A Mixed Methods Study of Sexual Health Education for Students with Disabilities

A dissertation submitted in partial fulfillment of the requirements for the degree of Doctor of Philosophy in Education

by

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Abstract

This convergent parallel mixed methods study explores the knowledge and preparation of general and special education teachers regarding the sexual health education for students with disabilities. People with disabilities experience the highest rates of mental, emotional, physical, and sexual abuse. Although numerous resources have been created to help improve the sexual health of people with disabilities, one major problem is access to sexual health information and education. Barriers to access directly concerning teachers include lack of teacher training programs and lack of teacher knowledge resulting in teacher concern, anxiety, and fear. The Sexual Health Education and Disability (SHED) teacher knowledge instrument was created for this study based on the sexual health education standards set forth by the ongoing Future of Sex Education Initiative. Licensed elementary, secondary, and special education teachers completed the SHED teacher knowledge instrument. This is the first study to compare teacher sexual health knowledge and preparation by license type, between students with and without disabilities, and across disability categories in relation to these sexual health education standards.

The quantitative research findings show that teachers are neither prepared nor knowledgeable to teach sexual health education regardless of license type or demographic category within each component of the SHED teacher knowledge inventory. The qualitative research findings show that most teachers’ desire more training and knowledge, exhibit fear and concern for themselves, their students with and without disabilities, and support the inclusive practice of teaching comprehensive sexual health education regardless of disability. A minority of teachers do not support inclusive
practice concerning sexual health education, do not want sexual health education within
the school system, and believe strongly in abstinence-only sexual health education. The
significant differences found between license type and demographic characteristics were
integrated with the qualitative findings.

The mixed method data integration results included teachers support and concern
for the inclusion of students with disabilities despite low scores in the disability content
knowledge and preparation questions. Special education teachers demonstrated the
highest level of concern for students with disabilities, yet had low knowledge and
preparation scores for teaching sexual health education. There is an inverse relationship
between low knowledge and preparation scores and desire to attain the knowledge that is
evidence-based to teach students with and without disabilities sexual health education.
The results confirm previous study’s demonstration of barriers to access for students with
and without disabilities and the need for systemic change. The need for systemic change
to improve access aligns with critical disability theory. General and special education
teachers need comprehensive sexual health education training in order to teach the
essential sexual health knowledge to students with and without disabilities.
Dedication

One life
Given by two
My parents – My heroes
John Frances Xavier Treacy
Daddy-O, Best Friend, Editor, and Teacher
Linda Ann Carrasco Treacy
Mama, Best Friend, Nurturer, and Healer
Through hard times
Through good times
The two never faltered
Guiding lights
Safety nets
The one dissertation
By me
Is dedicated to the two of you

My partner
Christopher Ryan McArthur
Love and loyalty true
Laughter and silliness with you
Keeping me grounded through and through
Stronger
We won’t give up
We won’t give in
This is also dedicated to you

My children
Lilly Isis Anna McArthur
John Patrick McArthur
Timothy Ryan McArthur
“Mom, you need to write your dissertation!!”
“Mom, are you finished yet?”
“Mom, will I ever get to use the computer?”
Motivation
Boundless love
Yes, you are my all my favorite!
I love you to infinity and beyond
This dissertation is dedicated to each of you

For Karen McFawn
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A Mixed Method Study of Sexual Health Education for Students with Disabilities

Chapter One: Introduction

“Young people with disabilities are no different from other kids in their need to understand their bodies and relationships: they, too, need to understand how their bodies work, and may have romantic longings and sexual interests” (University of Michigan Health System – Your Child, 2010, p. 1).

Overview

Sexuality is part of the human experience, yet sexual health is often ignored, especially in regard to persons with disabilities (Alriksson-Schmidt, Armour, & Thibadeau, 2010; AVERT, 2014, 2016; Murphy & Elias, 2006; Sexuality Information and Education Council of the United States [SIECUS], 2012, 2014, 2015b; Skarbek, Hahn & Parrish, 2009; Swango-Wilson, 2010; WHO, 1975, 2006). People with disabilities and their loved ones have had to fight for social justice and civil rights. That struggle lead to legislation protecting the rights of people with disabilities (Gargiulo, 2015). As a result, our society has experienced profound changes and benefits regarding the treatment, healthcare, and education of people with disabilities. Nevertheless, the fight for social justice and civil rights for people with disabilities has continued. One battlefield in which this fight continues is sexual health education.

Problem Statement

People with disabilities have faced and endured a long history of exploitation, maltreatment, and injustice (Bruinius, 2006; Sullivan & Knutson, 2000). With the advancement of social justice, people with disabilities and their families have worked to pass laws protecting their rights (American with Disabilities Act [ADA], 1990; Individual

Unfortunately, people with disabilities still experience the highest rates of mental, emotional, physical, and sexual abuse (Center for Disease Control and Prevention [CDC], 2015; Sullivan & Knutson, 2000; Swango-Wilson, 2010).

Many adolescents with disabilities lack the knowledge needed to develop a healthy sexual identity (Baladerian, Coleman, & Stream, 2013; Boehning, 2006; Preston, 2013; SEICUS, 2014). Due to the lack of knowledge regarding sexual health education students with disabilities are at risk of sexual abuse and exploitation, unwanted pregnancies, and sexually transmitted diseases (Baladerian, et al., 2013; Boehning, 2006; Preston, 2013; Wilkenfeld & Ballan, 2011; SIECUS, 2015a). Although numerous resources have been created to help improve the sexual health of people with disabilities (Advocates for Youth, 2006; Massachusetts Department of Public Health [MDPH] & Massachusetts Department of Developmental Services [MDDS], 2014; SIECUS, 2012; University of Michigan Health System, 2010), one major problem is access to sexual health information and education (Attwood, Henault, & Dubin, 2014; Boehning, 2006; Barnard-Brak, Schmidt, Chesnut, Wei, and Richman, 2014; Travers & Tincani, 2010; Wehman, 2008, 2012). Students with disabilities who need this education rarely have access to the resources, nor are they aware of the existence of these types of resources (Attwood et al., 2014; Boehning, 2006; Barnard-Brak et al., 2014; Harader, Fullwood, Hawthorne, 2009; Murphy & Elias, 2006; Travers, Tincani, Whitby, & Boutot, 2014; Wehman, 2012). In a National longitudinal transition study looking at predictors to receiving sexual health education Barnard-Brak, Schmidt, Chesnut, Wei, and Richman
found that as the severity of a disability increases access to sexual health education decreases (2014).

The research indicates that there are seven leading barriers hindering the access of sexual health education to students with and without disabilities. These seven barriers are:

- The lack of teacher education programs specifically in regard to sexual health education (Attwood, Henault, & Dubin, 2014; Goldman & Coleman, 2013; Klein & Breck, 2010; Preston, 2013; Wilkenfeld & Ballan, 2011; Travers et al., 2014);

- The lack of teacher knowledge and confidence increasing concern, anxiety, and fear regarding sexual health education (Barnard-Brak et al., 2014; Eisenberg, Madsen, Oliphant, Sieving, & Resnick, 2010; Eisenberg, Madsen, Oliphant, & Sieving, 2013; Rohleder, 2010; Wilkenfeld & Ballan, 2011);

- The effect of parental concerns, anxiety, and fear (Barnard-Brak et al., 2014; Eisenberg et al., 2013; Kok & Akyuz, 2015; Rohleder, 2010; Suter, McCracken, & Calem, 2009);

- The need for school/teacher and parent partnership to effectively teach sexual health education (Goldman & Coleman, 2013; Kok & Akyuz, 2015; Travers & Tincani, 2010);

- The lack of the implementation of valid and reliable sexual health education with standards guiding development, implementation, and
evaluation (Grievo, McLaren, & Lindsay, 2007; Eisenberg et al., 2010; Future of Sex Education [FoSE], 2012; Preston 2013);

- The lack of federal funding supporting programs specifically designed for students with disabilities based on comprehensive sexual health education (Advocates for Youth, 2014; Eisenberg et al., 2013; Kirby, Coyle, Forrest, Rolleri, & Robin, 2011; SIECUS, 2015b, 2016);

- The socialized context of the sexuality of students with a disability as deviant (Erevelles, 2011; Morgan, Mancl, Kaffar, & Ferreira, 2011; Travers & Tincani, 2010; Travers et al., 2014).

