovations. From there, interviews from each category of adoption will be compared to ascertain the similarity of experience and differences between each. Descriptions will be compared to determine how each variable impact and contributes to the different adoption levels of the Healthy Youth Act. Finally, the relationships between each element will be explored to determine how the variables of diffusion work with one another.

In order to ensure the reliability and validity of the findings, the following steps will be taken. For validity, both triangulation and clarification of researcher bias will be undertaken (Creswell, 2007). For triangulation to exist, researcher make, "...use of multiple and different sources, methods, investigators and theories to provide

collaborating evidence” (Creswell, 2007). In this case, both quantitative and qualitative methods are being used and the Diffusion of Innovations is providing the framework for analysis. As for clarification of researcher bias, it is evident throughout the methods and literature review section as demonstrated by the predicted categories of the dependent variable and landscape under which the Healthy Youth Act is being adopted. Reliability of information is being obtained through the use of both interview notes and recording of conversations to ensure the information obtained is not misrepresented (Creswell, 2007).

Universal Elements

Human Rights Protection

An explanation for the protection of human subjects is in Appendix E.

Limitations

While the study approach above was designed to assess be able to assess the implementation of the Healthy Youth Act and understand the differences between compliant and noncompliant LEAs, a few limitations remain. First, the study will only be able to speak to the chosen family life curriculum but not to the quality in which it’s implemented. Second, the study participants are self-selecting in. There is no mandate from DPI that they participate and no penalty if they pass on the study or withdrawal from it. Finally, the study focuses on North Carolina policy and its school system not the nation. This eliminates the ability for study findings to be generalized outside the state.

However, several safeguards have been put into place to minimize these limitations. First, this study is the first of several possible follow-up observations that can be done to assess the quality of the Healthy Youth Act’s implementation. Before

those can be done, it is necessary to know a) who has adopted the Act and b) what is needed or missing from other counties that are preventing adoption. This knowledge can help facilitate efforts to assist noncompliant LEAs with becoming compliant.

Second, avenues have been explored to increase participation in the survey. DPI, while refusing to formally support the project, is aware of it, will not impede in its administration and would like any findings gathered. They also indicated that formal support may not be of assistance to study participation as they have difficulty getting LEAs to complete mandatory surveys. Additionally, two respected organizations, the School Health Training Center and APPCNC are aware of the project and support it. Finally, conversations with DPI professionals indicate the belief that there are and will be plenty of LEAs who wish to discuss their experience with the Act.

Finally, like the North Carolina school system, the United States educational system as a whole operates as a professional bureaucracy. Policies passed on the federal level are left to each individual state to decide the best course of action to fit their citizens. This decreases the ability of any study to be generalized, unless the majority of states participate. However, the findings here can be used to inform activities in other states that have an education structure similar to that of North Carolina.

Diffusion of Findings

The findings of this study will be diffused through several venues. The first article, to be submitted to the Journal of School Health, will consist of a literature review summary of school structure and the appropriate level of assessment based on the study's goal. During the literature review phase of this project, it was found this information

lacking in the field's journals, which means this article will contribute significantly to the current body of knowledge. The second will be a results article, focusing on the elements of a program which contribute to the adoption of a sexual health education curriculum. The journal of interest has yet to be decided, but the narrative will include a combination of quantitative/qualitative findings to create a contextual description of the process.

Modifications to Proposal

After starting the research, modifications had to be made to the above proposed methods. These included the following changes:

1. The Department of Public Instruction assisted in the recruitment of curriculum coordinators for the second phase of the study. This was done after the initial proposed method of recruitment yielded few respondents to the full survey. The Department of Public Instruction emailed the individuals in each school district in charge of adoption.
2. Potential participants for phase 2 were contacted and invited six times to participate in the study. This was increased due to the initial slow response rate to the survey. The survey was open for eight weeks for completion by participants.
3. Because the overall response rate was lower than anticipated, the proposed ordinal logistic regression could not be used. Instead, independent t-tests were used to compare those who adopted by the first half of the school year and those who waited by attributes and demographics, as the interview findings revealed a potential difference between these two groups.

4. The initial proposed sample size for the interview phase was 12, with four individuals from each proposed adoption category; however only nine individuals agreed to be interviewed and 8 interviews were completed. The analysis was done and revealed that the largest difference between participants existed for those who adopted by the first half of the school year and those who waited or had not completed adoption. This finding was used to analyze both the qualitative and quantitative phases.

Tables

Table 4: Research Questions and Hypotheses

Question 1	<p>What perceived attributes of the Healthy Youth Act are associated with its level of adoption?</p> <p><i>H1: Adopters of the Healthy Youth Act are more likely to indicate that the new policy is better than its predecessor when compared to non-adopters and those still adopting.</i></p> <p><i>H2: Adopters of the Healthy Youth Act are more likely to indicate their organizational culture is compatible with it than non-adopters and those still adopting.</i></p> <p><i>H3: Those who are still adopting the program will be more likely to indicate the Healthy Youth Act is complex than those who have adopted the program.</i></p> <p><i>H4: Adopters of the Healthy Youth Act are more likely to indicate they observed success in other LEAs than non-adopters and those still adopting</i></p>
Question 2	How did the role of social systems influence the rate of adoption of the Healthy Youth Act?
Question 3	What role did communication channels play in the rate of adoption of the Healthy Youth Act?
Question 4	What was the role of change agents in the rate of adoption of the Healthy Youth Act?
Question 5	What is the role of the community in the adoption of a new LEA policy?

Table 5: Clusters of Variables for Logistic Regression

Variable	Model 1	Model 2	Model 4
Relative Advantage	X	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> Significant control variables & composite scores </div>	<div style="border: 1px solid black; padding: 5px; width: fit-content; margin: auto;"> Pruning the model </div>
Complexity	X		
Compatibility	X		
Trialability/Observability	X		
Age			
Gender			
Time in Schools			
Training			
Race/ethnicity			
Religious habits			
Rural/urban			

Table 6: A Priori Codes

Categories	Level 1 Codes	Level 2 Codes
Early Adopter- individuals who report adopting the HYA prior to the mandated start date	Relative advantage- The degree to which an innovation is perceived as better than the idea it supersedes	Economic relative advantage Social relative advantage Rational relative advantage
Adopter- individuals who report adopting the HYA during the mandated school year	Compatibility- Degree to which an innovation is perceived as being consistent with the existing values, past experiences and needs of potential adopters	Needs Values and Beliefs Previously introduced ideas
Late adopter- individuals who report being in the process of adoption but have yet to complete it	Complexity- How difficult the innovation is to understand and/or use	Complicated Level of necessary expertise
Non-adopter- individuals who report the HYA was not adopted during the mandated school year	Trialability/Observability- the degree to which an innovation was experimented and/or observed prior to adoption	Feedback or publicity of results Pilot test period

Table 7: Research Questions Answered by Interview Guide

Research question	Corresponding Interview Question(s)
RQ1: What perceived attributes of the Healthy Youth Act are associated with its level of adoption?	<p>IQ1: First, could you tell me what it means to be a curriculum coordinator</p> <p>IQ2: Could you please tell me what it means to be a curriculum coordinator in your LEA?</p> <p>IQ3: Could you please describe the process you typically use when you are working to adopt a new policy?</p> <p>IQ4: Now, can you tell me about the process of adopting the Healthy Youth Act?</p> <p>IQ7: What was your initial reaction to the Healthy Youth Act?</p> <p>IQ9: Overall, what is the impact the Act has had on the LEA and community as a whole?</p>
RQ2: How did the role of social systems influence the rate of adoption of the Healthy Youth Act?	<p>IQ4: Now, can you tell me about the process of adopting the Healthy Youth Act?</p> <p>IQ6: What was the role of the surrounding community in adopting or not adopting the Healthy Youth Act?</p>
RQ3: What role did communication channels play in the rate of adoption of the Healthy Youth Act?	<p>IQ4: Now, can you tell me about the process of adopting the Healthy Youth Act?</p> <p>IQ5: How does communication work between your LEA and: a) DPI? B) other LEAs ?</p>
RQ4: What was the role of change agents in the rate of adoption of the Healthy Youth Act?	<p>IQ6: What was the role of the surrounding community in adopting or not adopting the Healthy Youth Act?</p> <p>IQ8: What agency or person integral really pushed forward the adoption of the Act?</p>
RQ5: What is the role of the community in the adoption of a new LEA policy?	<p>IQ4: Now, can you tell me about the process of adopting the Healthy Youth Act?</p> <p>IQ6: What was the role of the surrounding community in adopting or not adopting the Healthy Youth Act?</p>

CHAPTER III

ATTRIBUTES CONTRIBUTING TO THE ADOPTION OF NORTH CAROLINA'S HEALTHY YOUTH ACT

Introduction

In 2009, the North Carolina General Assembly passed House Bill 88, more commonly known as the Healthy Youth Act (HYA) (Assembly, 2009). This law mandated that each school district adopt a reproductive health and safety curriculum, grounded in sound, peer-reviewed science, teaching at minimum an abstinence-plus curriculum. As opposed to the previous law which mandated teaching effective and failure rates of contraception, North Carolina schools are now required to frame messages of contraception around effectiveness and safety rates, discuss healthy relationships and communication and provide opportunities for parent-child engagement. The law called for full adoption of the policy sometime during the 2010-2011 academic school year (Assembly, 2009).

Once a policy is adopted, the way in which the policy will be operationalized needs to be chosen. As Longest (2006) discusses, rulemaking is the process of operationalizing a policy within an organization; however if language is vague or little guidance is offered, uneven adoption and implementation will occur. In this case anecdotal evidence suggested a strong likelihood that adoption would vary between districts. Some school districts were already compliant with or teaching more than what is

required by the Healthy Youth Act prior to its passage, while others were teaching the bare minimum under the old law.

The need to understand adoption and what contributes to the success of a new policy is growing. Since the passage of No Child Left Behind, there has been a greater push to hold teachers, schools, and states more accountable for what is learned in the classroom. While this mandate was originally left to the core subject areas, a movement is starting to track student scores in the areas of health as well. This is seen in Washington, DC where the school board now requires end of year testing for health-related topics (Turque, 2011), with similar legislation being drafted on the federal level (Burr, 2011). However, to understand any possible differences between school districts and states, one needs to understand what contributes to the rate and process of adoption with policies. Therefore, the purpose of this study is to understand how the perceived attributes of a policy and the community context in which it is to be adopted impact the overall rate of adoption in the school system.

Theoretical Framework

Based on conversations with field professionals and a review of the literature, the Diffusion of Innovations (DOI) was selected as the guiding framework for the study design (Rogers, 2003a). DOI has a long history of being used to study and understand the adoption of programs, including computer technology (Moore & Benbasat, 1990; Shukla, Kushwah, Agrawal, & Shukla, 2012), farming practices (Copp et al., 1958; Fliegel & Kivlin, 1966), education policy (Holloway, 1977), and even sexual health programs (S. A. K. Bowen, Saunders, R.P., Richter, D.L., Hussey, J., Elder, K. and

Lindley, L., 2010; K. Wilson et al., 2008; K. Wilson, Pruitt, B.E., and Goodson, P., 2008). Within the theory, there are five variables which determine the rate of adoption: perceived attributes of the innovation, the amount of decision making ability or say the organization has in adoption, communication channels, social structure, change agent and time passed from knowledge of the new innovation to when it is implemented.

