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# Sex Education Programs, Motivation, and the Seeking of Educational Versus Erotic Material: a Comparison of Abstinence Only Until Marriage and Comprehensive Programs

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# SEX EDUCATION PROGRAMS, MOTIVATION, AND THE SEEKING OF EDUCATIONAL VERSUS EROTIC MATERIAL: A COMPARISON OF ABSTINENCE ONLY UNTIL MARRIAGE AND COMPREHENSIVE PROGRAMS

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ABSTRACT

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Adolescents in different parts of the United States begin formally learning about human sexuality at different times based on state curricula. When students learn about sex, they may be inherently motivated to learn more than the information in the specific available curriculum. This study reviews different theories of motivation and investigates the most current and common forms of sexual education curricula that exist in schools in the United States and their differences. This study attempts to address a potential relationship between motivation felt in the classroom and learning about human sexuality away from the classroom. Reviewed are implications associated with the potential relationships. A review of sources of adolescents using sexual information presents information about where they learned about human sexuality and what effects these sources had on attitudes and behaviors. The purpose of this study was to understand the relationship between sex education curricula, school-prompted interest, and seeking materials about human sexuality outside of class. Participants included students from a western university. Participants completed a survey about their sex education history, the motivation they felt when taking sex education, and other methods they utilized to learn about human sexuality. Data collection and analyses informed the researcher about

relationships between current sexual education curricula and how different curricula may affect motivation and use of outside sources of information. According to the results, adolescents typically look for more information from their friends, the internet, their family, their teachers, and from other sources. Students who received Abstinence Only Until Marriage (AOUM) sex education reported looking for more information about human sexuality using erotic sources. A discussion of limitations included methods of data collection. As well as recommendations for future research in sex education and educational psychology.

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# CHAPTER I

## INTRODUCTION

Adolescents around the United States are required to participate in some form of sexual education, and each student receives instruction differently depending on the background of the adolescent (Gay, 2010). Therefore, it will be important to understand the implications of the course and more specifically the different types of curricula. Certain individuals may also opt out of participating in sex education or may not be involved with a federally or state funded school district. Generally, students receive three types of sex education in the United States: None, comprehensive sex education, and abstinence only until marriage (AOUM) sex education. Each type of education, including none, have their own supporters and dissenters.

Sexuality is inherently motivating, especially for adolescents (Cooper, Shapiro, & Powers, 1998). Researchers should address how students' inherent interest works with curricula about sexuality to understand some of the implications of the curricula. For example, if students want to learn more, where do they go for more information? In this study, it was important to address motivation, to understand sex education in the United States, and to delve into literature about sources of sexual information and their effects on adolescent behaviors.

For many students, what they learn in school can dictate how they make decisions later in life. Whether they show interest or not, they may take away subtle messages from the instructor that may influence their lives negatively or positively. These messages could be in curricula; for example, in the realm of science, if an instructor believes in creationism but must teach only evolution, he or she may teach the topic in a way that may create negative bias for students (Klaczynski & Narasimham, 1998). In math, although much can be hard to imagine and theoretical, if a teacher uses stories to relate the information in a meaningful way, a student could latch on to a story, and it may help the student in future applications. In the English language, how a student interprets a passage could change by how the teacher read it and that could inform or misinform a student depending on interpretation. After a student has learned a lesson in the classroom from the instructor, he or she may supplement that lesson later by finding information on the internet or from other sources. Learning can continue outside of the classroom, and for this research, it was important to understand the sources of information to which students have access and how motivation plays a role in finding meaningful information.

One particularly interesting source of information was the internet. The internet continues growing, and since it started, it has been a source of information for everything and a way for people to communicate faster than ever before. For adolescents, ease of access to the internet presents problems; adolescents have already been turning to sexually explicit materials for hundreds of years (Brown & L'Engle, 2009). Although some seek erotic materials intentionally, many adolescents try to learn about sexual information from the internet. Unfortunately, adolescents may find information online from non-educational erotic sources that support high-risk behavior and lower moral

standards than what society deems appropriate (Borzekowski, 2006; Chia & Gunther, 2006).

Adolescents who receive sex education may find inherent interest in the topic. Harp and Maslich (2005) define details related to sex, death, and romantic intrigue as seductive details. These seductive details are inherently interesting (Harp & Maslich, 2005). Because sex education is composed of seductive details and these details are so interesting to an adolescent, he or she may actually think about these topics while the instructor is trying to teach another topic. This profound effect may extend beyond the classroom and inspire students to do research on their own about their own sexuality and general human sexuality. It is important to understand effects of different curricula on adolescents' interest and motivation to continue learning about sexuality. A relationship between using non-educational erotic sources (e.g., pictures, videos, or writings) and the type of formal sex education that an adolescent receives may help inform instructors and parents about why students choose to view these sources.

The aim of this study was to examine the associations of the types of sex education curricula and students' school-prompted interest, their motivation to learn outside of class (Wang, Bergin, & Bergin, 2014). Research on school-prompted interest is scarce, particularly in the area of sex education. Sexuality is inherently interesting and, under the right conditions, school-prompted interest may occur; that is, students may become interested in learning about sexuality in a school course and seek additional information on their own (Pugh & Bergin, 2005). Literature exists about the type of information students seek outside of school and sexual behaviors that may follow. Reviewing motivation in science classes has helped to understand learning outside of the

classroom, but this information may not parallel learning about sexuality. How different types of sex education influence school-prompted interest, however, was not found in the literature. It is unclear whether sex education motivates students to learn more outside the classroom or whether it inhibits learning. Further, as technology improves, literature about where adolescents find information outside of the classroom as little as five years ago may be outdated.

To understand how sources have changed, an instrument was adapted to measure how students use educational or erotic sources outside of the classroom. Instruments were also adapted to measure the motivation students feel while they were taking sex education and the degree to which they feel motivated to learn about sexuality outside of the classroom. Because of this lack of information, it was the goal of this study to understand the interest and motivation students feel in the classroom, how motivation effects their drive to learn more outside of the classroom, and the sources of information about human sexuality they use.

## Purpose

The lack of literature on the potential relationship between sex education, motivation, and out-of-school information seeking warranted this study. The purpose of this study was to investigate which sources students use to learn about human sexuality outside of class and the potential relationship between type of sex education curricula and school-prompted interest as manifest by amount and type of information seeking pursued outside of class. A further purpose was to investigate whether type of sex education influenced student individual interest and intrinsic motivation, and, if so, whether such motivation mediated the relation between type of sex education and school-prompted

interest. This information will be especially meaningful for instructors who are teaching abstinence only until marriage sex education and comprehensive sex education. School-prompted interest from these two curricula may have impacts on students' learning outside of class. Understanding these relationships will help educators plan future curricula to teach students to make decisions regarding their sexuality.

A systematic study of relationships between a formal sexual education course and motivation to learn about human sexuality outside of class was missing in the sexuality education literature. This literature search included the feelings of interest and motivation in courses about sexuality, potential locations where adolescents seek information based on their motivation from their sex education courses, and whether and how students search types of information based on the course curricula. If instructors use motivational techniques to trigger interest in sex education, students may develop motivation to perform their own research. Once students are motivated to research sexuality, it will be very important in future research to understand the sources students are accessing away from the classroom and the quality of these sources.

It was important to broaden the range of knowledge associated with the differences in attitudes and behaviors after students participate in certain course curricula. The goal of abstinence only until marriage sex education, according to advocates (Boonstra, 2009), was to raise age of first coitus, encourage students to engage in sexual activity only after marriage, and promote positive attitudes about sexual abstinence. Comprehensive sex education, however, showed all of the positive outcomes of AOUM education and added education about safer sex practices in the form of using contraceptives, improving communication skills, and reducing the number of sexual

partners (Kirby, 2008). The United States government has been providing sexual education for the last 100 years to adolescents, but these courses may not address how to be an informed consumer of information found online.

After performing a literature search, no study found assessed the relationship between students' intrinsic motivation and interest, and using media to find more information about sexuality. There was also a lack of understanding about how intrinsically motivated students feel after receiving comprehensive sexual education and AOUM sexual education. Currently, there is a growing understanding of the relationship between behaviors and different types of media, such as educational sources about sexuality versus sources that do not claim to be educational. As media become more accessible with smartphones, tablets, and other portable devices usable in private locations, it becomes more important to understand where adolescents go to find more information about sexuality. This study adds to the literature by attempting to make the connection between motivation and interest in sexual education classes and types of information sought later.

A review of research exists that examines learning in a science classroom and how students were motivated to transfer learning outside the classroom (Pugh & Bergin, 2005). Unfortunately, Pugh and Bergin (2005) discovered that techniques used to inspire motivation in the classroom might not transfer to students as teachers wish. It was important to understand these implications as well. The sex education curriculum that students received may or may not have affected the amount and type of learning outside of their sexual education classroom. Students who received sex education may be similar to the students included in Pugh and Bergin's (2005) review so there may be no

connection between curricula type and seeking sexual health information outside of school.

Because there was no found peer-reviewed literature in the United States on the effect of interest and motivation as they apply to sex education models in the United States, this domain-specific information can help inform instructors and other education professionals about how interested students learn. Students who were inherently interested showed motivation to learn outside of the classroom, sought information elsewhere, and claimed that they wanted more information than what their sex education provided. Findings from this study may also be useful for how instructors utilize seductive details, tangential details, and cognitive interest. Because sex, death, and romantic intrigue can cause interest in students more easily than other topics (Harp & Maslich, 2005), it can be helpful to instructors to understand how students' school-prompted interest about sexuality grows. Although motivation to learn about sexuality may be unique and the topic is domain-specific, this information may also inform how students learn in other domains in which they are interested.

# CHAPTER II

# REVIEW OF LITERATURE

Learning in the sex education classroom depends on many factors. The potentially most important factors are the curricula. To understand why United States schools teach the different curricula for sex education, it is also important to understand how the types of sex education came from a complicated history full of controversy and need for education. How the students in the present study received this information depended on the curriculum being taught, how the teachers delivered the information, and the students' own backgrounds. All of these factors influence how students learn about sexuality and may explain where they go for information about sexuality later.

## Sex Education Programs in the United States

The types of sex education in the United States that are used now come from a long history of traditional morality and the need to act in the face of problems. It is important to understand how sex education has developed over time. The purpose of this study was to understand the consequences of teaching of the different types of sex education. Educators can use this information to understand and analyze motivational teaching techniques in the curricula to improve teaching about human sexuality in the future.

In the United States, sex education had a rocky history. In the early 1900s, an explosion of venereal diseases (VDs) caused educators in Chicago, IL to begin teaching students about the dangers of having sex with multiple partners and to support waiting until marriage to have sex (Brandt, 1987). The Comstock Act from 1873 influenced this era in prohibiting the sending of sexual information in the mail (Heins, 2001). The original intention was to prevent dissemination of obscenity, but it also prevented the spread of sexual health information. Ultimately, sex education did not spread readily, and sex education became less popular until the First World War. After World War I, the government responded with sexuality education to discourage women from having sex with potentially irresistible soldiers on military bases. The United States government then began distributing materials nation-wide to combat sexual urges (Moran, 2000).

Soon after World War I, Margaret Sanger (1938) worked to found the American Birth Control League in 1921. In a series of court cases, her influence eventually swayed the court's decision about allowing sexual material in the mail. By 1936, Sanger overturned the the Comstock act, and dissemination of contraceptive information for physicians became legal (McCann, 1999). At about the same time, Bigelow (1916) and Gruenberg (1923) began emphasizing the teaching of sexuality throughout adolescents' curricula in public schools. Because these changes were so radical, the populace protested with outrage claiming inappropriate information in schools and shut down this method of sexual education. The scare tactics using pictures or stories of advanced cases of VDs from the era of the First World War remained, however (Moran, 2000).

World War II brought about other changes in sex education. Many soldiers were once again finding people in different ports with whom to have sex and were bringing

back VDs. This is when two events happened which would change how people viewed sexual education (Moran, 2000). The popularization of the condom in the military and the introduction of penicillin temporarily changed how people thought about VDs (Valdiserri, 1988), which made scare tactics using VDs less effective. However, the zeitgeist viewed the rise in VDs as a sign of family breakdown. Divorce rates were rising at this time, and, in response, the American Social Hygiene Act (ASHA) brought about family education. Although VDs alone did not cause change in divorce rates, family education would replace worry about VDs for some time (Hegarty, 1998).

The media after World War II, Playboy in 1953 (Fraterrigo, 2009), and the Kinsey Reports (Kinsey, Pomeroy, & Martin, 1948; Kinsey, Pomeroy, Martin, & Gebhard, 1953) showed the nation the sexual behaviors that exist and pushed the boundaries about what people considered "normal sex." Because media were changing in the 1950s, communication was easier, and the mail allowed for spread of sexual information, sex education swung like a pendulum from family education promoting the nuclear family to teaching students information that caused discomfort in some (Irvine, 2002). The 1960s brought the women's rights movement, the Vietnam War, and the Sex Information and Education Counsel for the United States (SIECUS), and Sally Williams developed age appropriate sex education called Family Life and Sex Education (FLSE) (Schulz & Williams, 1969). Civilians spoke against and supported every side of the argument, and emotions were high in communities across the nation when deciding how schools should handle teaching about sex (Irvine, 2002).

It was not until the US government acknowledged and began printing materials about the Human Immunodeficiency Virus (HIV) and Acquired Immunodeficiency

Syndrome (AIDS) in 1985 (Price, Desmond, & Kukulka, 1985), four years after the Center for Disease Control [CDC] first reported it, that sex education became a government response to AIDS (Moran, 2000). Sex education continues to resemble this model today (Jeffries, Dodge, Bandiera, & Reece, 2010). Currently, two types of curricula dominate the sex education debate. The first is abstinence only until marriage education, which promotes no sex as the only safe sex and does not include any mention of birth control. The other type is comprehensive sex education, which also promotes no sex as the safest form of sex but also includes information about birth control and family planning. Both curricula may or may not prepare adolescents for the amount and quality of sexual information available to them. Also of importance is how students learn about sex outside of the classroom based on the type of sex education they received. National requirements for teaching sex education vary depending on the location. In Colorado, comprehensive sex education is required; however, this only applies if the local schools receive grants from the state. This means that many districts are still teaching AOUM sex education to fulfill the state health requirement (SIECUS, 2013a). Because it is a state requirement in Colorado to have sex education, far fewer students do not receive sex education.

## Abstinence Only Until Marriage Sex Education

Abstinence only until marriage education rose in the late 1980s in response to the Adolescent Family Life Act (ALFA) and the rise in concerns about HIV. In 1996, the Personal Responsibility & Work Act passed, and attached to this bill was $250 million that went to AOUM education; a majority of lawmakers then considered AOUM sex education the acceptable standard. From 1997 to 2008, the federal government increased

its support of AOUM education and spent more than $1.5 billion on this type of education (Jeffries et al., 2010). Rationale for not introducing birth control as a part of this education is that using birth control contradicts the purpose of AOUM education and supports the belief that people can have sex before marriage (Hauser, 2004).

According to Denny and Young (2006), an example of an AOUM curriculum includes five weeks with 23 lessons at upper elementary and 24 lessons in both middle school and high school. Teachers all received the same training so teaching and language use were similar. No lessons in this program included information about contraceptives of any kind. Lessons did include, however, parent-child homework, tips for teachers, and information for parents. This program showed evidence of an increase in favorable attitudes about abstinence and raised the intent to remain abstinent for students who participated in the program compared to students who had no sex education at all (Denny & Young, 2006). Outcomes of AOUM sex education include positive emotions related to waiting until marriage for sexual intercourse. There is very little support for effectiveness in preventing transmission of sexually transmitted infections (STIs) or pregnancy versus other forms of sex education (i.e., condom only and comprehensive) (Duffy, Lynch, & Santinelli, 2008). Other potential outcomes include feelings of guilt for typical thoughts of sexuality, feelings of guilt for typical practices (i.e., lust towards others, masturbation), or feelings of alienation for students who have already had sex (Fine & McClelland, 2006).