Murphy and Elias (2006) report several statistics highlighting the increased level of vulnerability to abuse partially due to lack of comprehensive sex education geared toward people with disabilities. The U.S. Department of Justice reports the significantly high rate of vulnerability at 68% to 83% for women with developmental disabilities, who are sexually assaulted in their lifetimes, and the fact that less than half of them will seek assistance from legal or treatment services (Murphy & Elias, 2006, p. 400). A study of approximately 55,000 children in Nebraska found that children with intellectual disabilities were 4.0 times as likely as children without disabilities to be sexually abused (Sullivan & Knutson, 2000). Skarbek et al. (2009) report that children with disabilities are 3.4 times more likely to be sexually abused than their non-disabled peers. In 2010, Alriksson-Schmidt, Armour, and Thibadeau conducted a study with women that have physical disabilities, who had experienced sexual violence. These researchers found that adolescent girls with physical disabilities or long-term health problems are at increased risk for sexual violence. Students with disabilities have a significantly higher risk of
becoming victims of sexual violence (Alriksson-Schmidt et al., 2010; Harader et al., 2009; Murphy & Elias, 2006; Skarbek et al., 2009; SIECUS, 2015b). Conversely, students with disabilities who do not receive sexual health education are at risk of committing unlawful sexual acts (Attwood et al., 2014).

Child abuse has a long term negative impact on the abused child (CDC, 2015). The physical and sexual abuse of children from birth through age 17 often leads to physical, psychological, behavioral, and economic consequences that in turn lead to poor health and disability well into adulthood (CDC, 2015). Child abuse in the United States in 2008 resulted in the expenditure of 124 billion dollars (CDC, 2015). The average lifetime estimated cost in 2010 per victim in the United States of nonfatal child maltreatment is $210,012.00 (CDC, 2015; Fang, Brown, Florence, & Mercy, 2012). CDC’s new estimates show that there are about twenty million new cases of sexually transmitted infections (STIs) in the United States each year (2015). The total medical cost of treating STIs in the United States each year sixteen billion dollars (CDC, 2015).

Children, students, and adults with disabilities have the right to understand the natural functions of their bodies, and their sexuality. In order to fully protect and understand themselves they need sexual health education (Murphy & Elias, 2006; SIECUS, 2012). To help this population become self-determined individuals further research into the sexual health education of students with disabilities is essential (Attwood et al., 2014; Advocates of Youth, 2006; Grievo et al., 2007; Kirby et al., 2011; Klein & Breck, 2010; Preston, 2013).
**Identified Research Needs**

Areas of deficiencies found in the existing literature include: (a) the sexual health education needs of people with disabilities; (b) the relationship among sexual health knowledge, sexual abuse, and sexual exploitation; (c) the sexual health education of people with disabilities defined by disability category; (d) sexual health teacher education for people with disabilities; (e) the needs of licensed teachers who teach sexual health education to people with disabilities; (f) school/teacher and parent partnership to effectively teach and protect students with disabilities in regard to sexual health; (g) training programs for parents of people with disabilities regarding sexual health education; (h) valid and reliable sexual health education curricula for both the general population and for people with disabilities; (i) evaluation protocol for sexual health education programs for individuals with disabilities; and, (j) outcome studies of sexual health education programs for people with disabilities.

**Purpose of the Study**

This mixed methods study specifically addresses the knowledge and preparation of licensed teachers regarding sexual health education for students with and without disabilities. The overarching intent of the study is to utilize the results to inform the research and practice of sexual health education for people with disabilities. The study explores and assesses the knowledge of licensed general and special education teachers regarding sexual health education. The study focuses on addressing the identified research gaps and barriers to access in relation to teachers, working to enhance the knowledge base, and ultimately empower people with disabilities by improving access to sexual health education.
Summary of Study

Prior to conducting the research for this study, an instrument was developed. This section begins with an explanation of how the instrument was developed, then describes the main study.

Pilot stage. The creation of the research instrument was guided by data obtained from the literature review, which included the National Sexuality Education Standards: Core content and skills, K-12 (FoSE, 2012), an artifact analysis, and a small qualitative study (Treacy, 2014). The artifact analysis was conducted on the sexual health curriculum for general education and for special education in one urban school district. The two curricula for general education and special education were compared in order to add to the validity of the study. The small qualitative study explored the experiences of three licensed teachers who teach sexual health education to students with disabilities. The study was accomplished by collecting interview data from three licensed special education teachers in the public school system, then transcribing and coding the interviews.

Research study. A convergent parallel mixed method design was used (see Figure 1) to conduct this study. The intent of the convergent parallel mixed method research design is to merge the results of the quantitative data analysis and the qualitative data analysis to explore a problem (Creswell, 2015).

The mixed method data analysis provides a more complete understanding of the situation being studied (Creswell, 2014, 2015; Creswell & Plano-Clark, 2011). The survey instrument, with both qualitative open-ended questions and Likert-scale forced answer quantitative questions, was created and disseminated to licensed teachers. The
quantitative and qualitative data have been analyzed separately, though the results of the

![Diagram of convergent parallel mixed methods research design](image)

*Figure 1. Depiction of the convergent parallel mixed methods research design. As found in “A Concise Introduction to Mixed Methods Research” by J. W. Creswell, 2015, p. 37. Copyright 2015 by SAGE publisher.*

factor analysis conducted on the instrument influenced the coding for the qualitative analysis. The researcher analyzed the qualitative research with the assistance of a second coder to increase the credibility of the qualitative results. The quantitative and qualitative results have been reported in separate sections in Chapter 4. These results were then merged and integrated into the mixed method results, this included comparative joint displays. The displays were analyzed to determine if the quantitative results are confirmed by the qualitative results, or if there were conflicts between the data. Patterns and/or themes in the mixed method data were identified and reported.

There are no existing instruments to assess teacher knowledge and training regarding teaching sexual health education for students with disabilities. The development of the instrument was necessary (Appendix D). Findings from the small
qualitative study, the artifact analysis, and the literature review were used to develop the instrument. Specifically, data, statements/quotes, and themes from this qualitative data have helped to develop an instrument that can be utilized to further develop the hypotheses to be tested regarding the sexual health education needs of students with disabilities from the teacher’s perspective of their knowledge and preparation \((N = 130)\).