The first variable, perceived attributes of the innovation, is one of the most studied aspects of the theory. Within the variable, there are five constructs: relative advantage, complexity, compatibility, trialability and observability. Table 8 displays the definitions of each and possible applications to the program (Rogers, 2003a). Within each of these attributes, there are elements that contribute to their perception. For example, if a new program is perceived as the best way to meet a given goal (rationality), then the relative advantage of the program will be viewed as great. While relative advantage and compatibility are often the strongest indicators of the overall perception of an innovation, all five can contribute to the rate of adoption (S. K. Bowen et al., 2010).

The other elements of innovation-decisions, communication channels, social structure, change agent and time also contribute to the rate of the adoption. Innovation-decisions refers to the amount of autonomy an organization or entity has in adopting a program, communication channels specifies the avenues in which a new innovation is conveyed to the adopting entity, social structure refers to the set of interrelated units that work to together to achieve a common goal, change agent is the person who influences the innovation-decisions and time refers to how long it takes from the introduction of a

new innovation to its adoption. In the case of the HYA, time and innovation-decisions were not studied as both were mandated by the North Carolina General Assembly.

It is the combination of these variables that contributes to the overall rate of adoption of a new innovation. There are five categories of adopters based on the variables' influence: innovators, early adopters, adopters, late adopters and non-adopters. Adoption generally follows an S-shaped curved, where the majority fall into the classification of adopters (Rogers, 2003a).

The purpose of the study was to use the Diffusion of Innovations to explore how the perception of a policy and the context in which its adoption is situated contributes to its overall rate of adoption. A mixed methods study was designed to explore how change agents' perceptions of DOI's five attributes are associated with the rate in which the HYA was adopted and to better understand how contextual factors affected both the rate and process of adoption within school districts. More specifically, the study results presented seek to address the following three questions:

1. What elements of the DOI framework contribute to the rate of adoption of the Healthy Youth Act?
2. How did these elements influence the process of adoption?
3. What was the relative importance of each element in the DOI framework to the adoption of the Healthy Youth Act?

Methods

Study Design

To study the implementation of the HYA, a sequential, mixed methods research design was used. This approach was deemed appropriate because of the small total population (N=115) being studied. Mixed methods allows the research to maximize the benefits of both quantitative and qualitative research approaches and minimize the limitations of each (Creswell, 2009). Based on this, using a mixed methods approach provided the best opportunity of understanding and answering the research questions. More specifically, the sequential mixed method approach was used, with the quantitative component serving as the primary component, followed by a secondary qualitative element. Sequential designs were developed so that the secondary component can elaborate on or expand on the findings of the first (Creswell, 2009). For this study, the quantitative portion occurred first to ensure the follow-up interviews only included those who provided feedback on their overall perception of the HYA, therefore expanding and contextualizing the findings of survey. For the current study the use of mixed methods sequential design was ideal as it enabled the authors to understand the adoption of the Healthy Youth Act.

Phase 1- Quantitative Survey

Measures. For the quantitative portion of the study, an online survey was developed using the Diffusion of Innovations framework. A total of four scales were created to measure the DOI attributes with the following scale reliabilities from the final survey: relative advantage (Cronbach's alpha =.955), complexity (alpha=.691),

compatibility ($\alpha=.946$) and trialability/observability ($\alpha=.763$). Trialability and observability were combined as past research indicated that these two often measured the same thing when program/policy change was mandated (Rogers, 2003a). Survey questions were phrased as a statement comparing the HYA to the old policy and asked the participants to rate their level of agreement on a 4-point Likert scale (1= strongly disagree to 4= strongly agree). Sample questions are included in Table 1. Additionally, participants were asked questions about the differences between the new and old curriculum, how they selected the new program, and if they selected a previously curriculum, what its name was. Participants were also asked for the date when full adoption occurred. If participants reported they had not completed the adoption, they were asked to describe where they were in the adoption process and what percentage out of 100 they felt they had completed. From these questions, the rate of adoption for each school district was triangulated to help ensure accurate categorization. Finally, the following individual demographics were collected: gender, age, school district, time in school system, highest degree obtained, sexual health/health education training, and religious importance and attendance.

Previous surveys written and validated to measure the adoption of similar programs (S. A. K. Bowen, Saunders, R.P., Richter, D.L., Hussey, J., Elder, K. and Lindley, L., 2010; Holloway, 1977; Longest, 2006; Rogers, 2003a; K. Wilson et al., 2008; K. Wilson, Pruitt, B.E., and Goodson, P., 2008) were used as a template for the study. Survey questions were reviewed by the School Health Training Center at Appalachian State University and the Department of Public Instruction to ensure face

validity. The instrument was pilot tested with assistant superintendents statewide and was found to be reliable.

Study Sample. A total of 115 people were invited to participate in the Health Policy Adoption Survey. To determine the appropriate population, the Mintzberg framework of organizational structure was consulted (Mintzberg, 1979). Based on the roles filled by each position, it was determined that the curriculum coordinators would be most appropriate, as it is their job to standardize the work/curriculum taught in each district. This was then verified by consulting the Department of Public Instruction and the North Carolina School Health Training Center at Appalachian State University. The list of individuals was finalized by consulting with both the Department of Public Instruction and each school. The final sample consisted mostly of the curriculum coordinators in charge of selecting and adopting health curriculum; however there were few instances where the task was passed to the district's lead health educator or assistant superintendent. The final population total consisted of 102 as some people were not in the position during the HYA's adoption and others (assistant superintendents) had participated in the pilot study. A total of 40 individuals responded to the survey (39%) and 35 (34%) were retained due to survey completeness.

Procedures. Email addresses were obtained and, using Qualtrics, the participants were emailed and invited to participate. The survey took on average 15 minutes to complete and participants were invited six times to complete the survey. Upon completion, the participants were given the option to opt into the follow-up interview. The survey was closed after eight weeks.

Phase 2- Qualitative Interviews

For the qualitative portion of the study, questions were developed around the Diffusion of Innovations framework and its associated components. While the questions included the attributes listed above, the main goal was to understand the context and step-by-step process used to adopt the new policy. To do this, a combination of semi-structured and open-ended questions were developed to investigate the various roles/influence the community, individuals, organizations and other possible change agents had on the adoption process, and the step-by-step process used by each school district to adopt the policy. The items used to answer the above research questions include:

- What was the role of the surrounding community in adopting or not adopting the Healthy Youth Act?
- Describe your districts' process of adopting the Healthy Youth Act? (possible probes included Who did you convene to guide the process, Where/what sources did you seek information from, What stakeholders were tapped to be involved, and How was it different from other policy adoptions)
- What agency or person was integral or really pushed forward the adoption of the Act?

Participants were also asked to reflect on the role their personal and professional values played in the adoption, their initial reaction to the HYA and the impact the Act has had on the students.

Qualitative Study Sample and Procedures. From the 35 participants who were retained during the quantitative, nine people agreed to be interviewed, with eight (23%) taking place and one lost to follow-up. Interviews were conducted via Skype and the

internet call recorder, Pamela for Skype ("Pamela for Skype," 2011; Scendix, 2011), was used to ensure proper representation of participants' responses. Additional, field notes were taken during the interview in case of technological failure and summarized upon completion. The interviews were an average of 35 -40 minutes in length.

Analysis

Phase 1- Quantitative Survey. Data analysis began by determining the category of adoption for each school district. This was determined via triangulation of three different questions: the components incorporated into a district's new reproductive health and safety curriculum, the name and description of the new curriculum, and the month and year in which the curriculum was fully implemented. The districts were first sorted by Rogers' categories of adopters: innovators (those compliant prior to the passage of the HYA), early adopters (those compliant prior to the mandated start date of the policy), adopters (those compliant during the mandated start date), late adopters (those who became compliant after the mandated start date) and non-adopters. For analysis, a dichotomous categorization was created: early adopters (those who indicated they adopted the HYA before the mandated school year up until December 2010) and later adopters (those who indicated they adopted the HYA during the second half of the school year, January 2011 or later, or where still in the process of adopting).

To determine the overall relationship between the attributes and adoption, the following steps were taken. First, frequencies and descriptives were run to describe the sample and determine the rate of adoption/compliance with the Healthy Youth Act. To understand the association between each attribute (relative advantage, complexity,

compatibility and trialability/observability) and the rate of adoption, average score was calculated for each subscale means and standard deviations were calculated and independent sample t-tests run comparing those who adopted by the December 2010 and those who adopted after or were still noncompliant to understand how the difference in attribute perception influenced on-time adoption.

Phase 2- Qualitative Interviews. For the interviews, data was analyzed to understand the relationship the program attributes, community and change agents had on the process of adoption. Upon completion of the interview, the interview notes were summarized into detailed descriptive profiles to capture what was said and the inflection of the participant as it was fresh in the interviewer's mind. These profiles were developed via the interview notes and were expanded/confirmed through listening and re-listening to the interview recordings.

To analyze the interviews, the constant comparative method was used (Christ, 2007; Creswell, 2007; Seashore Louis et al., 2005; Weathers et al., 2011). As recommended for this type of mixed methods design (Christ, 2007), a simple coding scheme based on responses to primary questions was constructed. Participant responses to questions were coded to identify each DOI element and to determine whether the element was perceived to facilitate or inhibit adoption. Codes were then verified via re-listening to the interview recordings. Once the coding was completed for each interview, a matrix was developed combining all interview codes to compare across interviews. Results were then compared to rate of adoption to determine the relationship each element had to it. It is important to note that while the questions were designed to probe

one or two DOI constructs, it was not uncommon for participants to discuss multiple components together. Findings and categories were then compared to the interview recordings to ensure they were classified correctly. Once complete, the qualitative findings were used to create an overall picture of the experience of adopting the Act. The aggregate and individual experiences were then used to supplement and enhance the survey information (Creswell, 2009; Ploeg et al., 2010).

Results

Survey

A total of 40 people responded to the survey and 35 were retained due to survey completeness. Three were dropped because while they provided information on what their district was doing to meet the standards of the HYA, they did not provide information on the perception of the Act and two logged into the survey but did not provide any information. Table 9 displays the demographics of the sample. The ages ranged from 28 to 60. The majority of respondents were female (n=24), with two people skipping the question. The majority (57%) of respondents' had a masters' degree, with 50% indicating they had sexual health/health education training. While the specific titles differed, the majority (86%) of respondents were the school district's health curriculum coordinators, with the remainder either the lead health educator (11.4%) or school social worker (2.6%). Finally, 66% of respondents indicated that religion was very important to them.

While the response rate was low, the respondents were representative of the state. Respondents reported working in each of the three regions (Libraries, 2012), Western,

Piedmont and Eastern, with approximately two-thirds from the Western and Piedmont regions and 18% from the Western region. Additionally, the majority of the state is considered rural, with only a few urban areas (Center, 2011). This was reflected in the school districts represented, with 23% of the respondents representing an urban school district and 69% from a rural area.

Of the 35 districts analyzed, 24 (68%) became compliant at some point during the first year, four (11.4%) adopted the program earlier than necessary and five districts (14.2%) were classified as non-compliant with the HYA. Only two school districts were classified as an innovator, as they had already adopted a program compliant with the HYA prior to its passage.