A search on multiple scholarly databases of peer-reviewed articles on the effects of AOUM sex education and media consumption behaviors by adolescents provided no relevant results. However, students with AOUM sex education may receive some

information on where to find other sources for sexuality or none at all. If educators did not recommend any sources, students could use easily accessible sources such as the internet without the preparation of being informed consumers of the diversity of information that exists online.

**Comprehensive Sex Education**

Comprehensive sex education begins with the same fundamental value as abstinence only until marriage education: abstinence (Kirby, 2008). The difference between the programs is the introduction of condoms and other forms of birth control (Kirby, 2008). Some comprehensive sex education programs include choices of partners and introduce sex as a pleasurable act (Starkman & Rajani, 2002). Also included in comprehensive programs, which abstinence only until marriage programs do not include, are discussions of sexual orientation and gender identity (Braeken & Cardinal, 2008). Many comprehensive sex education programs begin in kindergarten and continue until 12$^{th}$ grade, giving age-appropriate and medically accurate lessons (Kirby, 2008).

Lindberg and Maddow-Zimet (2012) spell out the benefits of comprehensive sex education. Although both types of sex education were better than no sex education, the likelihood of adolescents using condoms on first coitus was significantly higher for those who took comprehensive sex education. Because both programs promote abstinence as the foundation of the curricula, the difference between ages of first coitus is not significantly different between the two programs (Lindberg & Maddow-Zimet, 2012).

More parents in the United States support comprehensive sex education; however, this does not reflect the programs that are in place (Bleakley, Hennessy, & Fishbein, 2006). In 2009, abstinence only until marriage programs, because they had less empirical

support, received lower funding, and comprehensive programs received more funding (Boonstra, 2009). Further support for comprehensive sex education is coming as many states, including Colorado, Massachusetts, Montana, and Texas, are beginning to replace AOUM programs with comprehensive programs as of 2013 (SIECUS, 2013b). Abstinence only until marriage programs in these states were not helping reach the intended goals of lower sexually transmitted infection and pregnancy rates (SIECUS, 2013c). Although the debate about which program to use will likely not end soon, given the history of debating between sex education programs, more empirical evidence is needed to understand the implications of each program and how attitudes and behaviors differ. This study attempted to understand differences in seeking different learning materials related to the curricula students received.

Because the federal government funds both types of sex education, individuals in the state government and, locally, students may have differing views of sexuality due to their different sex education backgrounds. Increasing the amount of research about how students learn about sex outside of school can inform future curricula. This study assessed the types of education that students received by finding which specific lessons the students received and by finding the school district that students attended. This information about curriculum can help researchers and instructors understand which types of education students are actually receiving and the level of interest and intrinsic motivation that students are showing to find learning materials outside of class. Larger replications of this study could also add to the literature and may support findings that can influence and improve current curricula.

## Individual Interest and Intrinsic Motivation

Interest and motivation exist in many forms for students who are learning. School-prompted interest is a combination of both the interest a student feels when he or she is learning in class and then is motivated to continue learning outside of class (Wang et al., 2014). If these students feel inspired by classroom lectures, they may develop different learning goals, they may feel driven to accomplish goals on their own, and, depending on the environment, they may not feel that the lesson or environment is conducive to their learning. This study drew from motivation literature to drive a study of how differences in motivation affected how students feel about the curricula received and if there is a relationship with learning outside of the classroom.

Motivation is a construct of goal orientation in learning and is the quality of the pursuance of that goal (Brophy, 2010). A motivated student shows persistence in gaining knowledge in a certain subject area in which he or she is interested. One sees motivation when the momentum of the student prevents him or her from wanting to change tasks or in situations where he or she is self-regulated (Rohrkemper & Corno, 1988).

Motivational theories exist to explain why students learn and how students learn effectively. If an instructor is teaching in the most effective way possible, he or she should be pushing students to discover the value in the education they are receiving (Brophy, 2010). If students find the value, understand the value, can regulate their own learning, and follow up on their own, the instructor will have a less difficult time helping them understand the material and an easier time directing learning of the material (Deci & Ryan, 2008).

Students who are showing self-regulated learning can learn more efficiently, and self-regulated learning should be the goal of instructors (Rohrkemper & Corno, 1988). Because motivating a student can sometimes be a very difficult task for instructors, many motivational techniques exist which help groups of students or individual students become motivated. Over time, many motivation techniques have evolved, although some teaching perspectives are more effective than others (Bredo, 2009). A combination of motivational theories and adapting these theories to an individual student typically helps a student be more successful (Bredo, 2009).

Different types of motivation exist that may explain how students learn in the classroom. This study looked at interest and intrinsic motivation. In order to achieve the highest level of learning for the student, it was important to review these constructs. A specific course curriculum may not be enough to motivate students to learn; a teacher can use tools such as creating goals to help motivate his or her students. Creating goals or using instructional tools may also help students feel intrinsically motivated or motivated enough to perform learning tasks on their own. Students who feel alienated may suffer from lack of motivation as well so it is important to include these students.

The goal of this study was to understand differences in curricula by assessing students' motivation in the classroom. This study of motivation may show that students are looking at different sources of information outside of the classroom after they have received formal instruction of different kinds. In order for students to be motivated to perform research outside of the classroom, first, interest about the subject should be inspired.

**Individual Interest**

Individual interest in the classroom is content-specific intrinsically focused attention to what an instructor is trying to teach, an activity, or an environmental influence (Schiefele, 1991). Instructors, in some cases, recognize interest by seeing that a student is attentive and may be correct in believing that learning is occurring (Abrantes, Seabra, & Lages, 2007). Researchers believe that interest is the first step to deeper learning (Schraw, Flowerday, & Lehman, 2001), but it is important to understand the different theories regarding interest to apply them correctly.

According to Harp and Mayer (1997), there are two main types of interest. Details tangential to a presented topic inspire emotional interest, and explanative summaries inspire cognitive interest. Each type of interest can apply in any domain of learning, and, according to research by these authors, when an instructor uses techniques that inspire cognitive interest before emotional interest the student is likely to retain more of the material the instructor has taught. For example, a lesson about sexuality is best for students when the lesson is focused, inspiring cognitive interest. If the instructor tells a story that is tangential or even unrelated to the topic, students may lose focus and not learn other parts of the lesson due to emotional interest.

Another model of interest is the four-phase model of interest (Hidi & Renninger, 2006). Phase 1 is triggered situation interest. Triggered situational interest uses environmental or situational factors. These factors cause a student to show that he or she is paying attention (i.e., an instructor raps his or her meter stick against a desk to awaken students or uses an engaging story about the topic). Phase 2 is maintained situational interest. A student shows maintained situational interest when he or she is working on a

project or assignment for an extended period. Maintained situational interest is similar to cognitive interest, a student is thinking about his or her current project. Phase 3 is emerging situational interest. Students may begin to think about or research a topic outside of class and possibly even return to the subject and begin to enjoy it. Phase 4 is well-developed individual interest, and a personal investment and deeper learning exist (Renninger, Hidi, & Krapp, 1992). In this form of interest, students want to become experts in the topic that they learned about in class. Another characteristic of students with well-developed individual interest is that they spend time away from school developing knowledge on this topic much as they would on a hobby. In any domain, this model can describe what catches a student's attention and how the topic holds his or her attention (Hidi & Renninger, 2006).

If these later phases develop for adolescents after they receive their lessons, as suggested by researchers who study interest and motivation (Renninger, Hidi, & Krapp, 1992; Hidi & Renninger, 2006), the adolescents should be motivated to spend time outside of class thinking about sexuality, doing extra research on their own, or seeking the answers to questions from others they trust. These self-driven activities are very important in the learning process and researchers describe participating in these activities as intrinsic motivation.

Limited research exists about how interest applies to the sex education classroom and sex education is a unique topic that may create more interest than other domains. How educators teach the curriculum may also undermine how students learn and develop motivation because the topic is so interesting. The design of this study was to understand the effects of interest in sex education by measuring students' motivation to seek

information about sexuality outside of the classroom. Mitchell (1993) measured individual interest using an adapted situational interest scale.

**Intrinsic Motivation**

Intrinsic motivation is similar to individual interest. Studies show that intrinsic motivation, a source of motivation described as coming from within (Brophy, 2010), is a more powerful motivational tool than extrinsic motivation, an external reward for work (Ryan & Deci, 2000b). A positive affective response, such as enjoyment, to certain material can lead to intrinsic motivation (Linnenbrink & Pintrich, 2002). If a student feels situational-interest, it causes positive affective responses that support an optimal level of motivation (Ryan & Deci, 2000b). Signs of positive affective responses include the students indicating that they are having fun or are enjoying the project they are working on. These positive affective responses can then lead to intrinsic motivation. Intrinsic motivation supports learning about a specific topic in the future. There are several ways to support intrinsic motivation through positive affective response to achieve the highest likelihood of learning outside of class (Blumenfeld et al., 1991; Eisenberger, Pierce, & Cameron, 1999; Glassman, Glassman, Champagne, & Zugelder, 2010).

One way to support positive affective response is with Project Based Learning (PBL), which is a teaching method that uses authentic problems, problems that the students understand and can relate, in which students are to investigate the solutions (Blumenfeld et al., 1991). PBL has certain qualities that help a student feel intrinsically motivated to learn the material. The authenticity of projects, how meaningful a project is to a student, and how much time students spend on projects help foster feelings of

intrinsic motivation. Once a student finishes a project, he or she is likely to communicate his or her learning more easily; the student may ask new questions related to the project, and he or she has a final product that genuinely answers his or her questions (Blumenfeld et al., 1991). In sex education, PBL could support motivation to learn outside of class and could drive students to seek educational information about human sexuality.

Self-regulated learning is a sign of intrinsic motivation, and some ways to help foster self-regulation include letting students choose between options of tasks that answer important learning questions and helping students make choices based on previous learning and experiences. Instructors can use exercises and activities that help them create intrinsic motivation in students. These activities can include manipulatives, tools for hands on learning; simulations, which may help a learner personally experience a lesson; and role-play, which forces a learner to vocalize his or her lesson and forces a learner to act out and understand the perspectives of others. It is also important to recognize students' experiences and their relationships to important material. Additionally, students can create their own lessons, which are more relevant to their lives in their own situations that supported self-regulated learning, even outside of class (Paris & Gespass, 2001). Students who choose the topic they are studying in sex education could help answer questions about sexuality that specific curricula did not address.

Students can also begin to feel intrinsically motivated for a task when they participate in tasks that legitimize their own backgrounds, intelligence, and hard work. Sex education curricula may not include all students, for example, those who were victims of abuse or those who are already sexually active. PBL, group tasks, or methods that involves students' presenting or performing their work likely legitimize students'

own backgrounds and, hopefully, students themselves. Unfortunately, one of the limitations of many of these techniques to motivate students is time (Marx, Blumenfeld, Krajcik, & Soloway, 1997). There is only a limited amount of time during a day or school year for a teacher to have enough time to give students long-term projects and to individualize lessons to each student. Because of this lack of time, fostering intrinsic motivation is difficult and students may not want to continue to learn outside of the classroom. In a short sex education class, PBL, and other exercises may not be practical given time restraints so teachers may not be fostering good individual interest or intrinsic motivation.

Some researchers believe that using extrinsic motivators can be effective (Eisenberger, Pierce, & Cameron, 1999). In the United States, behavioral techniques are common in that workers receive rewards (i.e., payment) for their services (Glassman, Glassman, Champagne, & Zugelder, 2010). At work, salaried employees may receive bonuses if they meet certain standards by the end of an assigned period. At school, behavioral techniques to increase extrinsic motivation include early recess, days off from class work, and trips to reward students for their hard work. Extrinsic motivators for students can also include exam scores, semester grades, and standardized test scores (Lepper & Henderlong, 2000). Grades as rewards can be effective when paired with verbal rewards such as constructive criticisms and praise when the students believe they accomplished learning tasks (Ryan & Deci, 2000a). However, if a student consistently earns poor grades on tasks that he or she performed well, after several of these grades, a feeling of learned helplessness can occur (Ames, 1992). Learned helplessness can lead to

mastery avoid or performance avoid orientations where the student cease to try due to fear of failure (Harackiewicz, Barron, Pintrich, Elliot, & Thrash, 2002).

Another limitation to using extrinsic motivators is the potential for over-rewarding students for their efforts. Early research by Lepper, Greene, and Nisbett (1973) showed that students who are over-justified for their efforts show less intrinsic motivation in their target activity. However, current research shows that although students can still be over-justified if the extrinsic motivators are not appropriate (e.g., rewards for simply participating in a task); over-justification may not undermine intrinsic motivation in the classroom (Lepper & Henderlong, 2000).

The type of curriculum and instruction that students receive can affect how they learn. Instructional tools that foster interest and motivation may or may not exist in different curricula so it is important to understand that not only is there a difference in overall lesson messages, but also differences in lesson plans may exist which help a student become more motivated. Self-regulated learning, using manipulatives in class, or lessons including role-play should be important when evaluating curricula students receive. Fostering intrinsic motivation should help students find information on their own outside of the classroom and how motivation is developed may play a role in the quality of learning on their own (Miller, Heafner, & Massey (2009).

Because the different types of curricula use different tools to educate adolescents about sexuality, adolescents may show different methods of learning when not in the classroom. Although the literature informs researchers of common places that students find sex information outside of the classroom, information about how different types of sex education impacts students' outside learning is difficult to find and may be outdated.

One focus of this study was to understand how the different curricula influence if and where students seek additional learning materials outside of their sex education in the classroom. Students who are more intrinsically motivated to research sex education outside of the classroom should be seeking materials more often and possibly in more places. An adapted scale from Wang, Chung, Park, McLaughlin, and Fulk (2012a) measured intrinsic motivation.

## School-Prompted Interest

Many adolescents are already looking to sources of information about sexuality. Where they look may have a relationship with the type of sex education they received in school. Attempts to find studies of this relationship in the domain of sex education in a literature search were unsuccessful. The implications involved with certain sources exist and if there is a relationship between sources and curricula used, educators can use empirically supported curricula. Relationships between motivation and interest in other domains and their conclusions drove the methods in this study.

Sometimes, when students are interested and reach a level of intrinsic motivation, they think about information outside of class, they come up with their own new questions, and they try to answer these questions. The sources that exist for answering their myriad of questions are many, and some sources are readily available. It is up to the students to decide where they feel most comfortable looking up information and whether the sources they are accessing are trustworthy.

Although many trustworthy sources of information exist, students who begin to do their own research can be poor judges of the effectiveness of their methods of learning (Gurung, 2003). Students often choose strategies based on perceived efficiency rather

than perceived effectiveness; for example, they choose practice quizzes and tests when studying for a test. Students choose podcasts (Daniel & Woody, 2010) to learn more efficiently despite poor outcomes, and they choose to study from many other technological sources (Heaton-Shrestha, May, & Burke, 2009). As media change over time, it will be important to understand which sources adolescents use to learn about human sexuality.