The results of this study will help to inform practice and will address identified research gaps regarding the sexual health needs of students with and without disabilities. Of the research gaps previously identified, this study seeks to address the following:

- The sexual health education needs of people with disabilities;
- The teacher education in the area of sexual health for people with disabilities;
- The needs of licensed special education teachers regarding the ability to effectively teach sexual health education to people with disabilities;
- The needs of licensed general education teachers regarding the ability to effectively teach sexual health education to people with disabilities;
- The use of valid and reliable sexual health education curricula for both the general population and for people with disabilities;

**Justification of Mixed Methods Research Study**

As the researcher began to investigate the issues surrounding sexual health education for people with disabilities, numerous complex needs emerged encompassing many aspects of our society; involving the nation’s ideologies, politics, economics, education, and family dynamics. The complexity of these needs and the research questions that arose demanded utilization of a mixed methods research design.
There is a need for further research into the sexual health needs of students with disabilities and the needs of the sexual health education teachers (Grievo et al., 2006; Kirby et al., 2011; Klein & Breck, 2010; Preston, 2013). Using a mixed method approach allows for the development of a more complete and in-depth understanding of the sexual health needs of students with disabilities and the knowledge and training of their teachers (Creswell, 2015). The study is a convergent parallel mixed methods design. The purpose of this design is to merge both quantitative and qualitative data (Creswell, 2015; Creswell & Plano-Clark, 2011). The quantitative and qualitative data were integrated and inferences discussed. In order to answer the proposed research questions, the development of a new instrument was necessary.

Using a mixed methods research (MMR) design was needed to fully address the purposed research questions. Deficiencies in the literature call for a convergent mixed method design to develop a complete understanding by collecting both quantitative and qualitative data, because each research method only provides a partial view of the issues (Creswell & Plano-Clark, 2011). The integration of quantitative and qualitative data has been shown to lead to the development of relevant instruments and interventions (Creswell, 2014, 2015; Ivankova, 2015). The researcher intends to utilize the results of this study to build further mixed method research designs with the intention of creating interventions and relevant curricula.

**Philosophical and Theoretical Foundations**

The following section defines the philosophical foundations and theoretical framework utilized in this study. First, the philosophical foundations for MMR will be discussed and explained. Next, the researcher’s philosophical foundation will be defined.
Then, a theoretical framework will be defined. Finally, the guiding theoretical framework for this study will be explored.

**Philosophical.**

Mixed methods research is often criticized for a lack of concern regarding the philosophical foundations for MMR (Lincoln, 2010; Onwuegbuzie & Frels, 2013; Yancher & William, 2006). Yet, these claims have remained unsubstantiated (Onwuegbuzie & Frels, 2013; Mertens, 2012). Mertens (2012) states that the field of MMR is packed with discussions and debates regarding philosophical foundations and paradigms (p. 255).

There are several philosophies that mixed method researchers adhere to when looking to support the philosophical foundations of social inquiry. The three most common philosophies utilized in MMR include pragmatism, critical realism, and dialectic pluralism (Creswell, 2015; Tashakkori & Teddlie, 2010).

Dialectic pluralism encourages a mixing of ideologies and methods, essentially a “mixed way of thinking” and viewing the world (Green, 2007). This philosophy is based in accepting the importance of integrating different philosophical traditions, as Greene states, “multiple ways of seeing and hearing, multiple ways of making sense of the social world, and multiple standpoints on what is important and to be valued and cherished” (2007, p. 20). As a philosophical standpoint, dialectic pluralism is ideal when working to comprehend the complex human interactions studied throughout the social sciences (Greene & Hall, 2010).

Pragmatism essentially states that knowledge is attained through action, hence knowledge can provide us with possible connections between actions and consequences
Pragmatism can provide philosophical support for MMR, but it is limited in its ability to serve as an epistemological paradigm (Biesta, 2010; Creswell & Plano-Clark, 2011). Pragmatism can be used to provide a different starting point regarding knowledge to support MMR. There is a broad consensus on the use of pragmatism as a rationale to support the use of MMR (Biesta, 2010; Caruth, 2013; Johnson et al., 2007; Lund, 2012; Teddlie & Tashakkori, 2009). Everyday pragmatism as a justification for MMR is not problematic (Biesta, 2010). That is, pragmatism can serve as a bridge that connects realist assumptions to the outcome of our actions through intervention (Teddlie & Tashakkori, 2010). This knowledge can be derived either qualitatively or quantitatively; that is, knowledge as being attained through interactions/transactions. Thus, knowledge is a moving whole of interacting parts. The method of attaining the knowledge is not a concern. Pragmatism in this sense helps to nullify the epistemological dichotomies between quantitative and qualitative research in regard to the attainment of knowledge (Biesta, 2010; Caruth, 2013; Creswell & Plano-Clark, 2011; Johnson et al., 2007; Teddlie & Tashakkori, 2010).

Critical realism is a mix of critical theory and social scientific realism (Bhaskar, 1997, 1998; Christ, 2011, 2013; Goff, 2004; Houston, 2001; Lipscomb, 2011; Maxwell, 2004; Maxwell & Mittapalli, 2010; McEvoy & Richards, 2006). Philosophical realism, in general, states that entities exist independently of being perceived, or independently of our theories about them (Phillips, 1987, p. 205). There is a potential in the utilization of critical realism to promote social justice (House, 1991). Critical realism has been effectively applied to MMR studies in a variety of fields; including, accounting,
operations management, economics, political science, medicine, and nursing (Maxwell & Mittapalli, 2010, p. 160).

The researcher used the combination of pragmatism-creative realism as the philosophical foundation for this study. Pragmatism-creative realism is a combination of the philosophies of pragmatism and creative realism (Johnson and Duberly, 2000). The researcher views the attainment of knowledge through action and perception, which can lead to understanding a world that independently exists. The complexity of the world and humanity is more likely to be understood by integrating the methods and theories regarding research and practice. The researcher’s philosophical background, the purpose of the study, and the research questions fit with a combination of pragmatism and critical realism as a philosophical foundation.

Theoretical. Critical Disability Theory

Theoretical frameworks differ from philosophical foundations (Teddlie & Tashakkori, 2010). A theoretical framework “operates at a different level of abstraction than philosophical considerations” (p. 5) and is a “unified, systematic explanation of a diverse range of social phenomena” (Schwandt, 1997, p. 54). The unified, systematic theoretical framework used in this study is critical disability theory (CDT), which arose out of the need to promote social justice for people with disabilities (Devlin and Pothier, 2006).

Critical disability theory originated out of critical theory (Hosking, 2008), and disability studies (Meekosha & Shuttleworth, 2009). Critical theory originated in 1937 in the Frankfurt School in Frankfurt, Germany (Hosking, 2008). Since that time, critical theory has developed numerous variations, but the essence of each variation of the theory
is expected to align with the expectation that, “it must explain what is wrong with current social reality, identify the actors to change it, and provide both clear norms for criticism and achievable practical goals for social transformation” (Bohman, 2007; Hosking, 2008, p. 3). Disability studies, is considered to be a relatively new field that has similarities and ties to women’s studies, black studies, and queer studies; and, can be traced back to the 1970’s, with the increased awareness of civil rights issues and problems for people with disabilities (Meekosha & Shuttleworth, 2009). The term ‘critical disability theory’ has been increasingly used in academic publications over the past decade (Devlin & Pothier, 2006; Meekosha & Shuttleworth, 2009).

The principles of critical disability, as defined by Hosking include (2008, p. 7):

1. Disability is a social construct, not the inevitable consequence of impairment.
2. Disability is best characterized as a complex interrelationship between impairment, individual response to impairment, and the social environment.
3. The social disadvantage experienced by people with disabilities is caused by the physical, institutional and attitudinal (together, the ‘social’) environment which fails to meet the needs of people who do not match the social expectation of normalcy.

After the results for the quantitative, qualitative data, and mixed method integration were analyzed, the theory of Critical Disability Theory was overlaid to see if the results aligned, misaligned, and/or did or did not support CDT. This approach to using a theory within a study diverges from the norm. Though CDT is defined as a theoretical framework, the theory was not used as a guiding framework during implementation, development, or analysis of the study. Instead the theory was compared
to the findings. This comparison allowed the researcher to determine how this study’s results converge, diverge, and/or inform CDT.