To understand the differences in perception of each attribute amongst the participants, an aggregate mean score was calculated for each subscale. The means ranged from 2.64 (somewhat neutral) to 3.19 (agree), with trialability (2.64, SD=.48) having the lowest mean, followed by complexity (2.76, SD= .32), compatibility (3.09, SD=.59), and relative advantage (3.19, SD=.60). The standard deviations show that while there was some variability in responses, the majority of individuals were in agreement as to the importance of each attribute.

T-tests were run to compare the difference in attributes between those who adopted the HYA by the first half of the school year and those who adopted during the second half/had not adopted at the time of survey. This method of categorization was selected because a) the low sample size and b) it represented the greatest amount of variability with the dependent variable. Similar to Rogers (2003a), both compatibility

($t=2.787$, $p=.011$) and relative advantage ($t=2.828$, $p=.010$) had the greatest relationship with rate of adoption, while complexity and trialability/observability were not significantly related to the rate of adoption. Thus, the more people felt the Healthy Youth Act was compatible with the values and needs of the district and was a better policy than the previous, the more likely they were to quickly adopt a compliant reproductive health and safety curriculum.

Interviews

To further examine the components and attributes of DOI related to the Act's adoption, eight interviews were conducted. As shown in Table 2, five were female and three male. The majority were between the ages of 38 and 50, with the youngest 28 and the oldest 60. Six had a master's degree, two doctorates and five indicated they had sexual health/health education training. Finally, one person reported their school district adopted the HYA prior to the start of the 2010-11 school year and one indicated they still were not fully compliant.

To better understand the relationship between the elements of DOI and the rate of adoption, qualitative findings were examined by when during the school year adoption occurred. The findings of the qualitative survey are discussed below, first with a discussion of the relationship of the perceived attributes of the HYA, followed by the impact the community had on the process.

Attributes Contributing to Adoption. Similar to the quantitative findings, two attributes were found to be important: relative advantage and compatibility. The other two of interest, complexity and trialability, were discussed but did not appear to impact

the rate of adoption. Rather, they appear to affect the process undertaken to adopt but did not directly impact when the adoption occurred. The findings of each are discussed in more detail below.

Relative advantage. As defined by Rogers, relative advantage is the degree to which an innovation is perceived as being better than the idea it supersedes (Rogers, 2003a). In the case of relative advantage, all eight individuals discussed recognizing the advantage of the Healthy Youth Act. However, when this advantage was recognized varied between the participants and appears to be associated the date of adoption. The results suggested a continuum, whereby those who immediately recognized its advantage were either early adopters or adopted during the first part of the school year and those who discussed being initially skeptical of the Act before seeing its advantage adopted in the second half the school year. The only deviation from this pattern was the health educator from the non-compliant school district, who reported personally seeing the advantage of the Act but felt other district educators and administrators did not view it in a similar fashion.

On one end of the spectrum, the early adopter reported recognizing very quickly the advantage the Healthy Youth Act would have over the old policy. The respondent, who was the Director of Health and Physical Education for her district, stated her district had not been, "...abstinence only since 1995", when they updated their curriculum to teach everything allowed under the old law. Recognizing that the Act would enable them to teach even more, she worked to, "...stay in touch with those working on [drafting] it" so she would know what to expect when it was passed. They began working on the new

curriculum immediately and were actually able to pilot it in some of the schools prior to the full adoption. Finally, she stated that the law allowed to have the new policy, “...worded generally so they don’t have to review it and update it that often” but rather built in leeway to quickly adopt a new lesson and teach it to swiftly address new issues as they arise. It appears that Rogers (2003) quality of rationality or the most effective means to reach a given goal, was apparent in the Act. The Act not only allowed them to teach more of the reproductive health and safety elements they had been wanting to but would allow them to quickly adapt to future needs of their population.

Similarly, another interviewee who implemented the Act at the start of the 2010-11 school year seemed to see rationality as the reason why the Act was better than the old law. She stated, “we are a little more progressive than the rest of the state” and had already revamped their district’s curriculum under the abstinence law to teach as much as possible while still being in compliance with the old ways (female, 38 years). Further, the health teachers in her district had been pushing for a more comprehensive reproductive health and safety curriculum, which emphasized abstinence but explored other areas of sexuality, which was previously not allowed. Therefore, when the Healthy Youth Act was first introduced and passed, they were, “...excited because they could teach some elements of comprehensive education” to their students, causing the Act to be perceived as better than the old policy.

However, when the advantage of the Act was not immediately recognized, there appeared to be a delay in the date of adoption. One participant, who reported adoption occurring during the second half of the school year, reported being initially nervous and

apprehensive about the Act because he didn't know how they would go about adoption. Previously, "...they just brought in speakers" to teach the abstinence-only curriculum but now they were expected to teach the curriculum themselves. Similar to Rogers (2003) explanation, they were motivated to seek information in order to decrease uncertainty about the relative advantage of the new policy. In this case, the participant's (and his colleagues) uncertainty began to lessen as they explored the curriculum that would be used to operationalize the Act. When one was chosen and the health educators were being trained on it, he and the rest of the individuals were, "...surprised by some of the information and that caused them to be more engaged in training" (male, 45 years). The educators became excited to learn and teach the new reproductive health and safety curriculum because of its ability to answer questions and better meet the needs of the student body. Now that the adoption has occurred he "...feels good about it because it [sexual health] is something they [the students] need to know and during middle school, they are becoming more curious about their own bodies and members of the opposite sex". Further, the new curriculum allows him to make connections between reproductive health and other issues, such as "...eating disorders and menstruation", helping him to create goals for the coming school year.

The only contradiction between perceiving the HYA as better than the old was with the health educator from the non-compliant school district. The health educator reported believing the HYA was better than the old because it is current and allows her to present the most up to date information to students. This sentiment, she reports, is not necessarily shared by others. This distinction, coupled with the fact that health isn't a

core subject, appears to affect the perception of the importance health education overall. This is seen when she engages in, "...staff development with the new standards, my people aren't interested in it". Therefore, the advantage of health education in general is not seen by others and overall, "[they] have no interest in teaching it".

Compatibility. Like relative advantage, compatibility of the HYA was found to impact its level of adoption but the way in which it affected it was more complicated. There appear to be three dimensions of compatibility (personal, professional, and organizational) associated with the HYA and each combined to impact the rate of adoption within the school district. Except in a few instances, personal and professional compatibility were found to overlap and reflect similar values and when they weren't entirely consistent, they were not a full break from one another. Further, while the professional and personal values were almost the same, the organizational values of the school district differed in some cases, often overshadowing and/or overruling the values of the adopting personnel. Therefore, while all of the interviewees indicated they believed the Healthy Youth Act was compatible to the needs of the student body, the rate of adoption was not always reflective of this belief:

Personal compatibility can be defined as how the HYA fit with an individual's value set for their and their families, while professional compatibility is defined as how the HYA fit with the individual's values, goals and expectations in their role as health educator/health director. The majority of participants found the Act to be compatible both with their personal values and beliefs and their perception of the clients' (students) needs. One person said they were excited because she, "...no longer felt like a hypocrite living

with someone outside of marriage” while teaching abstinence in the classroom (female, 38 years). Another stated that he welcomed it because he can’t talk to his children, “...enough about making smart decisions” and the Act would enable him to do the same with his students (male, 43 years). Finally, one male Healthy Schools Coordinator, whose district also adopted at the start of the school year, stated, “...I love it because I am advocate for students, women’s rights and healthy lifestyles” and the HYA would allow him to bring some of this personal passion to the classroom.

It was on the professional level that participants discussed how compatible the Act is/was with their role as a health educator/health director. Overall, the HYA’s perceived compatibility with their professional values was mixed and is reflective of their perception of their community’s values and needs. The role of the community is introduced here but will be discussed further in a later section. While most had good things to say about it professionally, there was more of a continuum in perception, ranging from extremely positive to apprehension and complete value reversal amongst those adopting the Act. Similar to relative advantage, this perception of compatibility appears to be related to the category and date of adoption within the school district. One adopter who reported adoption occurring at the start of the 2010 school year, stated that everyone was, “very open to it because they could see the need for the county and the student[s]” (female, 60 years). On the opposite end, one curriculum coordinator whose county adopted in January 2011, discussed, “...being apprehensive in the way of community support because he believed more would be opposed to the Act” (male, 43 years). Fortunately, as adoption occurred, it was found that the community at large was

supportive of the new program. However, in at least one case, organizational compatibility had the most influence on the rate of adoption. It appears that in most cases, organizational, personal and professional compatibility were the same, making it a non-issue for adoption. However, one participant (from the noncompliant district) seemed to believe that while her personal and professional values were compatible with the HYA, it was not shared on the organizational level. Similar to discussing how she personally saw the relative advantage of the Act, she also talked about how the Act was compatible with her personal and professional values. In fact, she was, "...glad to see it was done tastefully and [that it was] well-written to spell out the information".

However, it was the organization/school board that prevented her from fully adopting the Act. The health educator reported that the school district, "...doesn't want them to discuss more than options and failure rates" of contraception (female, 28 years). Further, she has attempted to bring the district into compliance by reporting ways in which they are not meeting the new standards, with no action being taken. Rather, the school district, "...wants her to scare the kids" in her classroom by teaching contraceptive failure rates under the abstinence-only paradigm. She states she will continue to make the argument that a more comprehensive approach is needed in hopes that they will eventually allow her to make the necessary adjustments in the classroom.

Complexity and trialability/observability. Unlike relative advantage and compatibility, complexity and trialability appear to have had little impact on the rate of adoption; rather these two elements seemed to affect the process undertaken to adopt the HYA. Complexity was discussed more in relation to the steps and level of transparency

taken to adopt the HYA rather than in relation to the Act itself. As required in North Carolina, there are several steps one needs to undertake to adopt/change any policy in its school districts. This is done by holding a public hearing to promulgate proposed changes to the curriculum, that the objectives and all new materials be available for public review at least 30 days before the hearing, that parents and guardians be available to review new materials for at least 30 days after the hearing, and allow parents to opt their child out of any sexual health education.

For the HYA, this process was modified, expanded, and often made more complex than what is required. Every district convened a committee consisting not only of school employees but other stakeholders as well. For one district, this included, “parent representatives and the head nurse” while another convened, “...a diverse [community] representation, which included faith leaders and physicians”. Additional steps to make the change in policy more transparent included extra community meetings, an opt-out option by topic/lesson and discussion with local media on the Act.

Finally, only a couple of participants discussed trialability/observability of the program. As defined by Rogers (2003a) trialability is the degree to which an innovation may be experimented with on a limited basis and observability is the degree to which the results of an innovation are visible to others. One male Director of Curriculum who adopted the policy at the start of the 2010 school year discussed how he learned from some of the other school districts who, “...had already stepped in the mudhole so they could learn lessons from them”. However, because he reported adopting the HYA at the start of the school year, this indicates trialability and observability did not impact the rate

of adoption. The other person who talked explicitly about these attributes did it in relation to pilot testing the program. As she put it, “they had the training the spring/summer before it was being implemented because they already knew what they were going to adopt. [Also], they piloted [the program] in three different schools” to work out the kinks prior to full adoption. Otherwise, the majority of participants discussed their individual district honing in on the needs of their community and appeared to not be worried about other districts looking at them throughout the process of adoption.

Impact of Community on Adoption. As discussed above, the community and its perception of the HYA was interwoven into almost every element of the DOI framework and adoption of the HYA. While not an explicit element of the framework, the community and students represent the client receiving the new policy and therefore their potential perceptions factored heavily into the adoption of the HYA. In particular, this perception seemed to impact the process undertaken to adopt the Act.