When students choose strategies for answering their questions from school, they often choose strategies that do not work or are counter-productive. Using resources can then be problematic for adolescents trying to learn more about sexuality. Essentially, students learn material equally well between paper and electronic texts, but when using these e-texts, students read more slowly and can become distracted (Woody, Daniel, & Stewart, 2011). These sources provide distractions (e.g., easy access to games, email, other information on internet browsers, etc.) when students attempt to take notes or do academic web searches. Unfortunately, many sexuality websites exist that contain many distractions for adolescents who may be trying to find information about sexuality. Some distractions were erotic materials (Hust, Brown, & L'Engle, 2008), which do not claim to provide sexual health information.

Understanding which sources of information from outside of the classroom that students use was another aim of this study. With this information, instructors can better prepare students to utilize these sources and the students can become informed consumers of information. This study examined sources of information that adolescents reported using, whether it was educational health information or information gleaned from non-educational erotic materials.

Pugh and Bergin (2005) conducted a study of school-prompted interest in the science classroom and discovered that techniques used to inspire students did not transfer to outside learning as teachers wished. Similar research is lacking in sex education. In this study, an intrinsic motivation scale measured motivation reported by students. This relationship of motivation to learn compared the types of learning materials adolescents used and the frequency at which they used these materials. Students who frequently accessed many different types of learning materials may be those with the most motivation for sex education. Sex education curricula may show a relationship with students being motivated and may create school-prompted interest; however, a dearth of literature on this effect leads to a lack of understanding of why students use their unique informational sources.

## How Motivational Theories Relate to Sex Education

Human sexuality education is unique from the teacher's perspective because it is information in which students are inherently interested. The introduction of seductive details is significant because any time that an instructor takes time out of the day to talk about sex, students become interested and indeed may be distracted by the information (Harp & Maslich, 2005). They may even be so distracted by the information that other lessons taught later may not be as effective because they are still thinking about the sexuality lesson.

Students who develop emerging situational interest or well-developed individual interest may be more motivated to spend time outside of class researching what they learned in class (Hidi & Renninger, 2006). Depending on resources available (e.g., teachers, parents, friends, the internet, television [TV], movies, magazines, books, etc.)

students may not receive factual information. The internet has a variety of sources, some of which are distracting and non-educational. Because the internet may be distracting to learners (Borzekowski, 2006), motivation without proper direction could lead to examination of illicit material for facts about reproductive health.

Although some instructors clearly understand why sexual abstinence is important for all students, some students may not realize that refraining from having sex with multiple partners is important for their personal health. For the instructor, understanding the curriculum and teaching it with as little bias as possible is a way to begin to include all students. However, it is difficult to motivate students using a goal such as sexual abstinence when students have already begun having sex. Students can potentially feel alienated if they do not understand how material relates to their own lives (Thorkildsen, 1988). Teaching about condoms to students whose background prohibits the use of condoms may cause an unexpected negative affect (Goodnow, 1996). In order to prevent this negative affect, all students should gain as much knowledge as possible so they are ready with well-organized information when they have to make decisions involving high-risk behaviors (Luker, 2006).

## Sexual Education and Learning Outside of the Classroom

When an instructor presents an effective sex education curriculum, students may then decide that the lessons relate to them and that they should do the best they can to learn the information. Whether a student is seeking mastery of some of the knowledge of human sexuality or just attempting to get through the class to achieve the highest grades, it is important to consider the implications of his or her fear of failure. Mastery avoidance and performance avoidance in human sexuality could cause students to be

unwilling to participate in discussions or ask questions in class. However, if he or she still wishes to master the subject and does not fear failure in learning, he or she can find information away from school by talking to parents, visiting websites, or using many other available sources. Many adolescents who try to learn about sex find that asking doctors, teachers, parents, or friends is too embarrassing, and they seek sources of information that are more private. This search may lead them to TV, movies, books, or the internet (Boies, Knudson, & Young, 2004; Escobar-Chaves et al., 2005). In all of these media, information is not only plentiful, but much of it may also lead to inaccurate beliefs about human sexuality (Bleakley, Hennessy, Fishbein, Coles, & Jordan, 2009; Brown, Halpern, & L'Engle, 2006; Chia & Gunther, 2006; Manning, 2006).

In order to improve a sexual education course, just as with any other course, instructors can use different motivational techniques such as PBL, group work, or students can choose topics in which they are interested. When students feel motivated and accomplished because of learning together, they may walk away with better communication skills, they may know more about where to find quality information, and they may actually practice behaviors outside of class that the instructor was teaching (Blumenfeld et al., 1991).

Because there are different versions of curricula, motivational theories may differ. Encouraging an adolescent to learn health information outside of school, with proper direction, may be the goal in the curriculum. Limiting the amount of information about how and where to find more information about sexual health may lead to students not looking for information or finding information in non-educational sources. These sources may have unintended consequences that may lead to dissemination of misinformation or

high-risk sexual behaviors. It will be important for educators to take into account the many different types of sources as they plan future curricula.

## Sources of Sexual Information

Adolescents look for information regularly. They learn about the world and take in as much information as possible. They are trying to learn about sexuality and have been using different types of media for that purpose for hundreds of years (Brown & L'Engle, 2009). If an adolescent were to go online today with a question about sexuality, the number of website "hits" is staggering; when typing the words "sexual health" in Bing, Microsoft's search engine yielded a very large 116,000,000 and Google search showed a gargantuan 533,000,000 related web sites in March of 2014. Research has shown that the amount has also been very large in the past (Kanuga & Rosenfeld, 2004), but as the internet matures year by year, the number of websites grows.

Current research shows that adolescents who have access to the internet can find information at any time (Bleakley et al., 2009; Boies, Knudson, & Young, 2004; Borzekowski, 2006). Students can also find information on sexuality in a multitude of other places, some more traditional than the internet. Other media sources include books, magazines (Ménard, & Kleinplatz, 2008), television (TV) (Hust et al., 2008), movies (Callister, Stern, Coyne, Robinson, & Bennion, 2011), and radio (Skinner, Biscope, Poland, & Goldberg, 2003).

When adolescents look for information outside of the sex education classroom, however, some studies show that the bulk of information commonly comes from friends, teachers, parents, and media (Bleakley et al., 2009; Boies et al., 2004; Brown & L'Engle, 2009; Jones & Biddlecom, 2011; Manning, 2006). Also available are doctors'

appointments. Even though these are highly recommended in the literature, adolescents typically do not utilize this resource for various reasons including lack of anonymity and concerns about confidentiality related to parents (Hust et al, 2008). Depending on what kinds of questions an adolescent has, different sources may seem more appropriate or more easily accessed than others. Which sources students use may be constantly changing and with the ease of access to the internet with a multitude of devices, younger and younger audiences may be accessing information about sexuality without direction.

**Family, Peers, and Teachers**

More traditionally, family and friends have been the support groups for children and adolescents with questions about sex. More than two thirds of adolescents have gone through having a "sex talk" with parents or caretakers at least once (Martinez, Abma, & Copen, 2010). Research shows that when the sex talk happens, adolescents are typically more comfortable talking about sex to their mothers as opposed to other caregivers. Different members of different families may even give different versions of sexual facts or talks. Mothers, for example, are likely to spread the message that their child is likely to get a sexually transmitted infection if the child has sex (Bleakley et al., 2009). Cousins are similar to friends and are more likely to impart positive attitudes about sex, such as feeling positively about oneself and improving relationships (Bleakley et al., 2009).

Peers' thoughts and behaviors can influence an adolescent's view of sexuality; the adolescent is more likely to endorse the same perceived thoughts and behaviors as his or her peers (Chia & Gunther, 2006). It does not matter whether the peers actually have these attitudes or behaviors. Adolescents are more likely to overestimate peer sexual permissiveness (Chia & Gunther, 2006). Because earlier-maturing adolescents may not

have friends to rely on for sexual information, they may lean toward learning from other media sources (Brown, Halpern, & L'Engle, 2005).

Several adolescents list teachers as sources of sexual information. Bleakley et al. (2009), however, found no association between using teachers as sources of information and the adolescents' beliefs about sex. Because media can be influential for students, schools could have classroom assignments that include researching sexual health topics and train students how to be discerning consumers of information on the internet (Jones & Biddlecom, 2011).

**Internet**

Using the internet as a source of information about sexuality and a source of recreational sexual activity dates back to the 1980s (Griffin-Shelley, 2003). This presents a problem in the research, however, as the internet has changed substantially in the past 30 years (McMillan & Morrison, 2006). Up to date information in the literature of what exists on the internet is both difficult to obtain, and any published research may be quickly outdated (Borzekowski, 2006). Nevertheless, it is important to understand the importance of the internet because it can be a resource for all information (Daneback, Månsson, Ross, & Markham, 2012). Combined with the ease of access and privacy that comes with using a personal computer (PC) (Skinner et al., 2003; Suzuki & Calzo, 2004), tablet PC, or smart phone, adolescents with internet access can ask any question at any time and have millions of related pages waiting with responses regardless of whether these answers are correct or not (Levine, 2011).

Researchers (e.g., Kanuga & Rosenfeld, 2004) list several recommended websites for students who want to learn more about healthy sexuality. These websites, however,

are sometimes not included in sex education classes because these sex education curricula may not include using media as a learning tool (Strasburger, Jordan, & Donnerstein, 2010). On many of these recommended pages, there are chat rooms and web boards where anyone can post questions and have their questions seen by a professional in the field of sexuality and then answered appropriately with the best information possible (Bleakely, 2009). Sometimes, however, even high quality informational websites do not have someone posting who is a medical professional, so information may not be medically accurate (Hust et al., 2008).

Searching for answers to questions with a common search engine, such as Google, Bing, or Yahoo, one typically finds forums with similar questions answered by anyone with a username. People may perceive answers with the most votes as the best answers, but these answers may not be expert opinions, and there are no standards beyond the "most popular response" on these host websites (Jones & Biddlecom, 2011). Also commonly found among top hits on any given search is a relevant article from Wikipedia. Wikipedia may or may not have better standards when it comes to sharing expert opinion, and the Wikipedia staff ask that any claims should have references. Yet anyone may post and edit Wikipedia at any time, which can potentially be problematic for students wanting to learn about their health (Laurent & Vickers, 2009).

Smart phones and tablet PCs have grown tremendously in popularity and now contain many optional applications that give sexual advice, positions, and facts. Peer-review of information provided by these mobile applications is lacking and researchers recommend checking information as mobile devices become more popular (Levine,

2011) anyone with a proper device and an internet connection can access a multitude of free or cheap sources of related information.

Social media have also exploded as smaller devices have become more powerful and easier to use. With the right equipment, someone is able to post or share original ideas, pictures, or videos with any one of these devices. Anyone with these devices can disseminate original sexual information, erotic pictures, or videos to a friend, loved one, or the entire internet (Lenhart, 2009). As many previous studies have noted, there is a wealth of information available on the internet, and, depending on how this information is used, it could support healthy behaviors by allowing access to sexual health information (Skinner et al., 2003). The internet could also be a sexual super peer, a source for adolescents to learn about behaviors by other adolescents or adults, where they may begin to believe that high-risk sexual behaviors are more common than they are (Brown et al., 2005; Kanuga & Rosenfeld, 2004). More information about how students learn about sex on the internet can help inform the current literature.

### Television, Movies, Magazines, Books, Etcetera

Television has acted as a source of information for adolescents for nearly three quarters of a century. Elvis gyrated his hips, which showed a nation of adolescents that sexuality through movement was becoming tolerated (Wise, 1984) and that more media examples of sexuality would follow, including the Bradys, the first TV couple to share a bed. Television shows began showing kissing, and, gradually over time, moved toward hinting at more intense sexual encounters. A recent study of the amount of sex on TV has shown that there may be more sexual situations in adolescent-oriented TV than adult-oriented TV (Hust et al., 2008). Sexual promiscuity on television is more common than it

may actually be in an adolescent's life, and depicted adolescents are typically two or three years older than those who are their target audience (Escobar-Chaves et al., 2005). Because television shows depict older adolescents, younger adolescents may choose to participate in similar sexual promiscuity in their own lives.

Movies in the past three decades have been a source of sexuality information for adolescents, with references to implied touching or intercourse. Unfortunately the messages conveyed in movies is lacking in safe sex messages (Callister et al., 2011). The amount and the methods directors portray sexuality in movies have been consistent for the past 30 years (Callister et al., 2011).

Magazines give information about sex facts, but do not necessarily give useful health information. Ménard and Kleinplatz (2008) have found that magazine articles give tips on how to perform in a sexual encounter. Although a magazine might give the advice that men should masturbate more, the advice is not to promote masturbation as a healthy sexual release or a safe sex option between couples; it teaches the reader that masturbating more will help increase stamina in sexual situations. This is one example of typical sexuality information presented by popular magazines. Magazines also use sexuality in advertising to entice readers into buying products (Ménard, & Kleinplatz, 2008).

Books, like television and movies, may have sexuality in them. Aside from romance novels and books with sex scenes, health information in educational books can be a benefit for a curious adolescent (McDermott, 2011). Books aimed at adolescents contain explanative information about sexuality that adolescents can read in private.

Several sexual health books are also age-appropriate. Children can learn about sexuality when questions arise or when the child is ready (Sharif, Wills, & Sargent, 2010).

This list of media sources is certainly not all-inclusive, and media in the future may change. It will be important to keep up to date on media as it changes so as information transfers from one person to another; experts can maintain high standards on this information.

Benefits exist for certain types of media over others for many adolescents. It is important for some students that when they ask questions about sex they can ask anonymously or find information on their own without the help of others. Using media sources in private, however, may come with certain downfalls. Children use media away from parents. When they do not possess the skills to be consumers of sexual media, presented information may be inappropriate and cause problems with understanding. Because the media do not claim to be a part of health education, this lack of understanding or inappropriately timed information is especially likely (Hust et al., 2008). All of these sources listed (i.e., internet, television, magazines, and books) have information that students can access at any time in private as long as they have the resources available to gain access.

Adolescents use television, movies, magazines, books, and other sources to find supplemental information about sexuality. The media are constantly changing and this study sought to understand which sources adolescents used when they were trying to learn more information about sexuality. An understanding of how these sources relate to behaviors exist, but researchers do not yet know how sex education prepares adolescents for the media. If the results of this study show that any media source stands out as more

popular than the rest, researchers and instructors may be able to better prepare students for the use of that source.

## Effect of Media on Attitudes and Behaviors

Viewing of sexuality in media, such as television, movies, and internet, correlates with a higher rate of high-risk behaviors (Boies et al., 2004; Braun-Courville & Rojas, 2009; Kanuga & Rosenfeld, 2004; Manning, 2006). High-risk sexual behaviors include such behaviors as multiple partners, substance abuse during sexual encounters, anal sex, and unprotected sex.

For girls who look to media for information because they are maturing more quickly than their peers are, the media provide many sources of information. A variety of sources, including online sources, provides sexuality information that may give these girls a false sense of how their peers are behaving, and they may be more likely to participate in high-risk sexual behaviors. This interest in learning also increases their exposure to sexual content (Brown et al., 2005). Boys have a higher exposure rate than girls to internet pornography (Braun-Courville & Rojas, 2009; Lo & Wei, 2010). This exposure may lead to more high-risk behaviors and beliefs about sexual permissiveness (Braun-Courville & Rojas, 2009; Lo & Wei, 2010).

According to Manning (2006), adolescents with frequent exposure to erotica, or sexually explicit material with no educational value, may show many differences from their peers. Over time, adolescents who view these sources with no educational value may find normalization of reactions to offensive material and tolerance toward sexually explicit material requiring more novel or bizarre material. Due to the nature of the types of sexuality found online, adolescents may begin to have misperceptions of sexual

activity in the general populace, overestimation of less common sexual practices, or beliefs that promiscuity is a normal state of interaction (Manning, 2006). They may perceive sexual inactivity as constituting a health risk, women may begin to have negative body image, women and men may view raising children as unattractive, and both men and women may increase risks of such sexual compulsions as addictions or expose themselves to high-risk sexual behavior (Manning, 2006).