Definitions of Terms

_Civil rights:_ A civil right is an enforceable right or privilege, which if interfered with by another gives rise to an action for injury. Discrimination occurs when the civil rights of an individual are denied or interfered with because of their membership in a particular group or class. Various jurisdictions have enacted statutes to prevent discrimination based on a person’s race, sex, religion, age, previous condition of servitude, physical limitation, national origin, and in some instances sexual orientation (Cornell University Law School, 2015).

The most important expansions of civil rights in the United States occurred as a result of the enactment of the Thirteenth and Fourteenth Amendments to the U.S. Constitution (U.S. Const. amend. XIII; U.S. Const. amend IV).

_Critical disability theory:_ Critical disability theory emphasizes the certainty of difference. That is, it demands the reorganization of our society’s basic social institutions. The theory challenges the assumptions of sameness and assimilation. Critical disability theory stresses a reconceptualization of the nature of, and the lived relationships among the citizen, the self, and the community, as well as a reconceptualization that transforms the basic assumptions of contemporary philosophy, politics, policy, and law (Devlin and Pothier, 2006, p.20).

_Mixed method research (MMR):_ Mixed method research (MMR) is defined as: the type of research in which a researcher combines elements of qualitative and
quantitative research methods for the purposes of breadth and depth of understanding (Johnson, Onwuegbuzie, & Turner, 2007, p. 123).

**Self-determination:** Self-determination includes an individual’s ability to choose, make decisions, and solve problems. This includes: self-awareness and self-knowledge; goal setting and attainment skills; independence, risk-taking and safety skills; self-observation, evaluation, and reinforcement; self-instruction, self-advocacy, leadership skills; internal locus of control; and, positive attributions of efficacy & outcome expectancy (Wehman, 2012).

**Sex education:** Sex education or sexual health education is the teaching of issues relating to human sexuality including human sexual anatomy, sexual reproduction, sexual intercourse or other sexual activity, reproductive health, emotional relations, reproductive rights and responsibilities, abstinence and birth control. Common avenues for sexual health education are utilization of parents or caregivers, formal school programs, and public health campaigns (Sex education, Merriam-Webster’s online dictionary, 2014)

There are two different forms of sexual health education. One is abstinence based sexual health education and the other is comprehensive sexual health education. Currently, there is an ongoing contentious debate regarding the use of comprehensive sexual health education versus abstinence based sexual health education (AVERT, 2014; SIECUS, 2014).

**Abstinence based sexual health education:** These educational programs endeavor to persuade adolescents to abstain from sexual activity until they are married. Abstinence based sexual health education has an eight-point definition in the law as an educational or
motivational program as defined by the Department of Health and Human Services in a 2014 report on Section 510(b) of Title V of the Social Security Act, P.L. 104-193.

*Comprehensive sexual health education:* These educational programs address the root issues that help teens make responsible decisions to keep them safe and healthy. These programs use a holistic approach to provide young people with complete, accurate, and age-appropriate sex education that helps them reduce their risk of HIV/AIDS, other sexually transmitted infections (STIs), and unintended pregnancy (SIECUS, 2014).

*Sexuality:* A central aspect of being human throughout life encompasses sex, gender identities and roles, sexual orientation, eroticism, pleasure, intimacy, and reproduction. Sexuality is experienced and expressed in thoughts, fantasies, desires, beliefs, attitudes, values, behaviors, practices, roles, and relationships. While sexuality can include all of these dimensions, not all of them are always experienced or expressed. Sexuality is influenced by the interaction of biological, psychological, social, economic, political, cultural, legal, historical, religious, and spiritual factors (World Health Organization, 2006, p.5).

*Social justice:* Social justice assures the protection of equal access to liberties, rights, and opportunities, as well as taking care of the least advantaged members of society (Rawls, 2003).

**Summary**

Chapter 1 introduced and defended the problem. The use of a mixed method research design as a viable and necessary method to study the problem was defended. The summary of the research design was provided and the significance of the study defined. Chapter 2 will provide a thorough literature review and background.
Chapter Two: Review of Literature

Overview

Chapter 2 contains a thorough review of existing literature regarding the use of mixed method research and sexual health education for people with disabilities. The capacity to understand the present situation, social injustices, civil rights violations, and agendas regarding this topic entails a journey through the history, background, political, and ideological components that have, and continue to, influence the citizens of our country. Through this journey, the barriers that students and people with disabilities face regarding access to sexual health through sexual health education will become evident.

Mixed Methods Research (MMR)

Mixed method research (MMR) is defined as, “… the type of research in which a researcher or team of researchers combines elements of qualitative and quantitative research approaches for the purposes of breadth and depth of understanding and corroboration” (Johnson, Onwuegbuzie, & Turner, 2007, p. 123). John Creswell, an authoritative mixed methods author, defines MMR in his 2015 book A Concise Introduction to Mixed Methods Research as (p. 2):

An approach to research in the social, behavioral, and health sciences in which the investigator gathers both quantitative (closed-ended) and qualitative (open-ended) data, integrates the two, and then draws interpretations based on the combined strengths of both sets of data to understand research problems.

MMR is an emerging research field that is rapidly attaining credibility nationally and internationally within the fields of public health, medicine, social and behavioral research, and education (Caruth, 2013; Creswell, 2015; Lund, 2012; Niaz, 2008;
The benefits of utilizing MMR, when working with students with exceptionalities, are already proving to be valuable to researchers, administrators, practitioners, families, and students, because they allow the researchers to gain a more complex understanding of the human experience (Abernathy & Taylor, 2009; Creswell, 2015; Klinger & Boardman, 2011; Leech, Collins, Jiao, & Onwuegbuzie, 2011).

One of the most important aspects of understanding MMR is to understand that it is not simply the conducting of both a qualitative and a quantitative study, and then reporting the results of each study (Creswell & Plano-Clark, 2011; Johnson et al., 2007; Ivankova, 2015). The aspect that distinguishes MMR is the integration of quantitative and qualitative data in order to analyze patterns (Creswell, 2015). The following aspects distinguish an MMR study: (a) the research question needs to hold a rationale for conducting MMR; (b) the use of rigorous methodology is mandatory in both the quantitative and the qualitative components of the study; and, (c) there must be a component in the methodology that distinctly combines or integrates the quantitative and qualitative data using one of the methodologically sound MMR designs (Bazeley, 2009; Caruth, 2013; Creswell, 2014; Ivankova, 2015; Teddlie & Tashakkori, 2009; Wheeldon, 2010).

**How is MMR being utilized in the field of special education?**

Although there have been successful MMR studies conducted within the field of special education and with students in various disabilities categories throughout the nation, MMR remains the least common research design within the field (Klinger & Boardman, 2011; Taylor & Abernathy, 2016). MMR is slowly beginning to be utilized
and endorsed by researchers in special education (Collins, Onwuegbuzie, & Sutton, 2006; Klinger & Boardman, 2011; Leech et al., 2011; Abernathy & Taylor, 2009), but to a lesser degree than other social sciences, including public health (Collins et al., 2006). Special education is rooted in laws that mandate evidence-based practices that are the results of quantitative and experimental research (Collins et al., 2006; Taylor & Abernathy, 2016). The tradition of and attachment to experimental research may be an obstacle to the utilization of MMR for many researchers in special education (Collins et al., 2006; Taylor & Abernathy, 2016).