The community inspired a greater level of transparency than required by law. As introduced and discussed some above, all participants representing compliant districts discussed how the community was included throughout the adoption process. As one participant stated, “...if anything is going to be successful, you need the community” (male, 39 years). This meant that each compliant district invited members of the community to review, provide feedback on and in many cases, participate on the review committee to vet and select the new reproductive health and safety curriculum. Further, some of the school districts invited community organizations to participate, including the,

“...School Health Advisory Council, 4H, early college group, suicide prevention groups” (female, 47 years) and other related organizations. Many of those surveyed held community meetings and went around to local faith-based institutions to educate the populace on the law and what it required. The proposed curriculum was made available for community members to review and comment on at the school board prior to its passage and was invited to school board meetings. As a result, “...no one paid attention to it” (male, 45 years) when it was adopted, in that the change was largely unnoticed and accepted by the community.

There was only one participant who indicated that the community may have had a negative impact on the adoption process. The health educator from the noncompliant district indicated that the organization’s perception of the Act’s compatibility with the community prevented it from being fully adopted. The participant stated, “...they don’t want them to discuss more than [contraceptive] options and failure rates”. Frustrating her further was the school system’s push to create, “...global learners when they don’t have a diversity of people” both in the schools and in the county. Whether or not the community is actually preventing the adoption of the Act is not known but the perception of by the organization of the community’s values is enough to stop it.

Discussion

Findings from this study suggest that the Diffusion of Innovations framework is a helpful method for analyzing the adoption of a new school health policy. Based on the results above, both relative advantage and compatibility were found to be significantly related to the adoption of the Healthy Youth Act. In particular, those individuals

representing school districts who adopted the Act during the first part of the school year (August-December 2010) were found to have perceived the Act differently than those who adopted during the second half of the school year (January 2011-May 2011). Based on these differences, the results of the qualitative interviews not only support, but also expand upon the findings of the quantitative survey. Not only was the perceived compatibility of the program discussed by many of the participants, the relative advantage of the new program was also cited as being important to the adoption of the HYA. Finally, the perception of the community/client's needs affected the process used to adopt the HYA.

The study above indicates that of the 35 people who responded, 86% had adopted a compliant program within the mandated time frame, with 71% adopting during the first half of the school year. This is contrary to anecdotal reports, which suggested that a large variation in adoption would occur between school districts. Of the perceived attributes of the HYA, only relative advantage and compatibility appear to be directly related to the level and date of adoption. As discussed above, the more positively the Act was viewed by the individual, the quicker adoption occurred. With compatibility, organizational compatibility with values, norms and social ideals were found to outweigh personal and professional compatibility. For instance, one health educator in charge of adopting the Act discussed in depth how the Act would allow her to better educate and inform her students about reproductive health and safety but the school district would not allow her to fully adopt the Act. This situation, where the relative advantage is seen on one level but not another, is acknowledged in the DOI framework. Rogers (2003) states

that, “certain types of behavior change may be desired or demanded by a government but not by individual citizens” (p. 239). Further, when there is such strong resentment to a desired change, the government or adopting body often needs to provide strong incentives to individuals. However, this assistance was not given by the school district to influence the health educators to adopt the new program.

Similar results were seen with relative advantage in that all people interviewed seemed to feel the HYA could better serve the student body and community at large. This finding is reflective of rationality, whereby the new innovation is seen as the best way to meet the needs of the student body and protect them from making bad sexual decisions. What was interesting was that the health educator who was not able to fully adopt the HYA believed it was better than the old, suggesting that organizational-level compatibility may outweigh other considerations. As for relative advantage, everyone interviewed indicated that they believe the Act is better than the old but not everyone arrived to this conclusion at the same time. In fact, the speed in which they came to believe this was reflected in the date they indicated they adopted the Act. This is reflective of the DOI framework, which shows that belief in a new innovation’s superiority can lead to quicker adoption by the individual/organization (Rogers, 2003a).

One interesting finding is the impact the community had on the process of adoption. The community is the client that the HYA is serving and thus its perception of the Act was considered throughout the process of adoption. Those in charge of the adoption found that transparency and inclusion of community members throughout the adoption process resulted in the change to go largely unnoticed by the community. This

corresponded with previous findings which indicate that the majority of the North Carolina population (91%) believes sexual health education should be taught in schools and that public health professionals should decide what information to introduce and how it should be taught (Kalsbeek, Agans, Kosorok, Reimer, & Holden Thorp, 2009).

Findings from this study suggest that inclusion of community members and education of the public about what these new policies actually mean will continue to lead to and possibly increase acceptance of more progressive sexual health policies as they are implemented state- and nationwide.

The findings of this study have implications for larger society. Studies in recent years have found that the American public is extremely open to the idea of having sexual health education taught in the schools, with 82% preferring a program that discusses not only abstinence but other contraceptive methods as well (Bleakley, Hennessy, & Fishbein, 2006). Therefore, the passage of laws similar to Healthy Youth Act should be received positively by the majority of Americans.

Further, the modification of how federal pregnancy prevention funds can be used is opening the door for more states and school districts to adopt a more comprehensive sexual health program. In the Consolidated Appropriations Act of 2010, the Office of Adolescent Health was founded and given the responsibility of administering \$105 million to support evidence-based teen pregnancy prevention approaches (Health, 2011). This action is similar to one of the mandates of the Act, which requires the chosen curriculum to be based in peer-reviewed and evidence-based science.

Finally, different school districts nationwide are starting to have conversations and pass mandates to measure the health related knowledge of their students. In fall 2011, the Washington Post reported the DC school board passed an initiative that starting the following school year, its students would have to pass an end-of-year exam on health curriculum, including nutrition, mental health and drug use and sexual health (Turque, 2011).. Similarly, the United States Senate (Burr, 2011) is currently drafting legislation to have end-of year exams on physical education, to which public health professionals in the state are attempting to get health topics included. This nascent movement will necessitate understanding how health policy is adopted and implemented in the schools so that educators and policy makers can better understand how to meet the needs of students. The study presented above is one way the field can go about examining what they are doing and how well it is being done.

Limitations

There were a few limitations to the study above. Perhaps the most significant was the low sample size used for analyses. This prevented the authors from using more sophisticated statistical methods to analyze the data and draw conclusions. However, this was anticipated due to the low total population size being studied and was accounted for via the development and execution of the interview phase.

The second limitation is the sample itself. The survey was not mandatory, creating a possible selection bias in the final sample, in that only those who had finished adopting the HYA would feel safe responding. It is likely that non-adopters were hesitant to participate, perhaps for fear of being reported as non-compliant to the state. This

created little variability among the reported dates of adoption, which was previously anticipated to be great. Therefore, having only four late/non-adopters completing the survey and one consenting to an interview likely does not represent all cases of noncompliance.

Finally, because of the low sample size, the findings may not represent the diversity of the North Carolina population. While the regions and county density was roughly representative of the state, it would have been beneficial to have a larger, more cross-sectional sample to ensure results are applicable to all districts.

Conclusion

Sexual health continues to be an important topic in American life. Consequently, health policy is constantly reviewed and updated to fit the perceived needs of the community. With the changes in American culture and the continued movement of testing, it is becoming more necessary to understand how policy is implemented and adopted and what can be done to better assist those in charge of selecting programs for students. The Diffusion of Innovations is one framework that has repeatedly been shown to capture why some organizations are quick to adopt the most current policies while others lag behind. Using the DOI framework, this study, methods and findings can be used to inform studies in other locales so that the field can better understand what is needed to create quick and lasting change.

Tables

Table 8: Five Characteristics of an Innovation

Concept	Definition	Sample question	Ways It is Expressed
Relative Advantage	The degree to which an innovation is perceived as better than the idea it supersedes	I believe the Healthy Youth Act will better reduce/prevent the number of sexually transmitted disease among youth than the old	Economic advantage (money saved) Increase in Social Status (having the newest/best program) Rationality (best way to meet a goal)
Compatibility	Degree to which an innovation is perceived as being consistent with the existing values, past experiences and needs of potential adopters	The Healthy Youth Act is compatible with my organization's values	Compatibility with sociocultural values and beliefs Compatibility with previously introduced ideas Compatibility with client needs
Complexity	How difficult the innovation is to understand and/or use	It was easy to find programs which fit the requirements of the Healthy Youth Act	Process taken to implement Amount of training needed to understand
Trialability	Extent to which the innovation can be experimented with on a limited basis	The new curriculum or elements was easily incorporated into the district's standard course of study	Provide opportunities to try on a limited basis
Observability	degree to which the results of an innovation are visible to others	The new curriculum or elements was easily incorporated into the district's standard course of study	Assure visibility of results: feedback or publicity

Table 9: Descriptives of Respondents

Variable	Survey	Interview
Gender		
.....female	24 (68.5%)	5 (62.5%)
.....male	9 (25.7%)	3 (37.5%)
.....No response	2 (5.7%)	0
Age		
.....29 and under	1 (2.8%)	1 (12.5%)
.....30-39	9 (25.7%)	3 (37.5%)
.....40-49	13 (37.1%)	3 (37.5%)
.....50-59	6 (17.1%)	0
.....60 and older	2 (5.7%)	1 (12.5%)
.....No response	4 (11.4%)	0
Position		
.....School Health Curriculum Coordinator	30 (85.7%)	5 (62.5%)
.....Lead Health Educator	4 (12.9%)	3 (37.5%)
.....School Social Worker	1 (2.9%)	
Terminal Degree		0
.....Bachelors	1 (2.8%)	0
.....Masters	20 (57.1%)	6 (75%)
.....Post-Masters certificate	8 (22.9%)	0
.....Doctorate	4 (11.4%)	2 (25%)
.....Other	1 (2.8%)	0
.....No response	1 (2.8%)	0
Health/Family Life/Sexual Health Training		
.....Yes	17 (48.6%)	5 (62.5%)
.....No	17 (48.6%)	3 (37.5%)
.....No response	1 (2.8%)	0
Time in School System		
.....5 or less years	4 (11.4%)	2 (25%)
.....6-10 years	6 (17.1%)	1 (12.5%)
.....11-15 years	8 (22.9%)	1 (12.5%)
.....16-20 years	8 (22.9%)	3 (37.5%)
.....21-25 years	3 (8.6%)	1 (12.5%)
.....26-30 years	4 (11.4%)	0
.....No response	2 (5.7%)	0
Area Population Level		
.....Urban	8 (22.9%)	2 (25%)
.....Rural	24 (68.6%)	6 (75%)
.....No response	3 (8.6%)	0
Region of North Carolina		
.....Western Region	11 (31.4%)	3 (3.75%)

.....Piedmont Region	13 (37.1%)	4 (50%)
.....Eastern Region	6 (17.1%)	1 (12.5%)
.....No response	3 (8.5%)	0
Adoption Category		
.....Innovator	2 (5.7%)	0
.....Early Adopter	4 (11.4%)	1 (12.5%)
.....Adopter	24 (68.6%)	6 (37.5%)
.....Late Adopter/Non-adopter	5 (14.2%)	1 (12.5%)
Time of Year Adopter Category		
.....First Half	25 (71.4%)	5 (62.5%)
.....Second Half	7 (20%)	3 (37.5%)
.....Specific Date not given	1 (2.9%)	0
.....Not applicable	2 (5.7%)	0

CHAPTER IV

SCHOOL ORGANIZATIONAL STRUCTURE AND ITS IMPACT ON HEALTH RESEARCH: INTRODUCING THE MINTZBERG FRAMEWORK

Schools districts are not isolated entities but rather are affected by members of the organization and the surrounding community. Often times, the characteristics of each vary between school districts, creating differences in organizational culture and ultimately resulting in different methods of interpretation, adoption and implementation of school health programs. The difference between these cultures can explain why one health program is successful in one school district but fails in the next. Therefore, by understanding dynamics of a school districts organizational culture and the relationships between individuals within and outside the school district impact health programs (Chance, 2009). This paper argues for the importance of including contextual elements of school organizational structure within the assessment of health programs and introduces a conceptual framework that can help health educators and researchers design such assessments.