Educators should address all of these outcomes in sexual education curricula. Consideration of the types of sources should prepare students for a multitude of information waiting for them when they leave the classroom. The current consensus in a literature review supports the idea that peers, parents, and teachers are still the most common sources of information for information about sexuality (Bleakley et al., 2009; Brown, Halpern, & L'Engle, 2006; Chia & Gunther, 2006). With the advancing in popularity of the internet and lack of research on student learning outside of class, it is important to understand if and how students' strategies have changed, particularly in the domain of sex education.

## The Need for More Sex Education

Adolescents show interest in sexuality outside the classroom. They are performing searches on search engines and asking questions on relevant web sites. Questions which are often asked include "I feel awkward hugging and kissing my girlfriend with everyone around," "I have a hooked penis, do you know how to fix this?!?! PLEASE HELP ME," and "After having an orgasm is it normal to have white discharge looking stuff?" (Suzuki & Calzo, 2004, p. 690). Websites are places for

adolescents to visit and to ask questions about sexuality in private without having to deal with the embarrassment of someone finding out or looking over their shoulder.

Along with educational queries and responses, adolescents may also see unwanted pornography (Jones & Biddlecom, 2011). With the intent of asking a question about sexual health, an adolescent can stumble upon a sex chat room that is there for recreational instead of educational use (Kanuga & Rosenfeld, 2004). Articles on recreational uses of sexuality on the internet exist from as early as the 1980s and have comprised a very large portion of the use for the internet (Griffin-Shelley, 2003). Manning (2006) found that the internet and television were the most common sources of pornography and that 83% of youth watched pornography at home at least once.

Sex education curricula addresses many concerns about sexuality, but sexuality in media, especially on the internet, has been changing rapidly. Adding information about media sources to current sex education standards may help students find safe places to learn sexual health information. A thorough review of sources of sex information used should be in the current sex education literature. Adolescent use of sources of sexual information in this study may be able to help inform sexual health educators of positive and negative sources.

**High-Risk Behaviors and Protection**

When a student is motivated to learn more about sex outside of school, instructors and researchers should know where adolescents go for sexual information. These different sources may lead to or reflect different sexual behaviors. High-risk sexual behaviors and lack of condom use can change adolescents' lives. Adolescents may have to visit a doctor to cure an infection, they may become pregnant before they are ready,

and some viruses never go away and could end in death. Health information sources could help someone learn more about condoms and other contraceptive methods and could help them make informed choices about their own sexuality, which could reduce incidence of sexually transmitted infections and pregnancy.

The type of motivation adolescents feel could relate to where they look to find new information. A student who is interested in learning about safe sexuality may go to different sources to learn about contraceptive methods, safe sex practices, or how to talk about sexuality. If the adolescent is more interested in the recreational uses of sexual media, he or she may find more atypical sexual practices using erotic materials such as pornographic images, videos, or stories. Depending on the source of information, an adolescent may be more or less likely to use safe sex practices based on previous research (Braun-Courville & Rojas, 2009; Hust et al., 2008; Jones & Biddlecom, 2011; Kanuga & Rosenfeld, 2004). Because there is a gap in the current literature about the types of sources used, this study assessed which sources adolescents used.

## Research Questions

Q 1 What sources of information do students use to seek information about human sexuality outside of class?

Q 2 Are different sex education curricula associated with differences in school-prompted interest; that is, the amount of sexuality sources sought by students outside of class?

Q 2A Are different sex education curricula associated with differences in the amount of *educational* sexuality sources sought by students outside of class?

Q 2B Are different sex education curricula associated with differences in the amount of *erotic* sexuality sources sought by students outside of class?

Q 3 Are comprehensive sex education curricula more effective than Abstinence Only Until Marriage Sex education at creating individual interest and intrinsic motivation?

Q 4 Do individual interest and intrinsic motivation mediate the relationship between sex education curriculum and school-prompted interest?

Interesting trends in which type of sex education participants received, where students found information about sexuality, and school-prompted interest were of interest. In the state of Colorado, it is currently a legal requirement that students from this state receive a sex education curriculum. Students who did not receive sex education may have various reasons for not receiving it, including opting out by their parents. Because sex education is a legal requirement, there would not be enough students who received no sex education to fulfill the assumptions of appropriate statistical methods for Q3 and Q4. The no sex education category was not a part of the statistical tests for Q3 and Q4. Only the comprehensive sex education and AOUM sex education curricula were the predictor variables in these statistical tests. These relationships will be especially useful for educators planning their curriculum.

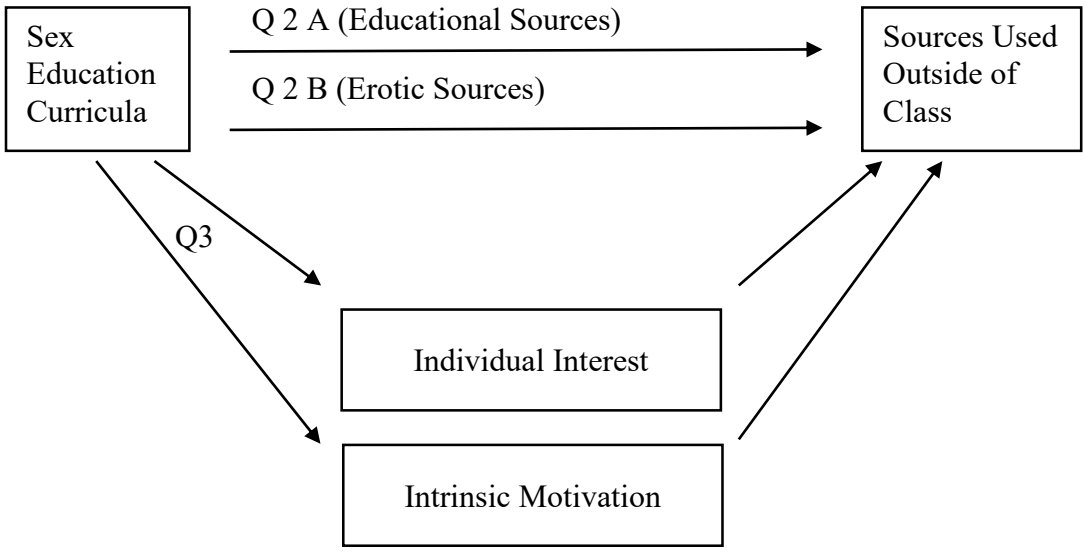


*Figure 1*. Model for all research questions. Overall model represents factors analyzed for Q 4. Factors analyzed for Q 2 A, Q 2 B, and Q 3 in model.

Due to lack of literature on relationships between motivation and interest in sex education in school, statistical testing used null hypotheses. Literature on these relationships in other domains was not strong enough to infer that students would show similar amounts of interest and motivation.

# CHAPTER III

# METHOD

## Participants

Participants included students at a western university who elected to participate in research or who participated to fulfill a course requirement. Students elected to participate in these projects from a research participant pool set up for Principles of psychology classes. Students who were involved in other classes in the Psychology department participated in their classroom settings and participants received rewards by their professors as their professors saw fit. Other credit options existed for all students who did not want to participate in research. All participants were 18 or older. No participants were part of a vulnerable population. The institutional review board at this western university approved this study and the ethical treatment of human participants followed the guidelines of the American Psychological Association [APA] (2002).

The data collection goal of this study was to include 300 participants from the university. This number was selected based on the number of participants needed for detection of a medium effect size to raise statistical power based on an a priori effect size, calculated by G*Power Version 3.1.3 (2010). Calculations were based on $\alpha = .05$, Power = .95, and 3 sex educational curriculum groups (comprehensive sex education, abstinence only until marriage sex education, and no sex education) for the one-way analysis of

variance (ANOVA) calculation. Previous effect sizes for the study (Wang et al, 2014) that utilized the motivation to learn scale in science classrooms found interest effect sizes ranging from Cohen's $d = 0.09$ to $d = 0.32$, small to medium effect sizes (Cohen, 1969). Confidence intervals for Cohen's $d$ were calculated using asymptotic estimates of standard errors (Nakagawa & Cuthill, 2007), similar calculations were performed in this study. Small or medium effect sizes were expected.

The participant sample included 348 students from a western university. Participants' ethnicities similarly represented that of the university's total enrollment, which reported that 22 percent of students were ethnic minority status (Institutuional Reporting and Analysis Services, 2014). The Principles of Psychology courses typically attracted freshman-level students, and ages reflected that level with 86.2% of participants between the ages of 19 and 21, 248 (71%). Student data represented sex education in the state of Colorado as most undergraduate students at the university were residents of the state (87-89%); however, the university reports that total enrolled students came from all 50 states and 40 countries (Institutional Reporting and Analysis Services, 2014).

## Materials

Along with the demographics, this study assessed previous sex education experience, motivation, where participants sought educational information about sexual health outside of the classroom, and where participants sought non-educational information outside the classroom.

### Previous Sex Education

To measure previous sex education, 17 questions were adapted from Walcott, Chenneville, and Tarquini (2011) to query whether participants learned about specific

topics in sexual education classes (see Appendix C). These items separated individuals into curriculum type. Questions were in the form of "Did you learn about these topics in sex education," and participants selected yes or no. Example learning topics included the reproductive system, abstinence before marriage, STIs, contraceptive methods, having safe sex, how to put on a condom, how to say no to sex, how to communicate with friends about sex, how to communicate with parents about sex, educational sexuality websites, and variation in sexuality in society. Other questions are located in Appendix C. The final question was a frequency question: "How often did you learn about sex?" This question had responses from 1 (*Never*) to 5 (*yearly*). The previous sex education scale showed good reliability ($\alpha = .81$).

Participant categorization came from questions about their sex education curricula. They indicated the material they learned from their sex education. Based on the material, they filtered into three different categories. The questionnaire asked if they learned about specific topics during their course. Comprehensive sex education questions indicated if students learned about contraceptives, having safe sex, or effectiveness rates of condoms. Abstinence only until marriage sex education questions indicated if students learned about abstaining from sex until marriage and STIs. Students' responses to these questions about their historical sexual education determined group membership. Each of these three questions was scored 1 (yes) or 0 (no). Students who scored one on any of the abstinence only until marriage only questions filled the AOUM category. Students who scored zero on the questions for comprehensive sex education remained in the AOUM sex education category ($n = 100$, 29.1%). Students who scored one on any of the AOUM sex education questions, and additionally scored one, two, or three on any of the

comprehensive sex education questions filled the comprehensive sex education category (n = 225, 65.4%). If a participant scored one or higher on the contraceptives, having safe sex, or effectiveness rates of condoms questions combined (they could score one, two, or three depending on if they learned about one or all three), the participant received comprehensive sex education. Anyone who received information about any of these three topics did not receive a strictly AOUM sex education curriculum.

Other participants reported that they had not received sex education by skipping the individual interest and intrinsic motivation sections of the questionnaire. No participants who skipped this section continued filling out the historical sex education section. These participants skipped these sections if they had not received sex education and filled the no sex education category (n = 19, 5.5%). Analysis of these data separated participants into the curricula groups of comprehensive sex education, AOUM sex education, and no sex education. These data are located in the analyses section.

## Individual Interest and Intrinsic Motivation

**Individual interest.** The scale used to measure interest was originally by Hulleman, Godes, Hendricks, and Harachiewicz (2010). The questions needed changing to past tense so participants who already had sex education could answer appropriately (see Appendix A). The first scale addressed individual interest in the classroom. Items included response options from 1 (*Strongly disagree*) to 7 (*Strongly agree*). This particular scale included the themes of initial interest ($a$ = .91), situational interest ($a$ = .93), maintained situational interest (only one question), and utility value ($a$ = .88). (Hulleman et al., 2010). Developed interest formed in sex education may have an impact on the research a student does outside of class. This measure of individual interest

measured how participants' interest developed due to sex education. Although the questions initially were from the domain of Psychology, the phrasing worked well for sex education. In order to accomplish this domain change, questions changed from the domain of psychology to the domain of sex education. With the exception of the domain change, all questions were in their original form, including 1 (*Strongly disagree*) to 7 (*Strongly agree*). These questions measured previous individual interest in sex education.

**Intrinsic motivation.** Intrinsic motivation needed measuring to understand how participants felt motivation when they were taking sex education, and, after a review of relevant scales, this research employed a scale adapted from Wang et al. (2012b) measured intrinsic motivation. This scale's purpose was to understand intrinsic motivation to use online learning tools, and reliability in the original study appeared to have good reliability, $a = .91$ (Wang et al., 2012b). Because this scale combined education with intrinsic motivation and the phrasing of questions was appropriate, this scale was a strong candidate for this study. Phrasing included "I can get information I need," "I can exchange ideas with other people," "I can find others like me," "I can express my emotions and feelings," and "People there are willing to share their personal experiences with others who are dealing with a similar problem." Response options for these items ranged from 1 (*Strongly disagree*) to 5 (*Strongly agree*). Participants' intrinsic motivation helped predict how they sought sex information outside of sex education. In order to use the scale in this study, the domain needed to change from online learning to sex education. The phrases "sex education" or "in sex education" changed the domain and a change of tense assessed participants' previous experiences

(see Appendix B). Although these minor changes may have had implications with effect on student responses, they were necessary to measure previous experiences rather than current or future experiences.

**School-Prompted Interest**

The next two sections of the questionnaire for this study were about how often participants used sources outside of school to learn more about sex after they participated in their sex education course. The use of outside sources scale adapted from Wang et al. (2014) further looked at interest created by sex education but the main purpose was to understand where participants sought information outside of class. This scale helped examine the relationship between the individual interest and intrinsic motivation students felt and their self-reported uses of sources outside of class. Sources of information were important to understand in a world of media and resources that are constantly changing. Literature related to sex education resources should constantly be adapted and should continue to expand. All of these questions were adapted from the measure of motivation to learn by Wang et al. (2014). Participants used these items to determine their actual use of sources of learning about sexuality. Response options included 1 (*Never*) to 5 (*Almost daily*). In the previous study (Wang et al., 2014), reliability scores were calculated and were reported as moderate (Macdonald's $\omega = .48$) to high (Macdonald's $\omega = .74$) between factors. Exploratory factor analysis (EFA) was calculated with an initial sample and confirmatory factor analysis (CFA) was calculated on a new sample. Items receiving lower than .50 pattern coefficient were removed, and the authors identified four factors in 10 items (Wang et al., 2014). These 10 items were adapted to questions about sex education and the researchers edited them to remove possible confusion. For example,

"Watching TV shows or a movie about this subject" changed to two questions; "I watched television shows" and "I watched movies" (see Appendix D).

This educational sources section in the questionnaire asked where participants sought information about sex outside of sex education class. Frequency was measured from 1 (*never*) to 5 (*almost daily*) as it was in the original Wang et al. (2014) study. It was important that this information measured their activities outside of class during high school. "During high school, how often did you try these?" seeks the following responses: "I watched television shows," "I watched documentaries about sex," "I read about sexuality on the internet," "I went to a doctor's office to ask questions," "I asked my parents questions about sex." These questions, although not exhaustive or all of the questions included (see Appendix D), gave some information about motivation to learn outside of class. These questions measured which educational materials participants used about human sexuality outside the sex education course. Item scales were from 1 (*never*) to 5 (*almost daily*), individual scores consisted of calculated item means for both educational and erotic sources used. Maximum mean possible was five and the minimum was one for the individual item score. An item score of five indicated that students used educational or erotic sources more often, an item score of one indicated that students used these sources less. An item mean was calculated for the scale to indicate how often students used educational sources.