The special education researchers that are utilizing MMR are doing so for a myriad of reasons including: teaching education (Abernathy & Taylor, 2009); program evaluation; disproportionate representation (Klinger & Boardman, 2011); and, prevalence studies (Leech et al., 2011). Special education researchers who have used MMR have reported favorable results, reporting that MMR is well suited to address the complex issues found within today’s profoundly diverse classroom (Klinger & Boardman, 2011; Taylor, 2014). Leech and her colleagues argue for the use of MMR, stating, “It is time to reverse the trend in the number of mixed method publications” (2011, p. 871).

**What is the history of MMR?**

There are many important reasons for an emerging mixed methods researcher to become familiar and comfortable with the history of MMR. A mixed methods researcher should understand the historical foundation of the methodology of MMR, because this knowledge is necessary to justify the methods for sampling, data collection, and data analysis; essential to justify the use and need for MMR (Benge, Onweugbuzie, & Robbins, 2012; Collins, Onwuegbuzie, & Johnson, 2012; Creswell, 2015). As a mixed
methods researcher, it is very likely that the research will be criticized by both qualitative and quantitative researchers (Johnson, 2012; Teddlie & Tashakkori, 2009). In addition, mixed methods researchers must understand their own personal epistemology, ontology, and axiology; that is, their own philosophical foundations in order to frame their research questions and research agenda within this foundation (Biesta, 2010; Benge, Onweugbuzie, & Robbins, 2012; Creswell, 2014, 2015; Teddlie & Tashakkori, 2010). Finally, the mixed methods researcher needs to understand the inductive-deductive research cycle. To comprehend this cycle the researcher must possess awareness of the historical basis of this cycle (Teddlie & Tashakkori, 2009).

Another important reason to understand the origins of this method is to gain a better understanding of the theoretical and philosophical foundations that are needed to frame research and enhance the justification for this type of research (Alise & Teddlie, 2010; Caruth, 2013; Creswell, 2015; Johnson et al., 2007).

**Sexual Health Education for the General Population**

The broad definition of sexual health education encompassing all of an individual’s experiences, both inside and outside of a classroom, would include references to history, literature, art, religion, culture, and philosophy.

**Historical review of sexual health education.**

Based on the aforementioned definition, recorded history indicates that mankind has consistently communicated with each other about their sexuality and taught each other about sex. Ancient history chronicles several sexual health education manuscripts. These include the Kahun Papyrus from 1900 B.C. from ancient Egypt (Cornog & Perpe, 1996), and several Chinese texts estimated to be dating from 300-500 B.C. (Ruan, 1991).
Moving from ancient history to the past 2100 years, that is, from B.C. to A.D., the first text to emerge in A.D. was the *Kama Sutra*. The popular Indian *Kama Sutra* was estimated to be written between 0 through 600 A.D. (Fraser, 1972). *Kama* means to love, desire, or lust, and *sutra* means teachings and verses (Vatsyayana & Burton, 2006). *The Perfumed Garden of Sensual Delight* (al-rawd al-‘atir fi nuzhati’l khatir) was written in 1400 A.D by Muhammad ibn Muhammad al-Nafzawi is a sex manual, as well as a work of erotic literature. The book is regarded as the Arabic *Kama Sutra* (Nafzawi, 2013). The book was translated into English in 1886 by Sir Richard Francis Burton and is still widely published and distributed (Nafzawi, 2013).

During the 1680s in London a book appeared that became the most popular sex education resource for over 200 years (Cornog & Perper, 1996). The book was published under different names for over 200 years throughout Europe, eventually making its way to the United States in the 1800s (1996). Though Aristotle was not the author, the book was published under the following titles: *The Works of Aristotle the Famous Philosopher in Four Parts*, *Aristotle’s Masterpiece*, and *Aristotle’s Last Legacy*. The book celebrates sexuality and the joy of sex while accurately educating the reader about sexual anatomy, function, and reproduction (1996).

At the dawn of the Renaissance period and with the printing of the first modern textbook on anatomy by Vesalius in 1543, physicians began to develop theories regarding sexual maladies that became separated from witchcraft, demons, and sin (Cornog & Perper, 1996; Fraser, 1972). As time moved on, the influence of science and medicine on sex education were paradoxical. The paradox has resulted in the current state of affairs regarding sexual health education within the United States. One interpretation of
sexuality has a negative or degenerative connotation and has developed simultaneously to the second interpretation of sexuality that has a positive connotation. These diverging interpretations illustrate the paradox. For the basis of this research, the history of interpreting sexuality with a negative connotation will be explored in answering the question regarding the history of abstinence-based sexual health education. The history of interpreting sexuality with a positive connotation will be explored in answering the question regarding the history of comprehensive-based sexual health education.

**What is the history of abstinence based sexual health education?**

The efforts to reform sexual evils within the United States and England are connected to the creation of *Onania* in 1724, whose title refers to Onan in the Bible and the sin of wasting man’s seed (Cornog & Perper, 1996; Fraser, 1972). Historians (Cornog & Perper, 1996; Fraser, 1972) link this work to the following: creation of societal norms and laws against masturbation, oral sex, and sex as sin against God, as known in the Bible, unless performed solely for the purpose of procreation. The link of many physical and social harms to masturbation and sexual activity including venereal disease is known as the degeneracy theory and supports efforts to purify society of moral disorders and eradicate sexual excess (Cornog & Perper, 1996; Fraser, 1972). The sex phobia trend in the United States spread throughout the centuries beginning with *Onania* and was exacerbated by and interwoven into religion, politics, school, and public health during the Victorian era in the 1800s by the U.S. social reformers Sylvester Graham and John Kellogg (Carter, 2001; Cassell & Wilson, 1989; Cornog & Perper, 1996). In 1834 Graham wrote *A Lecture to Young Men* and in 1888 Kellogg wrote *Plain Facts for Old and Young*. Both were anti-masturbation manuals, highlighting the evils of masturbation.
The fear and sex phobia trend continued throughout the 20th century and is still part of the foundation of the culture, law, politics, values, and norms within the United States. This ideology led to the first federal funding initiatives for sex education in the early 1980s (Advocates for Youth, 2014). The first funding stream, in 1982, began with the Adolescent Family Life Act, under Title XX of the Public Health Service Act, which distributed funds for the counseling of adolescents on the perils of premarital sex and the preference for adoption over abortion (Cassell & Wilson, 1989; SIECUS, 2014). The second and most significant funding stream was initiated in 1996 with the enactment of welfare reform which amended the Maternal and Child Health Block Grant and allocated $50 million a year to fund abstinence based sexual health programs (Advocate for Youth, 2014; Williams, 2006).

**What is the history of comprehensive based sexual health education?**

The Industrial Revolution in the United States (U.S.), from approximately 1760 to 1840, transformed many farming families into factory working parents and children (Cornog & Perper, 1996). The poor conditions for workers, especially children, led to the child labor laws of the late 1800s and restricted children’s economic contributions to the family (Carter, 2001; Cornog & Perper, 1996). With these restrictions larger families, once an asset, became more of a financial liability. Children needed to be looked after and educated, which called for more time and resources. The result was a greater need and interest in contraception (Carter, 2001; Cassell & Wilson, 1989).

Within the factory system an increasing awareness of sexual misfortunes and inequity began to build, leading to the first women’s rights movement. This movement carried with it the rise of writers and activists focusing on reproductive rights and
education. One such writer and activist was Mary Wollstonecraft, who, in 1792, wrote *A Vindication of Rights of Women*. This book became popular in the U.S. and paved the way to the teaching of many working class women about their reproductive rights, job equality, and political equality (Cornog & Perper, 1996). Another such book published later in 1844 was *The United States Practical Recipe Book*. This book gave detailed directions for making condoms out of sheep intestines to prevent infection and pregnancy (Cornog & Perper, 1996).