Introduction

Schools have and continue to offer a practical venue for health programming. American children spend a significant portion of their day and most of their youth in schools allowing for access to large segments of the population (Poland et al., 2000). In addition, evidence continues to support the positive linkages between school health

promotion activities and academic achievement. In general, healthier students are better learners (Basch, 2011).

Designing and implementing health programming in schools will likely take on increasing levels of importance as our nation strives to improve the health-related knowledge and overall wellbeing of youth. While previously neglected, end-of-year health assessments are now being proposed in the reauthorization of the Elementary and Secondary School Act (Burr, 2011). This, coupled with individual school districts developing their own end-of-year health knowledge exam (Turque, 2011), will create increased pressure to assess the implementation and outcomes of health programs and policies.

As a result, schools are likely to become more cognizant about assessing health programs and will seek out health education professionals to inform and execute the assessment of health programs. Assessment may occur at any stage of a program or policy's life, from prior to program or policy adoption (the method, policy or program chosen to conform to a new school policy or law) to implementation (to the execution and delivery of a program or policy) and assessment (determining how well a policy or program was able to meet its stated goals). Further, these efforts can examine existing health policy or programs or new ones just being implemented. From this moment on, the term "health program(s)" will refer to both health programs and policies.

Often health educators and researchers are asked to examine health programs that exist at multiple schools, school districts and/or states. Conclusions may also need to be drawn on an individual school health program's performance. Regardless of the scope of

the assessment, the foci usually includes program components, characteristics of those adopting and/or implementing programs and students receiving the program. While these foci can provide insight on what is occurring and why at an interpersonal level, they do not allow for explanations of how the structure of an organization influences health programs. Too often we assume that we a) understand the structure based on our knowledge of schools as a whole and b) that that this understanding can be unilaterally applied across varied school systems. By doing this, we ignore critical contextual elements, such as organizational culture and the power dynamics within an organization, that can not only affect how health programs are adopted and implemented but the overall impact the program has on students.

Why We Need to Study School Context and Organizational Culture

While the public school system has existed for centuries, differences in educational quality and student outcomes are present. For example, differences in student performance are often seen between races and gender of students (Barron & Sanchez, 2007). Further, community level factors, such as location and unemployment, can contribute to differences in education. Overall, communities, their resources, values and culture impact the functioning of school systems (Education, 2008a, 2008b).

These elements, in turn, affect the organizational culture of the school district(s). Organizational culture is defined as a multifaceted construct that is a combination of "...beliefs, ideology, language, ritual and myth" (Pettigrew, 1979), or quite simply "the way we do things around here" (Lindahl, 2006). Organization culture is unique to each location, as it is shaped and reshaped by its members and those who it comes into contact

with. Finally, those running the school districts are elected officials, which often affect how they perform their administrative duties.

Because of this, studying the adoption, implementation and impact a health program necessitates consideration of these cultural elements. To do so, we can turn to the field of organizational management and specifically, the Mintzberg framework of organizational structure. The Mintzberg framework captures the ideal structure of an organization, the duties each element carries out and its relationship to the district's overall goal. An application of this organizational framework to schools is illustrated here in order to demonstrate its utility for designing and assessing the adoption of a school health policy. Using the Mintzberg framework an assessment of a new reproductive health and safety policy in North Carolina, the Healthy Youth Act (Assembly, 2009), will be reviewed, followed by examples on how the framework can be used to answer additional research questions.

Mintzberg's Framework of Bureaucracy

In 1979, Henry Mintzberg (Mintzberg, 1979) published the book "The Structuring of Organizations" as a field guide for those who wished to understand a) how organizations were structured, b) their elements and their role in achieving the organization's goals and c) which cogs need to be examined to answer a given question. According to Mintzberg, there are three basic elements to any organization: the operating core, administrative component and support staff. The operating core consists of those who are involved in the day-to-day running of the organization and perform the basic tasks of the organization. The support staff are specialists who provide support services

but operate outside of the organization's operating core. Mintzberg divides the administrative component into three subcategories: strategic apex, the middle line and the technostructure. The strategic apex consists of the top administrators who ensure the organization operates effectively and consistently. The middle line consists of administrators who link the strategic apex to the operating core. These individuals are the senior managers, who have direct authority and supervision over the operating core. Finally, the technostructure consists of administrators whose primary responsibilities are the planning and training of the organization (Mintzberg, 1979).

Recognizing the benefit of organizational structure for education, Chance (Chance, 2009) published a book linking the framework's levels to the structure of school districts. It is important to note that while this framework was adapted, the same mechanisms are in place as the original. Further, as the book introduced several organizational theories, little guidance was provided as to how Mintzberg's framework can be used to assess the adoption of a school health policy. Figure 3 displays the school positions which fall under each element of the structure.

As shown, the strategic apex consists of the superintendent and assistant superintendent. These individuals are charged with managing school districts and acting as a community liaison for district-related issues. The middle line consists of school principals and vice principals, who are in charge of administering the rules and expectations within their individual system. The operating core or teachers are those in charge of carrying out the basic work of the organization. The technostructure, which exists outside the direct oversight of the strategic apex, is charged with standardizing the

work of others within the school district. Finally, the support staff carries out work outside the direct delivery of the organization's mission but nonetheless enables the other four groups to operate effectively.

It is through the combined efforts and standardization of duties that enables the school district to operate effectively. Table 10 displays the role each element plays in the school district, and theorizes the function each plays in the adoption and implementation of new policies. While Table 10 represents how an organization will ideally work in society, reality is often different. For example, the technostructure/curriculum coordinators are in charge of selecting, reviewing and training teachers to deliver curriculum to meet the requirements and standards of the school system. However, their job and performance is impacted by a number of elements. First, while they technically exist outside the direct flow of district work, they still report to the Apex or Superintendents (Mintzberg, 1979). Thus, their selection and adoption of a new policy or program needs approval of the Apex to occur. Second, the curriculum coordinator is charged with training teachers but not delivering curricula themselves. Therefore, while they select programs and oversee its adoption via teacher training, they are not part of their execution. Third, the curriculum coordinator is constrained by the resources available to acquire a new program and meet existing standards. Resources have been found to vary from community to community (Education, 2008a, 2008b), contributing to differences in educational quality. Finally, there are often process standards of vetting and adopting a policy or program (Mintzberg, 1979) which can impact whether or not a program is adopted as proposed.

Ways to Apply the Framework

Understanding organizational culture and the impact the environment has on school functioning offers a critical step in understanding the differences between school districts. In this section, we will discuss how aspects of the Mintzberg framework informed a study on the adoption of North Carolina's Healthy Youth Act and explore ways in which the framework can be extended to future efforts.

Prior to the passage of the Healthy Youth Act (Assembly, 2009) (Act), North Carolina's reproductive health and safety policy was abstinence-only education. When passed in 2009, the Act mandated the adoption of at least an abstinence-plus curriculum in grades 7-9 sometime during the 2010-2011 school year; the decision of which program to adopt and when during the school year to adopt it was left up to the individual school districts. The authors investigated how the elements of the Act, and the role of the curriculum coordinators and the community affected adoption. The ultimate goal was to understand how perception of a policy or program influences the rate of policy adoption.

In order to understand organizational culture and how contextual elements affected health program adoption, curriculum coordinators were asked the following questions:

- How did the Healthy Youth Act align with their professional values?
- How did the Healthy Youth Act align with their organizational values?
- What is the process you typically use when you are working to adopt a new policy?

- What was the process used to adopt the Healthy Youth Act? This included those convened to guide the process, the information sources used, the stakeholders involved in the process and the how it differed from other efforts?
- What was the role of the surrounding community in adopting or not adopting the Healthy Youth Act?

By asking these questions, the authors were able to better understand the role organizational culture and relationships within the school structure played in the adoption of the Healthy Youth Act and the rate in which it was adopted.

The curriculum coordinators were charged with selecting the health program which would meet the requirements of the Healthy Youth Act and the needs of their community. Because of this, the majority indicated that the Act aligned with their professional values; however when it conflicted with the organizational values, adoption did not occur. In essence, the curriculum coordinators were overruled by the Apex or Superintendents and Assistant Superintendents in their district. By inquiring about the process used to adopt the policy, the authors found that the typical steps to select, adopt and train teachers were expanded. In particular, community meetings and stakeholder involvement were incorporated from day one to ensure a smooth transition. This process appeared to be effective, with the actual adoption of the Act being met with little to no resistance by the community.

The above example is just one way in which the framework can be used to inform school health research. However, its utility can be further expanded to investigate additional questions of interest. In the case of the Healthy Youth Act, the authors were interested in understanding adoption, necessitating a focus on the technostucture and

apex. To investigate how the Act is implemented, either teachers and/or principals/assistant principals would need to be included in a future study. Questions to ask to understand how organizational culture impacts the implementation of the program may include:

- What district resources are provided for teacher training?
- What level of oversight do principals have over their teachers?
- In what ways are teachers held accountable for student results?
- What degree of autonomy does each school have?

By asking these questions, we can learn the level of support offered to teachers and principals by the school district and how this impacts their overall ability to perform their job. For instance, superintendents and/or assistant principals can allocate district funds for substitute teachers to allow professional development courses during school hours. Another example would be the presence of an incentive system based on teacher reviews or student performance. Finally, programming decisions may be left up to each individual school, indicating a *laissez faire* or hands-off approach to organizational leadership on the district level. Ultimately, these questions can be used to determine “how things are done around here”, thereby uncovering the organizational culture at play.

Further, these considerations can be used to explore other questions of interest to health educators. Table 11 displays sample research questions commonly asked by school health professionals, the appropriate audience to target and key measures used in answering each. By applying organizational culture and context questions to these

questions, we can begin to understand the reasons why differences exist in regards to school health programming.

Conclusion

This article introduces researchers and school health professionals to an organizational framework that can assist them in understanding how organizational culture and context influences school health programs. As more pressure is put to on educators to demonstrate the feasibility and success of programs and policies targeting health outcomes, the Mintzberg framework can be used to develop questions and target groups to produce the best research possible. The framework can also be used to increase the potential for the successful adoption and implementation of health policies and programs and ultimately better health outcomes for youth.