A free-response question about which websites participants visited was also included to determine if participants were aware of and if they use informative sexuality websites. This information can be useful for educators because students can list websites that they believe to be educational or were educational to them at some point.

Following the educational sources used in high school, the questionnaire then had items about erotic sources used outside of class. Because adolescents sometimes use other non-educational materials as a source of information about sexuality, it was important to understand which media were popular as well as the implications of using certain media. The framing differs in this set of questions, "Other ways people have answered their own questions about sexuality is by viewing erotic material (videos, pictures, or writing with no educational value). During high school, how often did you try these to learn about sex?" The scale was the same as the previous section, 1 (*never*) to 5 (*almost daily*). Items included: "I watched erotic material on TV," "I looked at erotic materials on the internet," "I read erotic material in books," and "I read erotic material elsewhere." These were not all of the questions included, but all of the questions can help inform sexuality literature about adolescents' use of non-educational media. The questions addressed whether and from which sources adolescents sought while in high school about sexuality and whether they used erotic materials as a source of information over materials that were more educational. Item scales were from one to five, individual scores consisted of calculated item means for both educational and erotic sources used. A mean item score of five indicated that students used educational or erotic sources more often, an item mean score of one indicated that students used these sources less. A mean was calculated for the scale to indicate how often students used erotic sources.

Other questions similar to Wang et al. (2014)'s methods evaluated whether participants wanted to know more information about sexuality after they had taken their sex education courses and whether they actually learned more from erotic materials than

from educational sources. Participants also added their first choice of source in looking for more information about sex. A one-word, free-response item obtained this information. This information can help inform researchers of where students may be going for information on human sexuality. Reported data were then combined into categories (i.e., family, friends, teachers, internet, media, and other categories).

Also included were questions that aimed to find the original purpose of using erotic materials, recreational or educational, and to learn which devices were used to access erotic materials (See Appendix E for the complete questionnaire). Whether students are using laptops, cellular phones, tablets, or other devices may also be of interest for educators because students may have access to these tools at home. If students have these devices, they may be seeking information about human sexuality on them without proper direction.

## Procedure

Participants voluntarily signed up to participate for this study. They participated in groups, 15-25 participants at a time, or in classroom settings, up to 70 in one class. Participants listened to an introduction that informed them about the study and questionnaire. They read the consent form and had the opportunity to opt out of participating in the research. All who read the consent form moved on to participate in the research. After the participants read the consent forms and the introduction was finished, distribution of the questionnaire to all participants began. Participants had 30 minutes to complete the questionnaire. No participants needed extra time. Once participants were finished, they placed their responses in a covered hopper so all of their personal data were out of sight of the researcher and other participants. Participants

submitted their questionnaires, received thanks for their participation, and left. A very concise debriefing informed participants of the purpose of this study. There was no deception in this study.

After data collection, analyses grouped participants according to the different types of curricula they received. The three curricula groups were: Group 1, comprehensive sex education; Group 2, abstinence only until marriage sex education; and Group 3, no sex education. The questionnaire instructed participants to skip the individual interest and intrinsic motivation sections if they did not receive sex education. Those who skipped this section and continued answering questions afterwards filled the no sex education category.

## Data Analyses

Data analyses varied as a function of the research question. Responses on the questionnaire sorted participants into the three sex education categories as described previously. Participants also elected to report where they received information about human sexuality, whether they sought information from educational or erotic sources, and how often they sought these materials. Item means of self-reported frequencies using a scale that ranged from 1 (*Never*) to 5 (*Almost daily*) were calculated and compared to previous sex education curricula (abstinence only until marriage sex education, comprehensive sex education, and no sex education). Participants identified what sources they used for information about human sexuality with a one-word open-response item. Participants also reported specific websites if they used the internet for information, and they reported the devices used to access this information about human sexuality.

For Q 2 A, "Are different sex education curricula associated with differences in the amount of *educational* sexuality sources sought by students outside of class?" A one-way ANOVA assessed the effect of the relationships between previous sexual education curricula and educational sources used.

The adapted Wang et al. (2014) scale of motivation measured motivation to use educational sources outside of class. This measured frequency of educational sources used outside of class. The item means ranged from 1 (*Never*) to 5 (*Almost daily*). The first set of questions asked about participants' motivation to learn using educational materials outside of class. A one-way ANOVA compared means of educational sources used outside of class between the three sex education groups. Because the ANOVA showed no significant difference between groups, the performing of a post-hoc analysis to measure between pairs did not occur.

Q 2 B, "Are different sex education curricula associated with differences in the amount of *erotic* sexuality sources sought by students outside of class?" was a variant of Q 2 A. Rather than educational materials used outside of class, erotic materials used outside of class were the focus. Both segments of the questionnaire had nine questions, and they were parallel to each other, in that each question from erotic sources reflected a related question about educational sources. For example, the first questions were "I watched [educational] television shows" and "I watched erotic material on TV." As with Q 2 A, a one-way ANOVA compared means from the questions about motivation to learn (Wang et al., 2014), this time using erotic sources. A relationship between motivation to learn and type of sex education curricula existed. The three grouping categories were once again, AOUM sex education, comprehensive sex education, and no sex education.

Following the ANOVA, because a relationship between all three groups existed, Tukey's range test identified relationships between pairs of sex education curricula.

Q3, "Are comprehensive sex education curricula more effective than abstinence only until marriage sex education at creating individual interest and intrinsic motivation?" To calculate the means for this research question, AOUM sex education and comprehensive sex education were two levels of the fixed factor, type of sex education. The no sex education category was not investigated for this research question; of interest was if and how curricula taught affected individual interest and intrinsic motivation. The two dependent variables were continuous scores based on a motivation scale adapted to measure perceived individual interest (Hulleman et al., 2010) and intrinsic motivation (Wang et al., 2012a) in the sex education classroom. Individual interest and intrinsic motivation are conceptually similar, as addressed previously; Pearson's *r* measured the significant correlation between these two variables. A MANOVA then assessed the relationship between the two curricula and individual interest and intrinsic motivation.

Q4, "Do individual interest and intrinsic motivation from sex education classes mediate the relationship between sex education curriculum and school-prompted interest?" Participants remained in the same two assigned categories of sex education curricula (comprehensive sex education and AOUM sex education). Means of the measures of individual interest and intrinsic motivation attempted to predict the amount and nature of school-prompted interest. Individual interest and intrinsic motivation were the covariates. Because educational sources used outside of class and erotic sources used outside of class are conceptually related, Pearson's *r* assessed the significant correlation.

The dependent variables were educational and erotic sources used. The information for these variables came from the questionnaires that assessed sources used outside of the classroom. After calculating the means of individual interest and intrinsic motivation, and sources used outside of class (erotic and educational), a one-way multivariate analysis of covariance (MANCOVA) assessed if relationships existed. Univariate analyses showed how individual interest and intrinsic motivation acted as covariates with educational sources and erotic sources separately. School-prompted interest would act as mediator if there were a relationship between the covariates and sources used outside of class.

# CHAPTER IV

# RESULTS

The sample was well over the power analysis goal of 300 participants. Of the *N* participants, 248 (71%) were women. As expected, most participants were between the ages of 18 and 22; 315 (92.1%) participants represented this age group; ages ranged from 18 to 42, and six did not describe their age. People of many ethnicities were included in this study (see Table 1). Some participants opted to label themselves as mixed ethnicities; the most represented mixed ethnicity were those who identified as White and Hispanic or Latino, there were 10 (2.9%).

Table 1

*Participants' ethnicities*

| Ethnicity | *n* | % |
|---|---|---|
| White | 231 | 66.4 |
| Hispanic or Latino | 50 | 14.4 |
| Black or African American | 25 | 7.2 |
| Asian | 7 | 2.0 |
| American Indian or Alaska Native | 3 | 0.9 |
| Other | 3 | 0.9 |
| Mixed Ethnicities | 27 | 7.8 |
| Unreported | 2 | 0.6 |
| Total | 348 | 100 |

A majority participants (*n* = 318, 91.4%) graduated high school between 2011 and 2014 (91.4%). Many participants were from Colorado 305 (87.6%) with 16 other states represented as well as three other countries. Participants also reported the type of neighborhood (rural, suburban, and urban) in which their high school was located (see Table 2) and the perceived socio-economic status (SES) of where the high school was located (see Table 3).

Table 2

*Location of High School*

| Location Description | *n* | % |
|---|---|---|
| Urban | 69 | 19.8 |
| Suburban | 215 | 61.8 |
| Rural | 62 | 17.8 |
| Unreported | 2 | 0.6 |
| Total | 348 | 100 |

Table 3

*Perceived socio-economic status of neighborhood*

| SES description | *n* | % |
|---|---|---|
| Lower class | 6 | 1.7 |
| Lower-middle class | 63 | 18.1 |
| Middle class | 157 | 45.1 |
| Upper-middle class | 108 | 31 |
| Upper class | 13 | 3.7 |
| Unreported | 1 | 0.3 |
| Total | 348 | 100 |

## Research Questions

### Question 1

Following the use of outside sources section of the questionnaire, participants also reported on a free-response question with one word where they sought information about human sexuality. The most frequently reported sources of information were friends, internet, family, teachers, counselors, books, and there were several other categories (see Table 4). Because this was a free-response question, students selected several answers; grouping these answers into larger categories clarified the analysis. For example, peers, girlfriends, buddies, etc. became "friends," Google, the web, YouTube, etc. became "internet," and mom, dad, sister, brother, aunt, etc. became "family." Of those who responded to this question, 75% were in the top six categories shown in Table 4.

Table 4

*Free response reported frequencies of sources of information*

| Source of Information | *n* | % |
|---|---|---|
| Friends | 90 | 25.9 |
| Internet | 82 | 23.6 |
| Family | 39 | 11.2 |
| Teachers | 21 | 6 |
| Counselors | 11 | 3.2 |
| Books | 11 | 3.2 |

For participants that sought information about sexuality on the internet, the questionnaire also sought which devices they used (see Table 5). Many students selected multiple devices, (i.e., laptop and phone, phone and desktop, desktop and tablet, etc.) and although there was a free response option to indicate another device, few utilized this

option; an example included a gaming device with internet connection. The scenarios of multiple devices and the free responses were not populated enough to include in Table 5.

Table 5

*Frequencies of devices used to seek information on human sexuality*

| Device Used | *n* | % |
|---|---|---|
| Laptop | 102 | 29.3 |
| Phone | 94 | 27 |
| Desktop computer | 36 | 10.3 |
| Tablet | 6 | 1.7 |

Finally, participants reported the websites that they used to learn about sex. Many responses were educational sources: Laci Green, informational videos on youtube.com, webmd.com, university websites or sites ending in ".edu," stayteen.org, sciencedaily.com, plannedparenthood.org, itsyoursexlife.org, informational websites based in the UK, clitical.com, bedsider.org, gurl.com, seventeen.com, beinggirl.com, teenhealth.com, articles on social media. Participants also elected to list sources that were erotic, even though the directions asked for educational sources: xvideos.com, pornhub.com, redtube.com, fuckbook.com, brazzers.com, notmilf.com, Men's Fitness, and Cosmopolitan.

**Question 2**

**Question 2A.** The research question, "Are different sex education curricula associated with differences in the amount of *educational* sexuality sources sought by students outside of class?" Participants reported having different information presented

in their sex education classes. Scale reliability for seeking educational materials was high ($\omega$ = .84).

Item means on the measure of educational sources used were not significantly different between the three groups; Levene's test of homogeneity showed insufficient evidence to claim that variances were not equal. Participants from all three categories were not significantly different. The difference between means on seeking educational materials about human sexuality was non-significant using a one-way ANOVA (See Table 6). For the first research question, there was no significant differences between the three groups.

Table 6

*Self-reported item means of Educational Sources Used by Sex Education Curriculum*

| | No sex education | Comprehensive | AOUM | | | | |
|---|---|---|---|---|---|---|---|
| | *M (SD)*[a] | *M (SD)*[b] | *M (SD)*[c] | *df* | *F* | *p* | $\eta^2$ |
| Educational | 1.95 (0.51) | 2.01 (0.59) | 2.11 (0.58) | 2, 343 | 1.34 | 0.26 | 0.01 |

*Notes*. Answers ranged from 1 (*Never*) to 5 (*Almost daily*). Calculated item means were from item responses. [a]$n$ = 19. [b]$n$ = 225. [c]$n$ = 100.

**Question 2B.** For each category for the second research question, "Q 2 B Are different sex education curricula associated with differences in the amount of *erotic* sexuality sources sought by students outside of class?" A one-way ANOVA assessed the relationship between sex education curricula and erotic sources used outside of class (see Table 7). Scale reliability for seeking erotic sources was high ($\omega$ = .85). Levene's test of homogeneity showed insufficient evidence to claim that variances were not equal. The

ANOVA revealed differences across the three groups. Tukey's range test investigated mean differences between the three categories because the ANOVA was significant. Tukey's range test indicated that mean differences between AOUM sex education and comprehensive sex education were significant ($p < .01$), but differences between no sex education and the other two categories were non-significant ($p > .05$).

Table 7

*Self-reported means of Erotic Sources Used by Sex Education Curriculum*

| | No sex education | Comprehensive | AOUM | | | | |
|---|---|---|---|---|---|---|---|
| | *M (SD)*[a] | *M (SD )*[b] | *M (SD)*[c] | *df* | *F* | *p* | $\eta^2$ |
| Erotic | 1.81 (0.45) | 1.70* (0.54) | 1.90* (0.62) | 2, 338 | 4.41 | 0.01 | 0.03 |

*Notes*. Answers ranged from 1 (*Never*) to 5 (*Almost daily*). Calculated item means were from item responses. [a]$n = 19$. [b]$n = 220$. [c]$n = 100$. *values with significant differences at $p < .01$.

**Question 3**

"Are comprehensive sex education curricula more effective than AOUM sex education at creating individual interest and intrinsic motivation?" Scale reliability for individual interest was high ($\alpha = .91$) and intrinsic motivation was high ($\alpha = .86$). Individual interest and intrinsic motivation were two conceptually related variables that were also significantly correlated, $r = .35$, $n = 328$, $p < .01$. A one-way MANOVA assessed the relationship between one two-level categorical predictor, sex education curricula (comprehensive sex education and AOUM sex education) and individual interest and intrinsic motivation. Because students who did not receive sex education could not have any form of interest prompted by school, the no sex education group had no measurements, and these participants were not included in this analysis. Box's test of

equality of covariance matrices did not reveal unequal variances across groups. The MANOVA indicated that a relationship existed between curricula and individual interest and intrinsic motivation as a group with a medium multivariate effect size (Cohen, 1969) [see Table 8].

Table 8

*Multivariate outcomes of MANOVA, how Comprehensive and AOUM sex education predicted individual interest and intrinsic motivation*

| | *df* | *F* | *p* | Partial *η2* | Wilks's Λ |
|---|---|---|---|---|---|
| Sex Education Curricula | 2, 324 | 21.98 | < .01 | 0.12 | 0.88 |

Item means compared individual interest and intrinsic motivation between groups. As shown in Table 9, univariate tests showed that sex education curriculum was not significantly associated with scores on the measure of individual interest. The Comprehensive and AOUM sex education groups were significantly different in self-reported intrinsic motivation with a medium effect size (Cohen, 1969) [see Table 9].