At this time in the United States women were not allowed to vote, sign contracts, have bank accounts, or divorce abusive husbands. They could not control the number of children they had or readily obtain information about birth control, because in the 1870s, draconian measures, referred to as the Comstock Laws, made contraception illegal and declared information about family planning and contraception obscene (Carter, 2001; Cornog & Perper, 1996; Planned Parenthood, 2014).

Midwives, men and women willing to stand up for women’s rights were at the forefront of the development of comprehensive sexual health education (though not referred to as such at the time). One such women was Margaret Sanger, born in 1879, the founder of Planned Parenthood (Planned Parenthood, 2014). Margaret Sanger watched her mother die at the age of forty after having eleven children and going through eighteen pregnancies. She became a nurse for the immigrant families in New York’s Lower East Side. She witnessed the sickness, misery, and death that resulted from unwanted pregnancies and illegal abortions (Planned Parenthood, 2014). Sanger helped comprehensive sex education and family planning find its roots by taking the following actions (Cornog & Perper, 1996; Planned Parenthood, 2014):
In 1916, Sanger, her sister and their friend opened the country’s first birth control clinic in Brooklyn, New York.

In 1923, she founded The Birth Control Review, the first scientific journal devoted to contraception.

In 1923, she opened the Birth Control Clinical Research Bureau in Manhattan tasked with providing contraceptive devices to women and collecting accurate statistics to prove their safety and effectiveness.

Sanger’s work and devotion to the welfare of women and families paved the way for research into human sexuality in the United States. During the 1900s an explosion of sexual information occurred, with thousands of publications, research articles, books, and pamphlets published on the subject within the United States (Seruya, Losher, & Ellis, 1972; SIECUS, 2014). Courses in human sexuality started to be taught in institutes of higher learning in the 1940s and 1950s (Cornog & Perper, 1996; SIECUS, 2014). In 1948 and 1953 the Kinsey’s research studies were published, which inspired unparalleled publicity, discussion, and debate on topics regarding sexuality that were previously unmentionable (Cornog & Perper, 1996; SIECUS, 2014). In 1966, Masters and Johnson created the first scientific, physiological description of the sexual response (Cornog & Perper, 1996; SIECUS, 2014).

The two organizations responsible for the majority of the continuing improvement and growth of comprehensive sex education in public schools and within higher education are the Sexuality Information and Education Council of the United States (SIECUS), begun in 1964, and the American Association of Sex Educators, Counselors, and Therapists (AASECT), begun in 1967 (Cornog & Perper, 1996). SIECUS established
the National Coalition to Support Sexuality Education, which by 1994 had eighty members, including the American Library Association, the American Medical Association, the YMCA of the U.S., and the U.S. Conference of Mayors. AASECT has been a major education and credentialing body for elementary, secondary, and college level educators (SIECUS, 2014).

**The history of sexual health education in the public school system.**

Regardless of the separate ideologies, the movement for sexual health education within the public school system began during the early 1900s with a public outcry over hygiene and the belief that education regarding sanitation could help cure disease (Carter, 2001). The National Education Association (NEA) first discussed sexuality education in 1892 and passed a resolution in favor of moral education in schools (Advocates for Youth, 2008). With increased knowledge in science and medicine came the increased desire for sexual education in schools (Cassell & Wilson, 1989). During the early 1900s the following developments changed sex education: the first effective treatment of syphilis is confirmed; penicillin is discovered; and the hormones involved in the human reproductive systems are identified (Carter, 2001; Cassell & Wilson, 1989; Cornog & Perper, 1996). By the 1920s, the Bureau of Education found that 40% of U.S. school systems had a provision for social hygiene and sexuality instruction (Edson, 1922). Today, every state in the union is allocated public funds for their public school systems for the purpose of implementing sexual health education programs (SIECUS, 2014, 2015a). Sex education in the public schools was founded on social purity and moral standards compatible with the Victorian era, and by the early 1900s the movement was considered highly controversial (Carter, 2001, Cornog & Perper, 1996). Today, the
opposing ideologies remain in a contentious debate (Cornog & Perper, 1996; Hall, Sales, Komro, & Santelli, 2016; SIECUS, 2014).

**Barriers affecting sexual health education.**

A substantial amount of research has been conducted on the effectiveness of comprehensive sex education versus abstinence-based sex education. Kirby (2008) reviewed fifty-six studies assessing the impact of abstinence-based education and comprehensive-based sexual health education. Abstinence-based programs did not delay initiation of sex, nor provide any positive effects on sexual behavior (Kirby, 2008; Stanger-Hall & Hall, 2011; Trenholm, Devaney, Fortson, Quay, Wheeler, & Clark, 2007), whereas comprehensive-based sexual health education programs significantly increased the use of condoms and contraception and delayed the initiation of sex (Kirby, 2008; Trenholm et al., 2007). Kohler, Manhart, and Lafferty (2008) found that comprehensive-based sex education was associated with a 50% lower risk of teen pregnancy than abstinence-based sex education. Santelli and Kantor (2008), concluded the following:

In the case of [abstinence based sex education], politics and ideology have influenced public-health policy and undermined scientific evidence about the best approaches to prevent unwanted outcomes regarding adolescents’ sexual behavior. Science, not ideology, should shape the future of public-health prevention policies for youth. (p. 4)

The undermining of scientific evidence regarding sexual health education continues despite further advancements in the implementation, delivery, and evaluation of sexual health programs (Hall et al., 2016).
AVERT (2014, 2016) is an England based non-profit organization working to avert human immunodeficiency virus (HIV) and acquired immune deficiency syndrome (AIDS) worldwide through education, treatment, and care. AVERT asserts in their document, *Sex Education that Works*, that it is widely accepted that young people have a right to sex education (2014). This is because sex education is a means by which young people are helped to protect themselves against abuse, exploitation, unintended pregnancies, sexually transmitted diseases and HIV and AIDS (AVERT, 2014, 2016). The more knowledge young people possess regarding sexual health, the better they will be able to protect themselves. Currently, there is an ongoing contentious debate regarding the use of comprehensive sex education versus abstinence based sex education (AVERT, 2014, 2016; Hall et al., 2016; National Abstinence Education Association [NAEA], 2015; SIECUS, 2015a). However, it is clear that research supports comprehensive sex education (AVERT, 2014; Hall et al., 2016; Kirby, 2008; Kohler et al., 2008; SIECUS, 2015b; Stanger-Hall & Hall, 2011; Santelli and Kantor, 2008).

**Sexual Health Education for People with Disabilities**

The following section will review the history and relevant legislation regarding the history of sexual health education and the rights of people with disabilities. Then, the primary sexual health education resources and needs for each disability category, as defined by Individual with Disabilities Education Act (IDEA) 2004, will be reviewed. The section will conclude with a discussion of the seven barriers affecting access to sexual health education for people with disabilities.
Historical review of sexual health education for people with disabilities.

To understand the origins of sexual health education in the United States, it is necessary to explore the history of laws specific to sexuality, disability, and Title V funding. A brief review of the pertinent laws and policies provides a deeper understanding of the cultural and political barriers to providing sexual health education to students with disabilities.