Tables and Figures

Figure 3: Bureaucratic Structure of School Districts

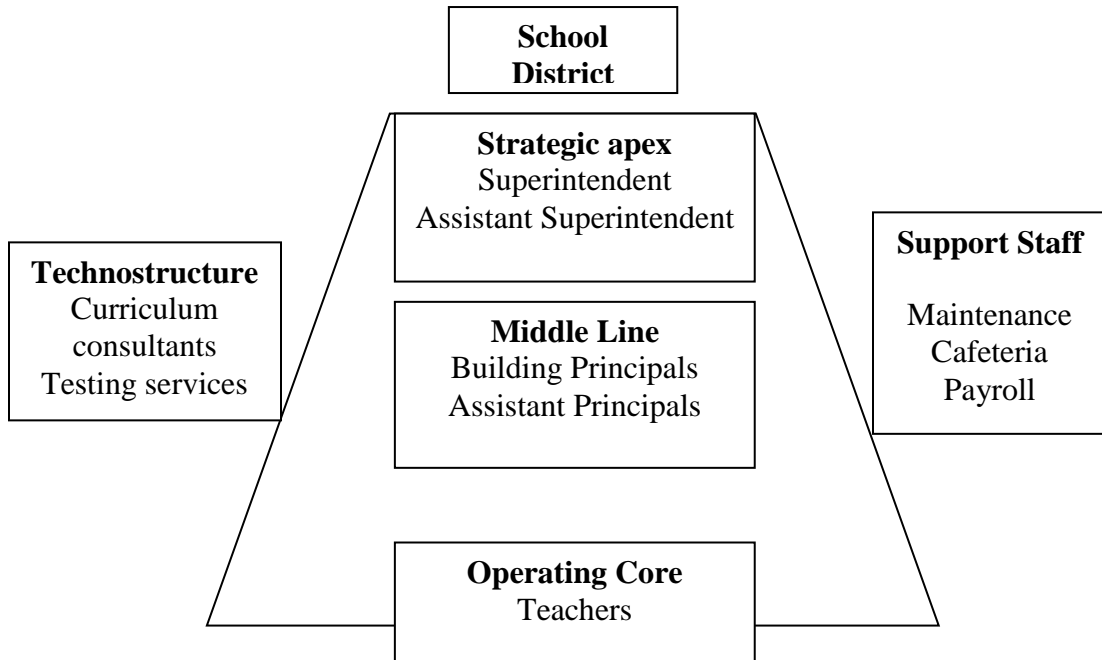


Table 10: School Structural Elements and Its Role

Targeted Level	Position Occupied (e.g.)	Role in School Programming	How Role is Performed
Operating core	Teachers	Implementation	In charge of executing the program/delivering it to the study body
Apex	Superintendent Assistant Superintendent	Adoption and Implementation; Community Liaison	Alternatively in charge of selecting a program and/or overseeing its implementation in the schools
Technostructure	Curriculum Coordinators Director of Curriculum	Adoption	In charge of selecting and training staff in programs to meet school regulations
Middle Line	Principals Vice/Assistant Principals	Adoption and Implementation	Oversees the adoption and implementation in their individual schools
Support Staff	Cafeteria workers Janitors PTA	Exists outside the structure	Exists outside the direct goals of the organization

Table 11: Example Questions by Organizational Position

Types of Research Questions	Key Measures	Targeted Level
What is the impact of professional preparation on delivery in health education classes?	Fidelity of program delivery Number of topics covered Student test scores	Operating core (teachers)
What effect does funding have on the services provided within a school district?	Amount of funds received, reduction or elimination of programs, new programs started	Apex (Superintendent/Assistant Superintendent)
What process is undertaken to adopt a new school health policy?	Perception of attributes of selected health programs	Technostructure
How do health programs impact the overall functioning of a school?	Quality of policies, facilities and programs	Middle Line (principals/assistant principals)
What role does participation in school lunch programs play on children's overall eating behavior?	Fresh food offerings, process food offerings, what children buy	Support Staff (cafeteria workers)

CHAPTER V

EPILOGUE

Summary of Study Goals and Findings

The goal of this dissertation was to explore what elements contribute to the adoption of the Healthy Youth Act in North Carolina schools. To do this, the Mintzberg framework of organizational structure and Rogers' Diffusion of Innovations were consulted. A mixed methods study was developed, with a quantitative survey being conducted first and follow-up interviews second. A total of 40 people answered the survey, with 35 retained for analysis and eight individuals participating in the follow-up interview to better understand the process of adopting the Act.

Findings from the quantitative portion suggest that the more a policy is seen as being better than the current method and the more it is compatible with the organizational and professional values present, the likelihood of it being adopted will increase. Perhaps because of the mandatory nature of the Healthy Youth Act (the Act), the complexity, trialability and observability of the policy were not associated with adoption. The findings are consistent with other studies which have used the Diffusion of Innovations framework, where relative advantage, followed by compatibility, were the most significant predictors for adoption.

The interview portion of the study both supported the findings of the survey and revealed new findings. The participants discussed at length how the Healthy Youth Act

was better able to meet the needs of the student body and how the Act was compatible with their goals as an educator. The interviews further expanded the quantitative findings by revealing while complexity was not directly related to adoption, it did influence the process used to adopt. It was found that the perceptions of the community and the values of the school district were largely considered throughout the adoption process and, in one specific instance, impeded on the successful adoption of the Healthy Youth Act. Further, sexual health training, while not statistically significant, did appear to have a moderate relationship to the overall rate of adoption. Individuals without sexual health training indicated in less comfort and positive perceptions of the HYA than those who had formal sexual health training.

Based on these findings, the following conclusions can be made from the study.

1. Both the Diffusion of Innovations and Mintzberg's framework can be used to understand the process of adopting a school health policy.
2. Like previous studies, relative advantage and compatibility of a new innovation are the most important attributes contributing to the adoption of a new school health policy.
3. The organizational structure and power dynamics impact of the school district impact the adoption of a new policy. As shown, if the assistant superintendents/superintendents are not on board with a new policy, change cannot occur.
4. The community is an important element to consider in the adoption of a new school health policy. As shown, the mere perception of what a community thinks

about a new policy can impact the degree to which it is adopted. Further, this consideration also influences the process used to adopt, leading to greater stakeholder involvement and transparency in action.

Implications for the Field and Future Directions

The results of this study have implications for North Carolina and nation-wide. For North Carolina, it is important for the Department of Public Instruction and the School Health Training Center to address the advantage the Healthy Youth Act has over the old and how it is reflective of the community's desire to have reproductive health and safety education in the schools. Further, findings indicate that the Department of Public Instruction needs to investigate the level of adoption in the school districts to identify those who are noncompliant and the reasons why. This will enable them to address issues leading to noncompliance and help ensure all North Carolina public school districts are receiving the required amount of education. Nationally, there is a burgeoning movement to institute year-end assessments of health knowledge, including sexual health. It is becoming increasingly necessary to look at the sexual health programs, how they are adopted and the fidelity of delivery to understand why students may or may not be achieving satisfactory scores on examinations.

Based on this, the following needs should to be considered for future school health policy work:

1. Future work needs to focus on educating school district administrators on the benefits of a new school health policy. As shown, lack of initial or overall

agreement in the benefit of the Healthy Youth Act contributed to the later adoption or lack of adoption in the school districts. If school administrators and curriculum coordinators can be educated upon passage of a new policy, then greater adoption may occur.

2. Future work needs to consider the organizational structure of schools and how community characteristics affect functioning. As demonstrated, differences existed between adoption based on the perception of the community and how those with organizational power perceived the act. Studying these mechanisms can offer further insight into these power dynamics, how they function and ways to work with them.
3. Finally, future work should look at not only the adoption but implementation of a school health policy. While school districts and curriculum coordinators may have adopted a program compliant with the HYA, it is not known how well and to what extent each program is being taught. By studying its implementation, researchers and educators will gain insight into how the Act is being executed, which teachers and school districts are being faithful to the intent of the Act and what needs to be done to improve the performance in all school districts.

Personal Reflection

When I first came to UNCG, the Healthy Youth Act was just being proposed in the North Carolina General Assembly. My initial thoughts on what to do for my dissertation were scattered and varied, ranging from secondary data analysis to a

qualitative study on how families cope with the suicide of a loved one. However, when Dr. Strack invited me to become involved in the community-wide evaluation of adolescent pregnancy prevention programs and introduced me to the Guilford Coalition on Adolescent Pregnancy Prevention (GCAPP), studying the Act became a logical and exciting option for my dissertation.

I am grateful for the experience I have had while at UNCG. I have had the opportunity to learn not only from professors but from my student colleagues as well. I didn't know how much I didn't know until I came here. I will take the lessons learned not only from this project but from my vast experiences here with me as I start my career. Thank you.

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APPENDIX A:
RECRUITMENT LETTERS

June 20, 2011

Virginia Brown, MA
Doctoral Candidate
Public Health Education
The University of North Carolina at Greensboro
437 HHP Building, P.O. Box 26170
Greensboro, NC 27402-6170

To Whom It May Concern:

My name is Virginia Brown and I am currently a doctoral student in public health education at the University of North Carolina Greensboro. As part of my dissertation, I am conducting a pilot study with North Carolina School Assistant Superintendents to assess a tool designed to examine the adoption of the Healthy Youth Act statewide. This pilot study is part of a three phase study to understand how the Healthy Youth Act was adopted by the various North Carolina LEAs. The study has garnered support from the Department of Public Instruction, the North Carolina School Health Training Center at Appalachian State and the Adolescent Pregnancy Prevention Campaign of North Carolina and the final study results will ultimately be used to inform policy makers about what is needed to assist in the adoption of school policies.

Below is a link to the survey online, which should take approximately 10 minutes to complete. Results from this study will be used to assess the quality of the questions and improve on them for future used. For those who chose to participate, your identity and information will be kept separate. The survey will remain active for two weeks and reminder emails will be sent in one week to those who have not yet filled out the survey.

If you have any questions or concerns regarding this study, you can contact Dr. Robert Strack at 336-334-3239 or rwstrack@uncg.edu

Thank you for your participation.

Sincerely,

Virginia Brown, MA

Virginia Brown, MA
Doctoral Candidate
Public Health Education
The University of North Carolina at Greensboro
437 HHP Building, P.O. Box 26170
Greensboro, NC 27402-6170

To Whom It May Concern:

My name is Virginia Brown and I am currently a doctoral student in public health education at the University of North Carolina Greensboro. As part of my dissertation, I am conducting a survey of North Carolina curriculum coordinators to understand the adoption of the Healthy Youth Act. The goal of the study is to understand what elements contributed to the rate of adoption of the policy and assist those who may not yet be in compliance become compliant. The study has garnered support from the Department of Public Instruction, the North Carolina School Health Training Center at Appalachian State and the Adolescent Pregnancy Prevention Campaign of North Carolina and the information gathered will ultimately be used to inform policy makers about what is needed to assist in the adoption of school policies.

Below is a link to the survey online, which should take approximately 10 minutes to complete. For those who chose to participate, your identity and information will be kept separate. No individual or county will be named in the findings. Additionally, any profiles reported will be aggregate. Finally, identities of those who report will only be known to study staff and will not be released to others. The survey will remain active for four weeks and reminder emails will be sent to those who have not yet filled out the survey.

If you have any questions or concerns regarding this study, you can contact Dr. Robert Strack at 336-334-3239 or rwstrack@uncg.edu.

Thank you for your participation.
Sincerely,

Virginia Brown, MA

APPENDIX B:
CONSENT FORMS

June 20, 2011

Dear Participant:

Thank you for agreeing to participate in this pilot study. The goal is to the project is to create a tool to effectively investigate the rate of adoption of the Healthy Youth Act and make recommendations to policy makers about what they can do to assist in the adoption of school policies. In accordance with University and federal guidelines, this study and this consent form has been approved by the University of North Carolina at Greensboro Institutional Review Board.