Table 9

*Univariate outcomes of from MANOVA, item means of individual interest and intrinsic motivation compared to sex education curricula*

| | Comprehensive | AOUM | | | | |
|---|---|---|---|---|---|---|
| | *M (SD)*[a] | *M (SD)*[b] | *df* | *F* | *p* | Partial $\eta^2$ |
| Individual Interest | 4.55 (0.84) | 4.60 (0.86) | 1, 325 | 0.2 | 0.65 | < .01 |
| Intrinsic Motivation | 3.11 (0.57) | 2.71 (0.56) | 1, 325 | 35.6 | <.01 | 0.1 |

*Notes.* Levene's test for equality of variances failed to reject that equal variances equal across groups. Scales ranged from 1 (*Never*) to 5 (*Almost daily*). [a]*n* = 226. [b]*n* = 100.

**Question 4**

For Q4, "Do individual interest and intrinsic motivation from sex education classes mediate the relationship between sex education curriculum and school-prompted interest?" a one-way MANCOVA used comprehensive sex education and AOUM sex education as the two-level categorical predictor. The dependent variables were educational and erotic sources used ($r = .57$, $n = 338$, $p < .01$); the scale used by participants ranged from 1 (*Never*) and 5 (*Almost daily*). Due to missing data in the use of educational sources category, the number of participants who were in the comprehensive sex education category was less (see Table 10). Covariates were the subscales of individual interest and intrinsic motivation, the MANCOVA suggested that individual interest might play a role in seeking sources outside of class (see Table 11).

Table 10

*Means and Standard Deviations of individual interest and intrinsic motivation for educational sources and erotic sources.*

| | Comprehensive | AOUM |
|---|---|---|
| | *M (SD)*[a] | *M (SD)*[b] |
| Educational Sources | 2.01 (0.59) | 2.11 (0.58) |
| Erotic Sources | 1.70 (0.54) | 1.90 (0.62) |

*Notes.* [a]$n = 220$, [b]$n = 100$.

Table 11

*MANCOVA results with curricula as the independent variable and, individual interest and intrinsic motivation as covariates of the dependent variables educational and erotic sources used.*

| | *F* | *df* | *p* | partial $\eta^2$ | Wilks's Λ |
|---|---|---|---|---|---|
| Individual Interest | 21.48 | 2, 315 | <.01 | .12 | .88 |
| Intrinsic Motivation | 0.09 | 2, 315 | .91 | <.01 | .99 |
| Curricula | 4.10 | 2, 315 | .02 | .03 | .98 |

*Notes.* Box's test of equality $p = .34$ shows dependent variables do not appear unequal across groups. Multivariate effects included individual interest and intrinsic motivation, which are within participants and covariates; curricula is between participants.

The effect of curricula (comprehensive sex education or AOUM sex education) on outside sources used (educational and erotic) was significant across both dependent variables. Individual interest played a role as a covariate explaining some of the variance between the independent variable and dependent variables. Intrinsic motivation was a non-significant covariate and did not explain variance. The effects of curricula and the sub-scale individual interest were significant with small effect sizes. Intrinsic motivation, however, did not appear to have a significant effect on both sources used.

The next step was to understand the relationships between the two individual dependent variables and their predictors. Univariate tests separated educational sources used outside of class and erotic sources used outside of class. The first test used educational sources as the dependent variable (see Table 12) and the second test used erotic sources as the dependent variable (see Table 13).

Table 12

*Univariate test from MANCOVA with educational sources used*

| | *df* | *F* | *p* | partial $\eta^2$ |
|---|---|---|---|---|
| Individual Interest | 1, 316 | 42.94 | <.01 | 0.12 |
| Intrinsic Motivation | 1, 316 | 0.07 | 0.8 | <.01 |
| Curricula | 1, 316 | 1.93 | 0.17 | <.01 |

*Notes.* Levene's test of equality of error variance indicates variances can be assumed equal. Multivariate effects included individual interest and intrinsic motivation which were within participants and covariates, curricula was between participants.

Across different forms of sex education, the degree of individual interest was a significant covariate that predicted uses of educational materials outside of class. Those who were more interested reported using sources that are more educational. However, the predictor variable of curricula was non-significant. This mirrors Q 2 A; there was no significant relationship between curricula and educational sources used outside of class.

Table 13

*Univariate test from MANCOVA with erotic sources used*

| | *df* | *F* | *p* | partial $\eta^2$ |
|---|---|---|---|---|
| Individual Interest | 1, 316 | 9.98 | <.01 | 0.03 |
| Intrinsic Motivation | 1, 316 | 0.19 | 0.67 | <.01 |
| Curricula | 1, 316 | 8.19 | <.01 | 0.03 |

*Notes.* Levene's test of equality of error variance indicates variances cannot be assumed equal. Multivariate effects included individual interest and intrinsic motivation which were within participants covariates; curricula was between participants.

With different forms of sex education predicting erotic sources used, individual interest played a role explaining some of the variance; intrinsic motivation did not (see Table 12). However, Levene's test rejected the assumption of homogeneity of variance. An analysis of group variance showed the ratio of the larger group variance to the smaller was only 1.30, showing that ANCOVA was robust to the test of homogeneity of variance (Wallenstein, Zucker, & Fleiss, 1980). This univariate test showed a relationship between curricula and seeking erotic sources, and individual interest showed a relationship with sources used, both with small effect sizes.

Those who received AOUM sex education reported using erotic sources for information about human sexuality more than did those who received comprehensive sex education. There was a relationship between individual interest and those who reported more use of educational sources of sexual information outside of class. However, the curricula was a non-significant predictor of the individual interest subscale. In this study, when all variables were present, including the covariates, a relationship existed between sex education curricula and erotic sources used outside of class about human sexuality. Even controlling for interest, those who received AOUM sex education showed more school-prompted interest to seek erotic sources for information about human sexuality than those who received comprehensive sex education.

# CHAPTER V

# DISCUSSION

The goal of this research was to explore the relationships between sex education curricula, interest and motivation, and sources students use outside of class to learn more. In order to achieve this purpose, the background of the participants needed understanding and the participants reflected upon how they learned about human sexuality. Participants' previous sex education and how often they sought information outside of class connected the concepts in the research questions. Relationships existed which might help future researchers and educators build curricula based on what we now know where students may be seeking sources outside of class.

Of those who participated, most students indicated that they seek their peers and the internet more than any other source of information about human sexuality. Participants also used mobile devices to access information about human sexuality more than a desktop computer. This means that when seeking information about human sexuality, participants sought information from their friends, or from devices they could use away from others who may be watching.

Most participants were between the ages of 19 and 21 and similarly represented the ethnic breakdown at the western university. Participants were mostly women. Most participants were from suburban high schools, but many represented urban and rural

areas. Participants were also asked to indicate the perceived socio-economic status of the neighborhood their high school was located in, most indicated middle class, with the rest indicating a slightly negatively skewed distribution from lower class to upper class.

For Q 2 A, "Are different sex education curricula associated with differences in the amount of *educational* sexuality sources sought by students outside of class?" The null hypothesis was, "The type of curricula presented does not change how adolescents use educational learning materials outside of class." An ANOVA compared means of educational sources used outside of class between the three sex education curricular categories (no sex education, abstinence only until marriage sex education, and comprehensive sex education). The ANOVA did not show significance between educational sources used and type of curricula. The type of sex education is not a predictor of how students use educational sources outside of class.

Q 2 B, "Are different sex education curricula associated with differences in the amount of *erotic* sexuality sources sought by students outside of class?" The null hypothesis was, "The type of curricula presented does not change how adolescents use erotic materials outside of class as sources of information." The means of erotic sources used were different when comparing AOUM and comprehensive sex education; those who received comprehensive sex education were less likely to report using erotic materials for information about sexuality, and those who received AOUM sex education were more likely to report using erotic sources for information about human sexuality. Because there was a significant difference between these two means, the null hypothesis was rejected with a small effect size.

In order to answer Q3, “Are comprehensive sex education curricula more effective than abstinence only until marraige sex education at creating individual interest and intrinsic motivation?” Included in this analysis were data from students who had either comprehensive sex education or AOUM sex education. The null hypothesis was, “No significant difference exists among types of curricula and school-prompted interest.” School-prompted interest consisted of the continuous variables of individual interest and intrinsic motivation. A one-way MANOVA assessed how each type of sex education curricula might influence seeking educational or erotic materials outside of class. The difference between means of individual interest grouped by curricula were not statistically different. Those who received comprehensive sex education reported more intrinsic motivation to seek additional materials about human sexuality. This relationship was significant with a medium effect size.

Q4 “Do individual interest and intrinsic motivation from sex education classes mediate the relationship between sex education curriculum and school-prompted interest?” A one-way MANCOVA assessed the relationship between the sex education curricula participants received and school-prompted interest on motivation to use outside sources. The covariates were the measures of individual interest and intrinsic motivation. What was of importance was how the covariates affected the relationship between sex education curricula and sources used outside of class (see *Figure 2*). The null hypothesis was, “Individual interest and intrinsic motivation are not significant mediators between types of curricula and sources used outside of class.” Although there was a relationship between individual interest and sources used outside of class, there was no relationship

between curricula and individual interest. Intrinsic motivation and school-prompted interest had no relationship.

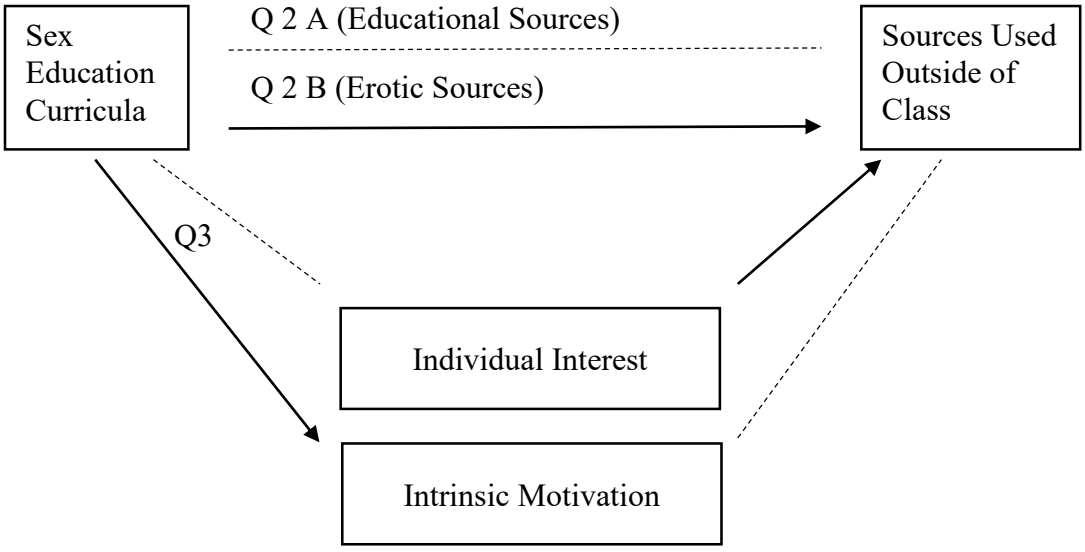


*Figure 2*. Model for all research questions and results. Overall model represents variables analyzed for Q 4. Variables analyzed for Q 2 A, Q 2 B, and Q 3 are also in model. Solid lines with arrows indicate significant relationships.

Those who received comprehensive sex education were more likely to report feeling greater intrinsic motivation to learn about human sexuality than did those who received abstinence only until marriage sex education. This was different from the hypotheses, which were expecting no relationship between curricula and sources used outside of class. However, that intrinsic motivation was not a predictor of actually seeking more educational or erotic sources outside of class. This finding may direct future scholars to learn more about the effects of AOUM sex education outside of class. Participants who received either comprehensive sex education or AOUM sex education did not differ in self-reported individual interest in using erotic sources outside of class. However, individual interest was an independent predictor of seeking sources outside of

class. When controlling for the individual interest that both groups reported, those who received AOUM sex education reported seeking more erotic sources for information about human sexuality than those who received comprehensive sex education (See *Figure 3*).

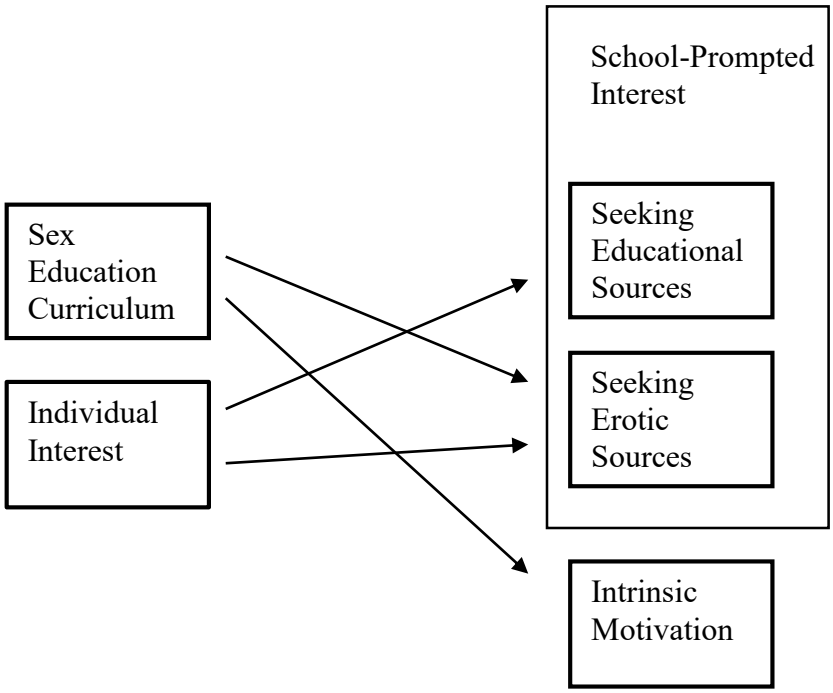


*Figure 3.* Results model for all research questions. Solid arrows indicate significant relationships.

Because this is currently not a widely researched domain in the field of educational psychology, it will be important in future studies examine students seeking more information from unchecked internet sources. In this domain, it was common that adolescents report that friends ($n$ = 90), internet ($n$ = 82), family ($n$ = 39), teachers ($n$ = 21), counselors ($n$ = 11), and books ($n$ = 11) were the most common learning sources, in that order. As discussed in the introduction, information on where students are seeking

additional information about human sexuality can help inform future curricula. Educators can then prepare students for specific sources sought, whether they are educational or erotic.

The examination of the potential relationships between individual interest and intrinsic motivation and the types of sources that participants used outside the classroom could help inform researchers and educators about how sex education plays a role in student outside learning. Without checking where students are seeking information, educators could be missing opportunities to give students educational tools for learning outside of class. Information that students receive could be ineffective or dangerous (Brown et al., 2005; Kanuga & Rosenfeld, 2004; Lenhart, 2009; Skinner et al., 2003). The type of sex education participants received may have affected their higher motivation scores and higher use of outside resources.

## Implications

### Sex Education

The purpose of this study was to begin to examine school-prompted interest and the relationships between individual interest, intrinsic motivation, and how often students seek additional educational or erotic information about human sexuality outside of class. In this domain, there was a dearth of information in the current literature connecting intrinsic motivation and individual interest to learning outside of class. Further, more research is needed about how seductive details, such as sexuality, create school-prompted interest when human sexuality is the main topic of the course. It was also the purpose of this study to understand which sources of information participants used outside of class.

It will be beneficial to understand whether students did not use sources outside of class and whether these sources were educational or erotic.

In the United States, two types of sex education are prominent. AOUM sex education tries to prevent adolescents having sex until they are married. Comprehensive sex education attempts to teach the tools that adolescents need to have safer sex as well as to support abstinence. The current body of literature about sex education tends to support comprehensive sex education over AOUM sex education for a host of reasons discussed previously (Kirby, 2008), and most parents want some form of sex education to be presented in schools (Bleakley et al., 2006).