Historically, students with disabilities have not been educated about their sexual health (Barnard-Brak, Schmidt, Chesnut, Wei, & Richman, 2014; Murphy & Young, 2005; Preston, 2013). The history of sex education does not include students with disabilities (Cassell & Wilson, 1989). People and students with disabilities were categorized as unfit or defective. These individuals were often institutionalized, abused, and rarely educated in reading, writing, and mathematics, let alone sexual health (Bruinius, 2006; Sanger, 1931). For the greater part of the twentieth century the eugenics movement was commonly endorsed and supported throughout the United States (Bruinius, 2006; Sanger, 1931). Eugenics was defined as the study of the improvement of the human race through genetics (Bruinius, 2006), though discredited after the German Nazis used eugenics to support their horrendous attempt to exterminate Jews, Blacks, and homosexuals (Bruinius, 2006, p. 55, 115; Cornog & Perper, 1996). During this period of time, the American Eugenics Society and U.S. eugenicists supported restriction on immigration from nations with what they viewed as inferior stock, such as Italy, Greece, and countries of Eastern Europe, arguing for the sterilization of “insane, retarded, and epileptic” citizens (Bruinius, 2006, p. 7). Surprisingly, family planning activists, who were essentially the first comprehensive sexual health educators, such as Margaret
Sanger, supported many of the principles regarding eugenics for the “unfit and feebleminded” (Bruinius, 2006, p. 59; Sanger, 1931).

In 1927, in the case of Buck v. Bell, the Supreme Court of the United States ruled to uphold a statute that instituted the “compulsory sterilization of the unfit for the protection and health of the state” (Bruinius, 2006, p. 7). The law that resulted from this decision, United States Constitutional Amendment XIV, was largely seen as an endorsement for eugenics, and an attempt to improve the human race by eliminating defectives from the gene pool (Bruinius, 2006). In 1942, the U.S. Supreme Court indirectly declared human procreation as a fundamental human right, in Skinner v. Oklahoma (American Academy of Pediatrics, 1999). This decision reversed the federal eugenics law, which had previously allowed governmental agencies and private institutions to sterilize people with disabilities, including those with mental illness (American Academy of Pediatrics, 1999). However, parents and guardians can still legally elect to have their child sterilized if they can prove just cause (American Academy of Pediatrics, 1999). In 2006, the United Nations (UN) Convention on the Rights of the Child established international recognition that all children (including those with disabilities) have both the right to have their privacy respected, and protection from exploitation and abuse (Murphy & Elias, 2006).

Students with disabilities, by law, have the same rights as their non-disabled peers (Individuals with Disabilities Education Act [IDEA], 2004; Section 504 of the Rehabilitation Act, 1973). These laws ensure equal access to schools and education for people with disabilities. The Individuals with Disabilities Education Act (IDEA), 2004 also ensures that people with disabilities will be taught using evidence-based practices.
This is relevant to sexual health education as abstinence based safer sex education is not an evidence-based practice (SIECUS, 2014).

The Center for Law and Social Policy (CLASP, 1998) notes that with the passing of the Personal Responsibility and Work Opportunity Act of 1996 fifty million dollars in public funds became available annually for abstinence based safer sex education. These funds are available through the Maternal and Child Health block grant, known as Title V (CLASP, 1998). This law effectively established abstinence based sexual education initiative for all fifty states. Individual states only receive federal funding for sexual health education if the programs they offer follow the components of Title V. In 2010, Title V was reauthorized for another five years, continuing to provide fifty million dollars per year to states in compliance with abstinence based safer sex education for students (NAEA, 2015). The implementation of abstinence based safer sex education for students with disabilities through Title V funding appears to violate IDEA (2004), as the law mandates the use of evidence-based practice when teaching students with disabilities.

Landmark legislation for people with disabilities has dramatically changed the lives of individuals with disabilities in the United States. There are now laws guaranteeing the civil rights of people with disabilities and ensure the right for children and adolescents with disabilities to receive necessary services and to be educated with their non-disabled peers (Lewis & Doorlag, 2011). These laws include (Gargiulo, 2015, p. 20):

- Public Law 93-112, the Vocational Rehabilitation Act of 1973 which applies to people of all ages and is known as the civil rights act for persons with disabilities; Section 504 prohibits discrimination against individuals with disabilities
• Public Law 94-142, the Individuals with Disabilities Act (IDEA), (formally the Education for All Handicapped Children Act of 1975), which guarantees education services to school aged children

• Public Law 99-457, the Individuals with Disabilities Act Amendments, (formally the Education for All Handicapped Children Act Amendments) of 1986 are enacted, mandating a special education for preschoolers with disabilities and incentives for providing early intervention services to infants and toddlers

• Public Law 101-336, the American with Disabilities Act of 1990 (ADA) is a comprehensive law designed to nationally mandate the elimination of discrimination against individuals with disabilities

• Public Law 101-476, the Individuals with Disabilities Education Act (IDEA) of 1990 emphasizing transition planning for adolescents with disabilities

• Public Law 105-17, The Individuals with Disabilities Education Act is reauthorized in 1997, providing a major retooling and expansion of services for students with disabilities and their families

• Public Law 107-110, the No Child Left Behind Act of 2001 is enacted, focusing on academic achievement of students and qualifications of teachers

• Public Law 108-446, The Individuals with Disabilities Education Improvement Act of 2004 (IDEA 2004) is passed, aligning IDEA legislation with provision of the No Child Left Behind Act; modifying the individualized education program process in addition to changes affecting school discipline, due process, and evaluation of student with disabilities
This legislation has provided a solid foundation for establishing the rights of students and people of all ages with disabilities. Running parallel to the progress in Civil Rights for people with disabilities is the development of sexual health education resources for people with disabilities as part of their progression toward self-determination (Kauffman, Silverberg, & Odette, 2007; MDPH & MDDS, 2014; SIECUS, 2012). The first sexual health education curricula and resources for people with disabilities began to emerge in the 1970s and the 1980s with books such as the *Sex and Disability Resource Manual* by Denise Jacobson and *Sexuality and Disability: A Bibliography* by Eschen and Hallingby. Currently, hundreds of resources are available for people with disabilities, their partners, and families to learn more about human sexuality (Advocates for Youth, 2009; Eschen & Hallingby, 1984; Kaufman, Silverberg, & Odette, 2007; MDPH & MDDS, 2014; SIECUS, 2012).

**Sexual health education resources and needs for people with disabilities by disability category.**

This section will cover the primary references and needs in the area of sexual health education for the fourteen disability categories as defined IDEA 2004. The categories are:

- Autism
- Deaf-blindness
- Deafness
- Developmental delay
- Emotional disturbance [or emotional or behavioral disorders (E/BD), as defined by the Council for Children with Behavioral Disorders (CCBD)]
• Hearing impairments
• Intellectual disability (ID)
• Multiple disabilities
• Orthopedic impairments
• Other health impairments (OHI)
• Specific learning disabilities (LD)
• Speech or language impairments
• Traumatic brain injury (TBI)
• Visual impairments including blindness

Of the above disability categories autism, intellectual disabilities, development disabilities (in adults), other health impairments, and orthopedic impairments have the greatest amount of resources available regarding the specific sexual health education needs of the disability (Boyce, 2010; SIECUS, 2012). In the following section, the disability categories will be split into high-incidence disabilities and low-incidence disabilities.

**High-incidence disabilities.**

High-incidence disabilities include emotional or behavioral disorders, mild to moderate intellectual disabilities, learning disabilities, and speech and language impairments. Approximately 94% of students with disabilities in the United States have a high-incidence disability (Salend, 2011). Of the fourteen disability categories (IDEA, 2004), there are four high-incidence disabilities including: emotional and behavioral
disorders (E/BD), referred to as emotional disturbance in IDEA 2004; specific learning disabilities; intellectual disabilities, and speech and language impairments (Salend, 2011).