On the following on-line pages are questions designed to assess the type of reproductive health and safety education used prior to the passage of the Healthy Youth Act, the education under the Healthy Youth Act and the elements that influence adoption. The survey is voluntary. Every effort will be given to ensure your responses are confidential. However, absolute confidentiality of data provided through the Internet cannot be guaranteed due to the limited protections of Internet access. Please be sure to close your browser when finished so no one will be able to see what you have been doing. Your privacy will be protected. You will not be identified by name or other identifiable information as being part of this project. Further, your involvement will be anonymous and responses will be kept confidential. You may skip any question or chose to leave the study at any time. There is no risk of harm associated with your involvement in this study. By filling out this survey, you are giving consent and agree to accept the risks as outlined above.

It is anticipated that the survey will take about 10-15 minutes to complete. The information gathered in this survey will be used to determine the quality of each survey question and results will be used to edit and change the survey. By being involved in this survey, you are consenting to allow the information we collect to be used in this way.

Thank you for volunteering for this study. We appreciate you taking the time to do so. If you want any additional information about the study, please contact Dr. Robert Strack at 336-334-3239 or rstrack@uncg.edu .If you have any concerns about your rights, how you are being treated or if you have questions, want more information or have suggestions, please contact Eric Allen in the Office of Research Compliance at UNCG at (336) 256-1482.

Thank you in advance for your valuable advice and feedback.

Sincerely,

Virginia Brown, MA, DrPH Candidate
Department of Public Health Education
The University of North Carolina at Greensboro
437 HHP Building, P.O. Box 26170
Greensboro, NC 27402-6170
V_Brown@uncg.edu

UNCG IRB
Approved Consent Form
Valid 6/21/11 to 6/20/14

Informed Consent

Project Title: Assessment of the Adoption of the Healthy Youth Act

Project Director: Robert Strack, PhD

Description of the Study:

This is a research project. The goal of the study is to understand the adoption of the Healthy Youth Act in North Carolina local education authorities and the differences between counties who have adopted the Act and those who have not. Dr. Strack and study staff are conducting the study to better understand what influences adoption and ultimately inform field professionals about what they can do to enhance policy adoption and implementation.

Why are you asking me?

Because the goal of the study is to investigate the adoption of the Healthy Youth Act, the research team made the decision to survey individuals working of the school district, as that is where adoption decisions are made. Based on this, the team identified those individuals who would be most familiar with the reproductive health and safety curriculum used in the school district, which would be the curriculum coordinators or lead health educators of each local education authority.

What will you ask me to do if I agree to be in the study?

Participation in the study involves approximately a 10 minute survey. You will be asked to describe the reproductive health and safety curriculum used before and after the passage of the Health Youth Act and evaluate factors which may have contributed to the adoption of a new curriculum.

Are there any audio/video recording?

Because this is an internet survey, there will be no audio/video recording.

Are there any benefits to me for taking part in this research study? Are there any benefits to society?

While there are no direct benefits to the participants, the information given will provide valuable insight to policy diffusion and implementation not fully explored or understood by academia.

What are the dangers to me?

There are minimal risks associated with this study as discomfort may occur due to the topic at hand. If you have any concerns about your rights, how you are being treated or if you have questions, want more information or have suggestions, please contact Eric Allen in the Office of Research Compliance at UNCG at (336) 256-1482. Questions, concerns or complaints about this project or benefits or risks associated with being in this study can be answered by Dr. Robert Strack who may be contacted at (336) 334-3239.

How will you keep my information confidential:

UNCG IRB
Approved Consent Form
Valid 7/28/11 to 7/26/12

All information obtained in this study is strictly confidential unless disclosure is required by law. Only the research team will have access to the study data and information. No names of individuals or counties will be made available to anyone outside the study. Identifying information will be removed from study responses and will be stored separately from other material. All results will be reported without identifying information and may be published in a professional journal or at professional meetings.

Because this is an internet survey, **Absolute confidentiality of data provided through the Internet cannot be guaranteed due to the limited protections of Internet access. Please be sure to close your browser when finished so no one will be able to see what you have been doing.**

What if I want to leave the study?

Participation in this research study is voluntary. You have the right to refuse to participate or to withdraw at any time, without penalty. If you do withdraw, it will not affect you in any way. If you choose to withdraw, you may request that any of your data which has been collected be destroyed unless it is in a de-identifiable state.

What about new information/changes in the study?

If significant new information relating to the study becomes available which may relate to your willingness to continue to participate, this information will be provided to you.

Voluntary Consent:

By electronically signing this consent form you are agreeing that you have read it, or that it has been read to you and you fully understand the contents of this document and are openly willing to consent to take part in this study. All of your questions concerning this study have been answered. By signing this form, you are agreeing that you are 18 years of age or older and are agreeing to participate, or have the individual specified above as a participant participate, in this study described to you by Dr. Robert Strack.

Signature: _____ Date: _____

UNCG IRB
Approved Consent Form

Valid 7/28/11 to 7/26/12

Informed Consent

Project Title: Assessment of the Adoption of the Healthy Youth Act

Project Director: Robert Strack, PhD

Description of the Study:

This is a research project. The goal of the study is to understand the adoption of the Healthy Youth Act in North Carolina local education authorities and the differences between counties who have adopted the Act and those who have not. Dr. Strack and study staff are conducting the study to better understand what influences adoption and ultimately inform field professionals about what they can do to enhance policy adoption and implementation.

Why are you asking me?

Because the goal of the study is to investigate the adoption of the Healthy Youth Act, the research team made the decision to survey individuals working of the school district, as that is where adoption decisions are made. Based on this, the team identified those individuals who would be most familiar with the reproductive health and safety curriculum used in the school district, which would be the curriculum coordinators or lead health educators of each local education authority.

What will you ask me to do if I agree to be in the study?

Participation in this portion of the study involves a 30-45 minute interview about the experience of adopting the Healthy Youth Act. The interview will be conducted via phone at a time convenient to the participant.

Are there any audio/video recording?

The phone interview will be audio recorded using an internet voice recorder. Participants who participate in it will have this consent form reviewed with them and verbal permission will be obtained to record the interview. Only after this is done will the recording start.

Are there any benefits to me for taking part in this research study? Are there any benefits to society?

While there are no direct benefits to the participants, the information given will provide valuable insight to policy diffusion and implementation not fully explored or understood by academia.

What are the dangers to me?

There are minimal risks associated with this study as discomfort may occur due to the topic at hand. If you have any concerns about your rights, how you are being treated or if you have questions, want more information or have suggestions, please contact Eric Allen in the Office of Research Compliance at UNCG at (336) 256-1482. Questions, concerns or complaints about this project or benefits or risks associated with being in this study can be answered by Dr. Robert Strack who may be contacted at (336) 334-3239.

How will you keep my information confidential:

UNCG IRB
Approved Consent Form

Valid 7/28/11 to 7/26/12

All information obtained in this study is strictly confidential unless disclosure is required by law. Only the research team will have access to the study data and information. No names of individuals or counties will be made available to anyone outside the study. Identifying information will be removed from study responses and will be stored separately from other material. All results will be reported without identifying information and may be published in a professional journal or at professional meetings.

What if I want to leave the study?

Participation in this research study is voluntary. You have the right to refuse to participate or to withdraw at any time, without penalty. If you do withdraw, it will not affect you in any way. If you choose to withdraw, you may request that any of your data which has been collected be destroyed unless it is in a de-identifiable state.

What about new information/changes in the study?

If significant new information relating to the study becomes available which may relate to your willingness to continue to participate, this information will be provided to you.

Voluntary Consent:

By signing this consent form you are agreeing that you have read it, or that it has been read to you and you fully understand the contents of this document and are openly willing to consent to take part in this study. All of your questions concerning this study have been answered. By signing this form, you are agreeing that you are 18 years of age or older and are agreeing to participate, or have the individual specified above as a participant participate, in this study described to you by Dr. Robert Strack.

Signature: _____ Date: _____

UNCG IRB
Approved Consent Form
Valid 7/28/11 to 7/26/12

APPENDIX C:
HEALTHY YOUTH ACT SURVEY

The questions in this survey are designed to understand the adoption of the Healthy Youth Act. Please answer them to the best of your ability.

The first set of questions is about the reproductive health and safety curriculum used prior to the Healthy Youth Act. Please choose the best answer(s) to the questions below.

1. Based on their definitions, how would you describe your approved reproductive health and safety education program prior to the passage of the Healthy Youth Act?

- Abstinence- Only Until Marriage- the program focuses exclusively on the postponement of sexual activity until marriage (1)
- Abstinence Plus- the program still emphasizes that abstinence until marriage is the desired norm for American society but does introduce scientifically accurate information on contraception, STDs and HIV into the program (2)
- Comprehensive Education- reproductive health and safety education starts in kindergarten and continues through 12th grade. These programs include age-appropriate, medically accurate information on a broad set of topics related to sexuality including human development, relationships, decision-making, abstinence, contraception, and disease prevention. They provide students with opportunities for developing skills as well as learning information. This includes discussion on sexual orientation, masturbation and abortion. (3)

2. Who delivers the reproductive health and safety education in your LEA schools (example: trained health educators, PE teachers, etc)?

3. What are the education, certification or training requirements for those who deliver the reproductive health and safety curriculum?

4. Please select the components of your old reproductive health and safety education.

	Select if included in the old reproductive health and safety curriculum (1)
Abstinence until marriage is the expected standard. (1)	<input type="radio"/>
Teach and emphasize risks of premarital sex (2)	<input type="radio"/>
Present techniques to deal with peer pressure and offer positive reinforcement (3)	<input type="radio"/>
Present reasons, skills and strategies for remaining or becoming abstinent (4)	<input type="radio"/>
Provide factually accurate biological information related to the human	<input type="radio"/>

<p>reproductive system (5)</p> <p>A mutually faithful monogamous heterosexual relationship in the context of marriage is the best way to avoid STDs, including HIV/AIDS (6)</p> <p>Provide Information on both the effectiveness and failure rates of current contraception in preventing pregnancy and STDs (7)</p> <p>Offer opportunities for parent/child interaction (8)</p> <p>Material used be based on scientific research that is peer reviewed and accepted by professionals and credentialed experts in the field of sexual health education (9)</p> <p>Need to present and discuss the effectiveness and safety of all FDA-approved contraception for the prevention of STDs (10)</p> <p>Need to present and discuss the effectiveness and safety of all FDA-approved contraception for pregnancy prevention (11)</p> <p>Teach and raise awareness around sexual assault, sexual abuse and risk reduction (12)</p>	<p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p> <p><input type="radio"/></p>
---	--

5. Did your school district change your reproductive health and safety curriculum to fit the Healthy Youth Act?

- No (1)
- Yes (2)

If No Is Selected, Then Skip To If you did not change your reproducti...If Yes Is Selected, Then Skip To Do you feel you have fully adopted th...

6. Do you feel you have fully adopted the Healthy Youth Act?

- Yes (1)
- No (2)

If Yes Is Selected, Then Skip To If yes, what month and year did you f...If No Is Selected, Then Skip To Given how long it can take to adopt a...