The results from this study can inform the current literature. Although this study was conducted on a small scale (i.e., one western university), compared to other sources, some trends should be taken into consideration. There was no difference in seeking educational sources outside of class between those that received comprehensive sex education, AOUM sex education, and no sex education. This may be a sign students did not receive information about resources from the two curricula taught in schools.

Although participants who received AOUM sex education may not have shown more motivation to seek educational materials about human sexuality, they reported seeking more information from erotic sources. Those who had AOUM sex education looked to erotic sources for information more than did those who had comprehensive sex education. This poses a problem for students who wanted more information from their sex education class and proponents of AOUM sex education. Using this information, the literature can inform sex education curricula of current trends and prepare adolescents to make informed decisions about their health and safety.

Proponents of comprehensive sex education can also use this information about sources used outside of class to support the argument that comprehensive sex education is generally more effective at preventing sexually transmitted infections and unwanted pregnancy rates (Kirby, 2008). If students are seeking information from erotic sources as early adolescents, then when they participate in sexual behaviors later, they may be at higher risk for unplanned pregnancy or STIs (Brown & L'Engle, 2009). Students from both curricula reported some use of erotic sources. Using these erotic sources can lead to false ideas for adolescents. They may think their peers are participating in more high-risk sexual behaviors. Sex education can prepare students for these sources and give a more clear idea about behaviors that is common in their age groups. Educators can also include information about using friends, internet, family, etc. as sources of information, which could help curb the amount of misinformation about human sexuality. This misinformation may contribute to high risk sexual behaviors (Braun-Courville & Rojas, 2009). As the internet increases its wealth of information, educational or erotic, consumers of the internet should receive the tools to digest this multitude of information. In previous literature, comprehensive sex education leads to safer sexual behavior than AOUM sex education (Kirby, 2008). However, the age of first coitus did not differ for students who took either of the two types of curricula. Because there is a difference between where students seek information about sexuality based on their curriculum type, misinformation could spread and act as a sexual super peer, a source for adolescents to learn about behaviors by other adolescents or adults (Brown et al., 2005; Kanuga & Rosenfeld, 2004).

The information they find can affect how adolescents view themselves and could increase high-risk sexual behavior. With comprehensive sex education, adolescents seek less erotic sources for information and are more likely to use protection, communicate better, and make other positive sexual health decisions. Educational tools and techniques can be designed that may be able to help a learner filter out information that is not educational and find specific information. They can also help a learner find outlets to discuss sensitive topics and teach them how to ask questions appropriately.

### Individual Interest and Intrinsic Motivation

The individual interest scale measured the feeling of enjoyment of learning in class, and the intrinsic motivation scale measured the drive to learn more. The individual interest and intrinsic motivation scales attempted to measure the students' feelings of enjoyment that may have mediated the drive to seek more information outside of class. Some participants indicated that they enjoyed activities from the lessons, felt safe, and were able to communicate with their peers. Similarly, participants also indicated that they felt intrinsic motivation to continue learning. They thought about the class outside of school, they talked with their friends about class, and they remembered enjoying the class. Both constructs were unique measures of how students felt. However, they correlated positively. Generally, if students felt interest in class, they also felt motivated to learn more outside of class.

Participants felt individual interest and intrinsic motivation, but curricula did was not related to how much of each they felt. How individual interest and intrinsic motivation translated to school-prompted interest in this study may be unique to the domain of sex education because this topic has many seductive details, as noted

previously. However, it is important to learn about how school-prompted interest begins in every domain so educators can do their best to improve their students learning. Recommendations for educators could include sticking to the information in the curricula without adding in tangential details or educating students about finding educational sources about human sexuality.

It is difficult to find information about school-prompted interest as it relates to other domains. The literature review for this study was no exception. Students who received abstinence only until marriage sex education reported no significant differences from their comprehensive sex education peers. However, participants who felt individual interest were more likely to seek erotic sources for information about human sexuality.

Students who had comprehensive sex education reported more intrinsic motivation than their AOUM peers did. The methods used in this study could inform future studies and help educators recognize which methods work best. Comprehensive sex education did not lead students to greater use of erotic sources of information about human sexuality. However, those who received AOUM sex education reported using more erotic sources of sexual information. These non-educational sources pose the potential of leading to higher-risk sexual behaviors. However, this did not translate to seeking educational information about human sexuality outside of class. Both groups reported similar levels of seeking educational and erotic materials. Making the connection from either individual interest or intrinsic motivation to learning outside of class is important for researchers to help inform educators about school-prompted interest.

Both the individual interest and intrinsic motivation portions of the questionnaire measured two conceptually related variables. Individual interest inspired in the classroom can lead to self-regulated learning and intrinsic motivation. Because individual interest can lead to intrinsic motivation, both were potentially related variables. Students could feel both interest and motivation in the classroom. The correlation between these two constructs indicated that they related to one another. Individual interest and intrinsic motivation together were pieces of the puzzle. Feelings of each were important and could potentially lead to enjoyment of materials presented in class and further researched outside of class. Although, comprehensive sex education participants indicated that they did not feel individual interest differently than those who received AOUM sex education. Although there was a difference in how students felt motivation, this predictor did not lead to a difference in seeking additional sources of information outside of class.

**School-Prompted Interest**

School-prompted interest is the feeling of interest students report when they learn about a specific topic and then continue to expand their learning outside of class. The motivation to learn scale created by Wang et al. (2014) was adapted for this study and measured the frequency of learning sources used outside of class, school-prompted interest. This scale originally measured learning outside of class by using frequency data about specific sources students used to learn. This general scale was adapted to the domain of sex education. The role this scaled played in this study was a measure of actual usage of materials outside of class. Students reported how often they used educational materials with a variety of sources: television, internet, friends, movies, etc.

Students also reported how often they used erotic sources outside of class. The scale showed a difference between the two sex education curricula groups, but did not find that those who received no sex education were different from the two sex education groups.

As with Wang et al.'s (2014) research, the participants in this present study showed differences in motivation to learn outside of class. The data showed that students were very infrequently seeking educational or erotic sources of sexual information. For this reason, future researchers who use the scale could change the anchors. Rather than giving specific anchors for yearly, monthly, weekly, or daily, Likert-type scales may function more appropriately as participants could better judge how often they sought extra learning materials. Other problems with the scale included measuring sources that are not typical for finding information about sexuality. Although there are exceptions, people may not look for television programming to seek information about sex. Not many people write erotic stories, or review notes from sex education class. Information from this study can help form the questionnaire into a more efficient research tool.

Because this scale adapted from Wang et al. (2014) worked in finding relationships between groups, this scale can function in other domains. Motivation to learn outside the class should be very important to educators trying to improve curricula. Educators can use this scale in other domains to understand how their students are motivated to take extra steps to learn. We can then seek to understand how students feel motivation and then recommend ways to support learning. Reliability in the original scale was high when it functioned in a different domain. Showing reliability in this scale supports the scale's ability to measure school-prompted interest in different domains.

The open-response question about seeking sources outside of class found a rise of popularity of the internet as a source of information for adolescents. Previous studies have not listed the internet as a common source for learning about human sexuality (Borzekowski, 2006). Participants demonstrated school-prompted interest in both educational and erotic sources of information, and they reported that they used the sources on the internet for both educational and erotic purposes. Participants reported that the internet was one of the most popular sources of information, following information from peers. Because the internet has many uncontrolled sources, it is important for educators to help adolescents become informed consumers of information on the internet. In addition, participants reported that they used mobile devices such as laptops and cellular phones to access this information. The rise in use of mobile devices may be because there is potential to take these devices into the privacy of their rooms, away from onlookers. These data can inform educational psychology literature and sex education literature about where students are currently seeking information that may be difficult to talk about openly.

On the internet, in books, with family members, and from various other sources, there are both educational and erotic materials from which participants learned. There are excellent sources for learning, ones that seem useful but contain misinformation, and ones that do not claim to be educational. Adolescents who are seeking information from the latter two types of sources may believe that other adolescents are performing high-risk sexual behaviors when other adolescents are actually not. This idea that peers may be performing high-risk sexual behaviors can lead to unintended consequences for those trying to learn and could lead to participating in high-risk sexual behaviors themselves.

However, with proper direction, adolescents can be using educational sources of information that could help prevent early coitus, slow sexually transmitted infection rates, and prevent early pregnancies. If more adolescents are gaining knowledge from these educational websites, communication about sexual health information could increase, effectively decreasing misinformation among adolescents.

These data do not directly address whether adolescents should be receiving more sex education but indicate that the quality of the sex education should improve. More information about where students can find sources could be extremely helpful and could possibly reduce high-risk sexual behaviors. Other studies have already shown a relationship between sex education type and lowering high-risk sexuality behavior (Kirby, 2008). This study shows that students could receive helpful information that directs them to educational websites about human sexuality. Adolescents are trying to learn more about human sexuality. They are also already looking at educational and erotic sources of information and educators should take the information presented here to recommend high quality educational sources.

## Limitations

Studying the transfer of learning from school to home can be a challenging task. In order to collect this information from adult participants, of importance was their intrinsic motivation and individual interest they felt in class. To begin, self-report measures have weaknesses. Participants may lie, exaggerate, or not want to answer sensitive questions. They may do this without awareness. They may not accurately recall their high school years and may not report accurate information about where they sought information about human sexuality. When in a group, they may answer questions

to self-enhance because they want to feel socially acceptable (Fiske & Taylor, 2013). Without effective triangulation techniques, it is important to improve reliability, surveys are still effective methods to procure data (Gonyea, 2005). How each participant felt when he or she was in high school could have been inaccurate. Participants also recorded websites they used up to five (or more) years ago, depending on when they actually received a sex education course. The time between having the sex education course and when they participated in the survey could have been the largest limitation to this study.

The method of research could have also been a limitation. In some groups, participants may have influenced other participants' data by talking, joking, or laughing while they participated in the survey. A majority of participants appeared focused and did not appear to influence others' data. Between the curricula groups, because Colorado law requires sex education, those who did not receive sex education were far fewer than those who received either AOUM or comprehensive sex education. This may have biased the results for the no sex education category.

When entering data, there was also a limitation of attrition. Some participants did not fill out various sections of the surveys. Some were missing information on whole sections, leading to different numbers of usable participant data for Q2. This lack of information also reduced the number of usable data on Q3 and Q4, but the *N* still satisfied the requirement set by previous research and a priori effect size tests. Using as much data as possible for each research question should give the best information about the population.

The demographics of this group of participants may also have influenced the data. There were approximately twice the number of woman as men. This was not

representative of the population of the western university. There may also be statistical influence by outliers in the group, specifically, those who graduated high school more than 10 years ago, and, although I chose to be inclusive of those from other states and countries, their school-prompted interest could be different based on the curricula they received.

Another limitation was the method of evaluating the curricula that participants received. A plan to collect the type of sex education received was to call and speak to the school districts that participants attended. This plan would have acquired publicly available knowledge: the type of sex education the specific school district taught. Too many variables became present to use schools districts as reliable resources. For example, after a brief phone interview, one district reported having AOUM education, but brought in a guest speaker to discuss contraceptive methods. Other districts cited state law and according to their website taught AOUM education, when the current state law requires comprehensive sex education. Because of these limitations, participant reported curricula would be sufficient for this study.

## Conclusions

Current research on sex education curricula support comprehensive sex education over abstinence only until marriage sex education (Kirby, 2008). In this study, those who received AOUM sex education reported using more erotic sources outside of class to learn about human sexuality than did those who received comprehensive sex education. Those in the AOUM sex education group reported using more erotic materials than those in the comprehensive sex education group even though both groups did not differ in individual interest to seek sources of information. Without proper guidance and

education in class, these erotic sources can act as a sexual super peer and can potentially lead adolescents to think that people their ages participate in more high-risk sexual behaviors (Brown et al., 2005). This could potentially be a danger of AOUM sex education. With a more comprehensive approach, educators can prepare adolescents for a wealth of sources both educational and non-educational.

In the domain of sex education, adolescents may feel school-prompted interest. School-prompted interest and transfer to learning outside of class are extremely important because educators want their students to continue learning away from the classroom. Further research into how seductive details interact with school-prompted interest would be extremely beneficial for how researchers and educators continue to understand how adolescents learn about human sexuality. Empirical data about how adolescents learn can lead to making better-informed decisions about sex education curricula. As future educators teach with methods supported by empirical evidence, they could help adolescents make responsible decisions, choose educational sources, lower the rates of unintended pregnancies, and lower the rates of STIs. This study should be a starting point for other experimental and correlational scholarship about school-prompted interest for sex educators.

Literature in educational psychology can also benefit from this study. Students feel school-prompted interest. Students who participate in different classes often enjoy the topics they are learning experience individual interest. This enjoyment may translate to self-regulated learning and school-prompted interest. If students are demonstrating self-regulated learning outside of class based on what they learned in class, it is possible that they felt both individual interest and intrinsic motivation. This interest was school-

prompted and showed that the lesson plans from comprehensive sex education programs may have functioned as intended. Of particular importance to this study was how seductive details interacted with the topic of interest in the classroom. The seductive detail, sex, is the domain taught. When teaching a seductive detail, the students may find more individual interest compared to other domains. The topics that students find important, or interesting, are what they are trying to learn outside of the classroom. Creating school-prompted interest may be a difficult task, but the rewards would be great.

Students at this western university indicated that they were more likely to visit erotic websites for information about human sexuality if they received abstinence only until marriage sex education. Based on the results of this study, sex education curricula could influence how and where students learn about human sexuality outside of class. Educators should consider this information as an important factor when choosing curricula and the method of delivering it in the classroom. Ongoing research in this area should provide additional evidence to quantify appropriate curricula and methods of instruction and should continue in every domain.

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# APPENDIX A

# INTEREST SCALE

I thought sex education was an interesting subject.

Strongly disagree Disagree Somewhat disagree Neutral Somewhat Agree Agree Strongly Agree

I was not interested in sex education. (Reversed)

Strongly disagree Disagree Somewhat disagree Neutral Somewhat Agree Agree Strongly Agree

I thought I would like learning about sex education.

Strongly disagree Disagree Somewhat disagree Neutral Somewhat Agree Agree Strongly Agree

I thought sex education would be interesting.

Strongly disagree Disagree Somewhat disagree Neutral Somewhat Agree Agree Strongly Agree

I always wanted to learn more about sex education.

Strongly disagree Disagree Somewhat disagree Neutral Somewhat Agree Agree Strongly Agree

What I learned in sex education is relevant to my life.

Strongly disagree Disagree Somewhat disagree Neutral Somewhat Agree Agree Strongly Agree

I think what we studied in sex education was useful for me to know.

Strongly disagree Disagree Somewhat disagree Neutral Somewhat Agree Agree Strongly Agree

I found the content of sex education to be personally meaningful.

Strongly disagree Disagree Somewhat disagree Neutral Somewhat Agree Agree Strongly Agree

I thought the content of sex education was very interesting.

Strongly disagree Disagree Somewhat disagree Neutral Somewhat Agree Agree Strongly Agree

I thought what we learned in sex education was fascinating.

Strongly disagree Disagree Somewhat disagree Neutral Somewhat Agree Agree Strongly Agree

To be honest, I just didn't find sex education interesting. (Reversed)

Strongly disagree Disagree Somewhat disagree Neutral Somewhat Agree Agree Strongly Agree

I thought the material in sex education was boring. (Reversed)

Strongly disagree Disagree Somewhat disagree Neutral Somewhat Agree Agree Strongly Agree

Sex education fascinates me.

Strongly disagree Disagree Somewhat disagree Neutral Somewhat Agree Agree Strongly Agree

I want to keep learning as much as possible about sex education.

Strongly disagree Disagree Somewhat disagree Neutral Somewhat Agree Agree Strongly Agree

# APPENDIX B

# INTRINSIC MOTIVATION SCALE

In sex education, I could get information I needed.

Strongly disagree Disgree Neutral Agree Strongly agree

In sex education, I could share my knowledge with others.

Strongly disagree Disgree Neutral Agree Strongly agree

In sex education, I could exchange ideas with other people.

Strongly disagree Disgree Neutral Agree Strongly agree

In sex education, I could talk with people with similar interests and values.

Strongly disagree Disgree Neutral Agree Strongly agree

In sex education, I could find others like me.

Strongly disagree Disgree Neutral Agree Strongly agree

Because of sex education, I could communicate better with friends and family.

Strongly disagree Disgree Neutral Agree Strongly agree

In sex education, people were very supportive of each other.

Strongly disagree Disgree Neutral Agree Strongly agree

People in my sex education class were willing to share their personal experiences with others who were dealing with similar problems.

Strongly disagree Disgree Neutral Agree Strongly agree

In sex education, I could express my emotions and feelings.

Strongly disagree Disgree Neutral Agree Strongly agree

In sex education, I felt relaxed.

Strongly disagree Disgree Neutral Agree Strongly agree

Sex education was fun.

Strongly disagree Disgree Neutral Agree Strongly agree

Sex education helped kill time.

Strongly disagree Disgree Neutral Agree Strongly agree

# APPENDIX C

## PREVIOUS SEX EDUCATION

**Your Sexual Education Experience**

| Did you learn about these topics in sex education? | | Yes | No |
|---|---|---|---|
| 1. | Reproductive system | Yes | No |
| 2. | Abstinence before marriage | Yes | No |
| 3. | Sexually transmitted infections (STIs) | Yes | No |
| 4. | Contraceptive methods | Yes | No |
| 5. | Having safe sex | Yes | No |
| 6. | Various effectiveness rates of condoms | Yes | No |
| 7. | How to put on a condom | Yes | No |
| 8. | How to say no to sex | Yes | No |
| 9. | How to communicate with friends about sex | Yes | No |
| 10. | How to communicate with parents about sex | Yes | No |
| 11. | Educational sexuality websites | Yes | No |
| 12. | Variation in sexuality in society | Yes | No |

| | | |
|---|---|---|
| 13. Were you given access to condoms at school? | Yes | No |
| 14. Were you shown how to put on a condom? | Yes | No |
| 15. Did you learn all that you wanted to about sex in school? | Yes | No |
| 16. Did your teachers use a variety of teaching methods in sex education? | Yes | No |

17. How often did you learn about sex in a sex education class?

Never Once A few times Yearly Monthly

# APPENDIX D

## USE OF OUTSIDE SOURCES

**Below are examples of many educational activities people engage in to answer questions about human sexuality. Because of sex education, how often did you try these to learn about sex?**

| | Never | Hardly ever | Monthly | Weekly | Almost daily |
|---|---|---|---|---|---|
| 18. I watched television shows | 1 | 2 | 3 | 4 | 5 |
| 19. I watched movies | 1 | 2 | 3 | 4 | 5 |
| 20. I watched documentaries about sex | 1 | 2 | 3 | 4 | 5 |
| 21. I read about sexuality on the internet | 1 | 2 | 3 | 4 | 5 |
| 22. I read a magazine with sexual facts | 1 | 2 | 3 | 4 | 5 |
| 23. I read books with sexual facts | 1 | 2 | 3 | 4 | 5 |
| 24. I went to a doctor's office to ask questions | 1 | 2 | 3 | 4 | 5 |
| 25. I listened to my friends talk about sex | 1 | 2 | 3 | 4 | 5 |
| 26. I asked my parents questions about sex | 1 | 2 | 3 | 4 | 5 |
| 27. I asked another adults questions about sex | 1 | 2 | 3 | 4 | 5 |
| 28. I participated in a sexuality club or group | 1 | 2 | 3 | 4 | 5 |
| 29. I played sex games | 1 | 2 | 3 | 4 | 5 |
| 30. I thought about sex a lot | 1 | 2 | 3 | 4 | 5 |
| 31. I wrote about sex (e.g., journals, poetry, twitter, facebook, etc.) | 1 | 2 | 3 | 4 | 5 |
| 32. I read facts on twitter or facebook about sex | 1 | 2 | 3 | 4 | 5 |
| 33. I read through sex education notes after the class was over | 1 | 2 | 3 | 4 | 5 |

34. If you have visited educational websites to learn about sex, please list which ones you visited.

_____

_____

**Other ways people have answered their own questions about sexuality is by viewing erotic material (videos, pictures, or writing with no educational value). Because of sex education, how often did you try these to learn about sex?**

| | Never | Hardly ever | Monthly | Weekly | Almost daily |
|---|---|---|---|---|---|
| 35. I watched erotic material on TV | 1 | 2 | 3 | 4 | 5 |
| 36. I watched erotic movies in theaters or on TV | 1 | 2 | 3 | 4 | 5 |
| 37. I looked at erotic materials on the internet | 1 | 2 | 3 | 4 | 5 |
| 38. I looked at erotic material in magazines | 1 | 2 | 3 | 4 | 5 |
| 39. I looked at other erotic materials with pictures (e.g., hentai, books, etc.) | 1 | 2 | 3 | 4 | 5 |
| 40. I read erotic material in books | 1 | 2 | 3 | 4 | 5 |
| 41. I read erotic material in magazines | 1 | 2 | 3 | 4 | 5 |
| 42. I read erotic material on the internet | 1 | 2 | 3 | 4 | 5 |
| 43. I read erotic material elsewhere | 1 | 2 | 3 | 4 | 5 |

# APPENDIX E

# SEX EDUCATION HISTORY QUESTIONNAIRE

This is a questionnaire to understand where you learned about human sexuality before you came to college.

## Demographics

Sex? F M

Age? _____

Ethnicity? American Indian or Alaska Native Asian Black or African American

Native Hawaiian or Other Pacific Islander White Hispanic or Latino Other_____

What year did you graduate high school or get your GED?

(e.g., 2008, 2009, 2010) _____

Did you attend a public school? Yes No

If you did not attend public school, where did you receive your education?

(e.g., parochial, Catholic; independent; Montessori; Waldorf; etc.)

_____

Did you attend only public or only private school? Yes No

Did you switch schools during

middle school or High School? Yes No

Which type of community was your High School in? Rural Suburban Urban

How would you describe the location of your school?

lower class lower-middle class middle class upper-middle class upper class

What state did you graduate High School from? _____

(e.g., Colorado, Idaho, New York)

If you can remember, what was your school district? _____

(e.g., Greeley/Evans School District 6, JeffCo, Adams 12)

**Think back to your sex education classes before college (i.e., High School, Middle School, etc.) when you answer these questions. If you have never taken a sex education course, skip this section and continue on page 6.**

I thought sex education was an interesting subject.

Strongly disagree Somewhat disagree Disagree Neutral Agree Somewhat agree Strongly agree

I was not interested in sex education.

Strongly disagree Somewhat disagree Disagree Neutral Agree Somewhat agree Strongly agree

I thought I would like learning about sex education.

Strongly disagree Somewhat disagree Disagree Neutral Agree Somewhat agree Strongly agree

I thought sex education would be interesting.

Strongly disagree Somewhat disagree Disagree Neutral Agree Somewhat agree Strongly agree

I always wanted to learn more about sex education.

Strongly disagree Somewhat disagree Disagree Neutral Agree Somewhat agree Strongly agree

What I learned in sex education is relevant to my life.

Strongly disagree Somewhat disagree Disagree Neutral Agree Somewhat agree Strongly agree

I think what we studied in sex education was useful for me to know.

Strongly disagree Somewhat disagree Disagree Neutral Agree Somewhat agree Strongly agree

I found the content of sex education to be personally meaningful.

Strongly disagree Somewhat disagree Disagree Neutral Agree Somewhat agree Strongly agree

I thought the field of sex education was very interesting.

Strongly disagree Somewhat disagree Disagree Neutral Agree Somewhat agree Strongly agree

I thought what we learned in sex education was fascinating.

Strongly disagree Somewhat disagree Disagree Neutral Agree Somewhat agree Strongly agree

To be honest, I just didn't find sex education interesting.

Strongly disagree Somewhat disagree Disagree Neutral Agree Somewhat agree Strongly agree

I thought the material in sex education was boring.

Strongly disagree Somewhat disagree Disagree Neutral Agree Somewhat agree Strongly agree

Sex education fascinates me.

Strongly disagree Somewhat disagree Disagree Neutral Agree Somewhat agree Strongly agree

I want to keep learning as much as possible about sex education.

Strongly disagree Somewhat disagree Disagree Neutral Agree Somewhat agree Strongly agree

In sex education, I could get information I needed.

Strongly disagree Disgree Neutral Agree Strongly agree

In sex education, I could share my knowledge with others.

Strongly disagree Disgree Neutral Agree Strongly agree

In sex education, I could exchange ideas with other people.

Strongly disagree Disgree Neutral Agree Strongly agree

In sex education, I could talk with people with similar interests and values.

Strongly disagree Disgree Neutral Agree Strongly agree

In sex education, I could find others like me.

Strongly disagree Disgree Neutral Agree Strongly agree

Because of sex education, I could communicate better with friends and family.

Strongly disagree Disgree Neutral Agree Strongly agree

In sex education, people were very supportive of each other.

Strongly disagree Disgree Neutral Agree Strongly agree

People in my sex education class were willing to share their personal experiences with others who were dealing with similar problems.

Strongly disagree Disgree Neutral Agree Strongly agree

In sex education, I could express my emotions and feelings.

Strongly disagree Disgree Neutral Agree Strongly agree

In sex education, I felt relaxed.

Strongly disagree Disgree Neutral Agree Strongly agree

Sex education was fun.

Strongly disagree Disgree Neutral Agree Strongly agree

Sex education helped kill time.

| Strongly disagree | Disgree | Neutral | Agree | Strongly agree |
|---|---|---|---|---|

**Your Sexual Education Experience**

| Did you learn about these topics in sex education? | | Yes | No |
|---|---|---|---|
| 1. | Reproductive system | Yes | No |
| 2. | Abstinence before marriage | Yes | No |
| 3. | Sexually transmitted infections (STIs) | Yes | No |
| 4. | Contraceptive methods | Yes | No |
| 5. | Having safe sex | Yes | No |
| 6. | Various effectiveness rates of condoms | Yes | No |
| 7. | How to put on a condom | Yes | No |
| 8. | How to say no to sex | Yes | No |
| 9. | How to communicate with friends about sex | Yes | No |
| 10. | How to communicate with parents about sex | Yes | No |
| 11. | Educational sexuality websites | Yes | No |
| 12. | Variation in sexuality in society | Yes | No |

| | | |
|---|---|---|
| 13. Were you given access to condoms at school? | Yes | No |
| 14. Were you shown how to put on a condom? | Yes | No |
| 15. Did you learn all that you wanted to about sex in school? | Yes | No |
| 16. Did your teachers use a variety of teaching methods in sex education? | Yes | No |

17. How often did you learn about sex in a sex education class?

Never Once A few times Yearly Monthly

**Below are examples of many educational activities people engage in to answer questions about human sexuality. Because of sex education, how often did you try these to learn about sex?**

| | Never | Hardly ever | Monthly | Weekly | Almost daily |
|---|---|---|---|---|---|
| 18. I watched television shows | 1 | 2 | 3 | 4 | 5 |
| 19. I watched movies | 1 | 2 | 3 | 4 | 5 |
| 20. I read about sexuality on the internet | 1 | 2 | 3 | 4 | 5 |
| 21. I read magazines with sexual facts | 1 | 2 | 3 | 4 | 5 |
| 22. I read books with sexual facts | 1 | 2 | 3 | 4 | 5 |
| 23. I went to a doctor's office to ask questions | 1 | 2 | 3 | 4 | 5 |
| 24. I discussed sex with my friends | 1 | 2 | 3 | 4 | 5 |
| 25. I asked my parents questions about sex | 1 | 2 | 3 | 4 | 5 |
| 26. I spent time outside of sex ed reviewing my notes | 1 | 2 | 3 | 4 | 5 |

27. If you have visited educational websites to learn about sex, please list which ones you visited.

_____

_____

_____

_____

_____

**Other ways people have answered their own questions about sexuality is by viewing erotic material (videos, pictures, or writing with no educational value). Because of sex education, how often did you try these to learn about sex?**

| | Never | Hardly ever | Monthly | Weekly | Almost daily |
|---|---|---|---|---|---|
| 28. I watched erotic material on TV | 1 | 2 | 3 | 4 | 5 |
| 29. I watched erotic movies | 1 | 2 | 3 | 4 | 5 |
| 30. I looked at erotic materials on the internet | 1 | 2 | 3 | 4 | 5 |
| 31. I looked at erotic material in magazines | 1 | 2 | 3 | 4 | 5 |
| 32. I looked at other erotic materials with pictures (e.g., hentai, books, etc.) | 1 | 2 | 3 | 4 | 5 |
| 33. I went to a doctor's office to find erotic materials | 1 | 2 | 3 | 4 | 5 |
| 34. My friends talked about sex, in a non-educational way | 1 | 2 | 3 | 4 | 5 |
| 35. Parents talked about sex, but it was not educational | 1 | 2 | 3 | 4 | 5 |
| 36. I wrote erotic stories | 1 | 2 | 3 | 4 | 5 |

37. Did you want to learn more because you had your sexual education class?

Yes No I did not have Sex Ed

38. Would you say that you learned more from erotic material than sexual education?

Yes No I have never used erotic material

39. When you wanted to learn more about sexuality while you were in High School, where did you go for more information? Please answer with one word.

_____

40. In High School, my reasons for using erotic material were…

mostly recreational. equally recreational and educational.

mostly educational. I have never used erotic material.

41. If you used the internet to learn more about sexuality or access erotic material, which device did you use the most?

Desktop Laptop Tablet Phone

If you used a different device, please write it in _____

# APPENDIX F

# INSTITUTIONAL REVIEW BOARD APPROVAL

UNIVERSITY of
NORTHERN COLORADO

*Institutional Review Board*

| | |
|---|---|
| DATE: | December 18, 2014 |
| TO: | Paul Kleinert |
| FROM: | University of Northern Colorado (UNCO) IRB |
| PROJECT TITLE: | [681787-2] How School Prompted Interest and Motivation May Predict Where Adolescents Seek Additional Learning Materials about Human Sexuality |
| SUBMISSION TYPE: | Amendment/Modification |
| ACTION: | APPROVAL/VERIFICATION OF EXEMPT STATUS |
| DECISION DATE: | December 15, 2014 |

Thank you for your submission of Amendment/Modification materials for this project. The University of Northern Colorado (UNCO) IRB approves this project and verifies its status as EXEMPT according to federal IRB regulations.

**Hello Paul,**

**Thank you for your modifications. You are approved to conduct your study.**

**Sincerely,**

**Nancy White, PhD, IRB Co-Chair**

We will retain a copy of this correspondence within our records for a duration of 4 years.

If you have any questions, please contact Sherry May at 970-351-1910 or Sherry.May@unco.edu. Please include your project title and reference number in all correspondence with this committee.

This letter has been electronically signed in accordance with all applicable regulations, and a copy is retained within University of Northern Colorado (UNCO) IRB's records.