7. If yes, what month and year did you fully adopt the Healthy Youth Act?

If If yes, what month and year... Is Not Equal to, Then Skip To The next set of questions are about t...

8. Given how long it can take to adopt a new education policy, we recognize LEAs may be at different points in adoption. Where do you believe your LEA is in the adoption process?

_____ Adoption (1)

9. Please describe in 2 to 3 sentences where you are in the adoption of the Health Youth Act.

If Please describe in 2 to 3 s... Is Not Empty, Then Skip To The next set of questions are about t...

10. If you did not change your reproductive health and safety curriculum, what was the reason (ex: community is not supportive, did not have the resources, already had a curriculum which complied with the Healthy Youth Act, etc.)?

The next set of questions are about the reproductive health and safety curriculum adopted to meet the Healthy Youth Act. Please choose the best answer(s) to the questions below.

11. How would you describe the new reproductive health and safety curriculum you have adopted/are adopting?

- Not applicable/did not change our curriculum (1)
- Abstinence- Only Until Marriage- the program focuses exclusively on the postponement of sexual activity until marriage (1)
- Abstinence Plus- the program still emphasizes that abstinence until marriage is the desired norm for American society but does introduce scientifically accurate information on contraception, STDs and HIV into the program (2)
- Comprehensive Education- reproductive health and safety education starts in kindergarten and continues through 12th grade. These programs include age-appropriate, medically accurate information on a broad set of topics related to sexuality including human development, relationships, decision-making, abstinence, contraception, and disease prevention. They provide students with opportunities for

developing skills as well as learning information. This includes discussion on sexual orientation, masturbation and abortion. (3)

If Not applicable/did not chan... Is Selected, Then Skip To The following section is to assess ho...

12. Please select the components of your new reproductive health and safety curriculum.

	Select if included in the old reproductive health and safety curriculum (1)
Abstinence until marriage is the expected standard. (1)	<input type="radio"/>
Teach and emphasize risks of premarital sex (2)	<input type="radio"/>
Present techniques to deal with peer pressure and offer positive reinforcement (3)	<input type="radio"/>
Present reasons, skills and strategies for remaining or becoming abstinent (4)	<input type="radio"/>
Provide factually accurate biological information related to the human reproductive system (5)	<input type="radio"/>
A mutually faithful monogamous heterosexual relationship in the context of marriage is the best way to avoid STDs, including HIV/AIDS (6)	<input type="radio"/>
Provide Information on both the effectiveness and failure rates of current contraception in preventing pregnancy and STDs (7)	<input type="radio"/>
Offer opportunities for parent/child interaction (8)	<input type="radio"/>
Material used be based on scientific research that is peer reviewed and accepted by professionals and credentialed experts in the field of sexual health education (9)	<input type="radio"/>
Need to present and discuss the effectiveness and safety of all FDA-approved contraception for the prevention of STDs (10)	<input type="radio"/>
Need to present and discuss the effectiveness and safety of all FDA-approved contraception for pregnancy prevention (11)	<input type="radio"/>
Teach and raise awareness around sexual assault, sexual abuse and risk reduction (12)	<input type="radio"/>

13. Where did you get the new reproductive health and safety curriculum?
- Purchased a program (1)
 - Designed our own (2)
 - North Carolina School Health Training Center at Appalachian State University (3)
 - Adolescent Pregnancy Prevention Campaign of North Carolina (4)
 - Other (5) _____

14. If you purchased a curriculum, which one did you select?

The following section is to assess how much better you believe the Healthy Youth Act was compared to the old policy. Please indicate how much you agree or disagree with each statement.

15. I believe the Healthy Youth Act is better than the old policy.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

16. The students find the Healthy Youth Act to be more relevant than the old policy.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

17. I believe the Healthy Youth Act will better reduce the number of unwanted pregnancies among youth than the old.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

18. I believe the Health Youth Act will better reduce/prevent the number of sexually transmitted diseases among youth than the old.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

19. The benefits of the Healthy Youth Act outweigh its disadvantages.
- Strongly Disagree (1)
 - Disagree (2)
 - Agree (3)
 - Strongly Agree (4)
20. The potential outcomes outweigh the economic costs of the Healthy Youth Act.
- Strongly Disagree (1)
 - Disagree (2)
 - Agree (3)
 - Strongly Agree (4)
21. The Healthy Youth Act takes a longer time to implement than the old.
- Strongly Disagree (1)
 - Disagree (2)
 - Agree (3)
 - Strongly Agree (4)
22. The Healthy Youth Act requires more continual training than the old.
- Strongly Disagree (1)
 - Disagree (2)
 - Agree (3)
 - Strongly Agree (4)
23. The Health Youth Act meets the needs of the student population.
- Strongly Disagree (1)
 - Disagree (2)
 - Agree (3)
 - Strongly Agree (4)
24. Overall, the benefits of the Healthy Youth Act outweigh its disadvantages.
- Strongly Disagree (1)
 - Disagree (2)
 - Agree (3)
 - Strongly Agree (4)

The next set of questions look at how easy it is/was to adopt the Healthy Youth Act. Please indicate how much you agree or disagree with each statement.

25. It was/is easy to find resources to deliver the Healthy Youth Act message.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

26. It was/is easy to find funding to support the Health Youth Act message.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

27. It was/is easy to find programs which fit the requirements of the Healthy Youth Act.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

28. It was/is easy to acquire the program to adopt the Healthy Youth Act.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

29. It was/is easy to find people skilled and capable of promoting the Healthy Youth Act.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

30. It was/is easy to understand the language of the Healthy Youth Act.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

The next set of questions is to assess how well the Health Youth Act fits the LEA. Please indicate how much you agree or disagree with each statement.

31. The Healthy Youth Act is compatible with my personal values.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

32. The Healthy Youth Act is compatible with my professional values.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

33. The Healthy Youth Act is compatible with my organization's values.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

34. The Health Youth Act meets the needs of my organization.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

35. Overall, the Healthy Youth Act is able to meet the needs of my community.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

The next set of questions is to assess the degree to which you were able to investigate, observe and/or try out new programs to fit the requirements of the Healthy Youth Act. Please indicate how much you agree with each statement.

36. The health educators were/are excited to adopt the Healthy Youth Act.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

37. I had enough time to investigate programs for the Health Youth Act.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

38. I had enough time to test the programs for the Healthy Youth Act.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

39. The reproductive health and safety curriculum was chosen because it had worked in other schools.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

40. The new curriculum or elements was easily incorporated into the district's standard course of study.

- Strongly Disagree (1)
- Disagree (2)
- Agree (3)
- Strongly Agree (4)

The last questions are so we can describe our participants. Please answer the following questions.

41. What is your age?

42. What is your sex/gender?

Male (1)

Female (2)

43. What LEA do you represent?

44. How long have you been with the school system?

45. What is your position?

46. What is your highest degree?

Bachelors (1)

Post-Baccalaureate certificate (2)

Masters (3)

Post-Masters certificate (4)

Doctorate (5)

Other (6) _____

47. Do you have training in health education, family life education or sexual health education?

Yes (1)

No (2)

48. About how often do you go to religious services?

Never (1)

Sometimes but not every week (2)

Every week (3)

More than once a week (4)

Once a Week (23)

2-3 Times a Week (24)

Daily (25)

49. How important is religion in your life?

Very Unimportant (1)

Neither Important nor Unimportant (2)

Very Important (3)

50. Would you be willing to participate in a follow-up interview about your experience(s) with the Healthy Youth Act? If so, please give me your name and contact information

Yes (1)

No (2)

51. What is your name and contact information (including email) so that I can set up the interview?

APPENDIX D:
INTERVIEW GUIDE

Me: Thank you again for agreeing to participate in this interview regarding your personal experience with the Healthy Youth Act. Before we begin, the IRB requires that I briefly review the consent form before we can start the questions. I would like to just briefly highlight its key points in the consent form sent to you.

- All responses will remain confidential. No personal identifying information will be included in any report
- There are no right or wrong answers.
- I am interested in your experience. I will not be offended by your response.
- The interview is being recorded and notes are being taken to ensure your information is accurately captured.
- The interview should be about 40-45 minutes.
- The interview is voluntary. You may choose to stop at any time

Do you have any questions? Now, let's begin.

10. First, could you tell me what it means to be a Health Teacher

- a. Day to day activities
- b. Primary duties of one

11. Could you please tell me what it means to be a Health Teacher in your LEA?

- a. Benefits?
- b. Challenges?
- c. Possible probes: what is it like working in a mostly rural community, superintendents, teachers,

12. Could you please describe the process you typically use when you are working to adopt a new policy?
13. Now, can you tell me about the process of adopting the Healthy Youth Act?
 - a. Who did you convene to guide the process
 - b. Where/what sources did you seek information from
 - c. What stakeholders were tapped to be involved
 - d. How was it from other policy adoptions
14. How does communication work between your LEA and:
 - a. DPI?
 - b. other LEAs ?
 - c. how did you first hear about the Healthy Youth Act?
15. (conditional upon whether or not previously discussed) What was the role of the surrounding community in adopting or not adopting the Healthy Youth Act?
16. What was your initial reaction to the Healthy Youth Act? (try to be conversational about this)
 - a. Personally? Shock, excited, apprehensive?
 - b. Professionally?
17. What agency or person integral really pushed forward the adoption of the Act?
 - a. Were there any barriers to adoption? Please discuss.
18. Overall, what is the impact the Act has had on the LEA and community as a whole?

Thank you for answering these questions. As you know, the goal is to understand the adoption of a new policy. Is there anything I didn't ask or miss that help us better understand this process for future efforts?

Thank you again. Would it be ok to contact you if I have any additional questions?

APPENDIX E:
PROTECTION OF HUMAN SUBJECTS

As with any research involving human participants, ensuring the protection of human subjects is vital. Below, the potential risk, potential benefits and strategies to minimize harm are detailed.

Inclusion of Women and Minorities

Because this project is being conducted on the North Carolina public school system professionals, women will be included.

Inclusion of Children

Because the study is being conducted with public school professionals, children are not included in the study.

Potential Risk

The proposed research study seeks to understand what influences the adoption sexual health education curriculum and the difference between school systems. The possible risks associated with this study include: embarrassment, emotional distress, and anxiety. This is due to the sensitive and private nature of the topic being explored.

Potential Benefit

Because the study is being conducted to understand what influences the adoption of a sexual health education curriculum, there are indirect benefits to participants. While there is no direct benefit to participants, the community at large will benefit from the knowledge of what needs to be addressed to ensure adaption of a sexual health education and pregnancy prevention program. The potential benefits of future program adaption include but are not limited to, the decrease of teenage pregnancy and STDs/HIV, an increase in accurate contraceptive use and an increase in healthy relationships amongst teens.

Strategies to Protect Participants' Rights

In order to ensure the rights, privacy, and confidentiality of the participants, several measures are being undertaken. First, consent will be received from participants to gather and use their information. The consent form will include the standard information, such as ability to terminate at any point, the right to skip any question that makes them uncomfortable, and the methods being undertaken to ensure their information is protected. The participant information and data will be kept in separate files in different locations. Further, only the principal investigator will have the password to access the information. Any identifying information will be removed from responses and the responses themselves will only be reported in aggregate form. Finally, all information will be de-identified prior to publication and only aggregate profiles of compliant and noncompliant counties will be used.

Protection of Children's Rights

Because no participant will be under the age of 18, this is not necessary to address.