_Emotional/behavioral disorders (E/BD) or emotional disturbance._ Emotional disturbance is defined in IDEA (2004) as a condition exhibiting one or more of the following characteristics over a long period of time and, to a marked degree, that adversely affects a child's educational performance:

- An inability to learn that cannot be explained by intellectual, sensory, or health factors.
- An inability to build or maintain satisfactory interpersonal relationships with peers and teachers.
- Inappropriate types of behavior or feelings under normal circumstances.
- A general pervasive mood of unhappiness or depression.
- A tendency to develop physical symptoms or fears associated with personal or school problems.

Due to the subjective wording in the IDEA 2004 definition, the Council for Children with Behavioral Disorders (CCBD) has developed an alternative definition for emotional or behavioral disorders that addresses and corrects the issues in the IDEA 2004 definition. E/BD as defined by the CCBD means a disability that is (Garguilo, 2015, p. 289):

- characterized by behavioral or emotional responses in school programs so different from appropriate age, cultural, or ethnic norms that the responses adversely affect education performance, including academic, social, vocation, and personal skills;
more than a temporary, expected response to stressful events in the environments; consistently exhibited in two different settings, at least one of which is school related, and

- unresponsive to direct intervention applied in general education, or the condition of the child is such that general education interventions would be insufficient.

There is a deficit in research pertaining to evidence based practices for academic intervention and students with emotional and behavioral disorders (Boehning, 2006; Kauffman & Landrum, 2009; Maggin, Robertson, Oliver, Hollo, & Partin, 2010; Vannest, Harrison, Temple-Harvey, Ramsey, & Parker, 2010). The lack of research regarding evidence based practices and academic interventions, most notably in a general education setting, should not be confused with the evidence based practices (EBPs) shown to be effective in helping students with E/BD manage their behavior. Positive behavioral support (PBS), functional behavior analysis (FBA), and teacher education in the field of E/BD are evidence-based practices that help students with E/BD (Kauffman & Landrum, 2009; Regan, 2009). The question becomes: Is it possible to connect the knowledge regarding E/BD and evidence-based practices to meet the needs of sexual health education? The utilization of evidence-based practices in sexual health education for people with E/BD could result in improved outcomes concerning sexual behavior, yet, there is no research supporting this hypothesis.

In the medical field, sexual health education for adults with mental health problems has been researched. Higgins, Barker, and Begley in a literature review found a total of fourteen studies, spanning from 1980 through 2005, that described or evaluated sexual health education programs for people with mental health problems (2006). The
participants in the fourteen studies were adults, and the vast majority of the studies took place in North America (2006). After extensively reviewing these studies, the researchers concluded: there were clear methodological limitations to the majority of studies; the studies challenge the view that people with mental health problems lack the skills to process and transform information into behavior; the majority of successful outcomes were due to one-on-one tailored curriculum; further research was required to improve interventions and education; the sexual welfare of people with mental health problems was a critical public health issue; and, professionals needed to act immediately to work to improve the situation (Higgins et al., 2006).

Research has become nearly non-existent as the topic of sexual health education has been narrowed down from students with disabilities to students with emotional and behavioral disorders. However, the need for effective sex education geared toward students with E/BD is evident, Kauffman (2005, pp. 358-360) states:

Early sexual activity and premature parenthood are often accompanied by emotional or behavioral disorders of both teenagers and their children.

Delinquency, sexual activity, and substance abuse are often linked activities for individuals with emotional behavioral disorders. Adolescents with psychological problems are at a particularly high risk for contracting Acquired Immunodeficiency Syndrome (AIDS) and other STDs through casual sexual encounters.

Pregnancy rates for young women with emotional disorders run as high as fifty percent, compared to the national average pregnancy rate of seventeen percent for teen women (Wisconsin Department of Public Instruction, Special Education, 2007). Young
women with mental illnesses face many risks including abusive relationships, financial and sexual exploitation, substance abuse, sexually transmitted diseases, and unexpected pregnancy (Wisconsin Department of Public Instruction, Special Education, 2007).

There is no known research linking a decrease in risky sexual behavior for students with E/BD after receiving comprehensive sex education, though there may be a correlation, as seen in the general student population (Kirby, 2008; Kohler et al., 2008).

Specific learning disabilities (LD). Specific learning disability is defined as a disorder in one or more of the basic psychological processes involved in understanding or in using language, spoken or written, that may manifest itself in an imperfect ability to listen, think, speak, read, write, spell, or to do mathematical calculations (IDEA, 2004). The term includes such conditions as perceptual disabilities, brain injury, minimal brain dysfunction, dyslexia, and developmental aphasia (Gargiulo, 2015). The term does not include learning problems that are primarily the result of visual, hearing, or motor disabilities; mental retardation; emotional disturbance; or, environmental, cultural, or economic disadvantage (IDEA, 2004).

The primary resources for sexual health education for people with learning disabilities are:

• *Sexuality, Learning Difficulties and Doing What’s Right* by Gavin Fairbairn, Denis Rowley, and Maggie Bowen (1995): This book addresses sexuality and people with learning disabilities. It explores the rights of individuals to be informed about sexuality issues, the formation of relationships, and expressing themselves sexually.

• *Sexuality and Women with Learning Disabilities* by Michelle McCarthy (1999): The author interviews women with learning disabilities and investigates their experiences with sexuality and sexual health. The majority of women interviewed reported high levels of sexual abuse and sexual activity that was not of their choice. Recommendations for policy and practice to protect this vulnerable group include education, support, and justice specific to the needs to women and children with learning disabilities.

The research regarding sexual health education and people with learning disabilities is sparse (SIECUS, 2012), with the majority of studies being conducted outside the United States (Rohleder & Swartz, 2009). Classification of disabilities categories change depending on the country in which the research is conducted. For instance, in South Africa the term intellectual disability is used interchangeably with the term learning disability (2009). Rohleder and Swartz conducted a qualitative study in South Africa examining people with learning disabilities and sexual health education and found that there was evidence of “tension between a human’s right to sexual health education and the need to restrict sexual activity for… people with learning disabilities” (2009, p.605). It is unclear if the individuals in this study would have been diagnosed in the United States with a learning disability or an intellectual disability.
Intellectual disabilities (ID). Intellectual disability is defined as significantly sub-average general intellectual functioning, existing concurrently with deficits in adaptive behavior and manifested during the developmental period that adversely affects a child's educational performance (IDEA, 2004).

The primary resources for sexual health education for people with intellectual disabilities are:

- **Ethical Dilemmas: Sexuality and Developmental Disability** by Dorothy Griffins, Debbie Richards, Paul Federoff, and Shelley L. Watson (2002): This book addresses the ethical issues relating to sexuality and developmental disabilities, including consent to sexual relationships, sterilization, birth control, and sexual offenses.

- **Sexuality: Your Sons and Daughters with Intellectual Disabilities** by Karin Melber Schwier and Dave Hingsburger (2000): This book provides information for parents and caregivers to help with their children (at any age or ability) to empower them to recognize and respond to abuse, increase self-esteem, develop lifelong relationships, and encourage appropriate behavior.

- **Teaching Children with Down Syndrome About their Bodies, Boundaries, and Sexuality** by Terri Couwenhoven (2007): This book provides parents of children with Down syndrome guidance regarding how to initiate conversations about sexuality; including, topics focusing on personal space, understanding gender identity, appropriate levels of affection, and preventing sexual abuse.

- **Take 3 Steps to Women’s Health! A Workbook for Women with Developmental Disabilities** by Jacily E. Fricks and Lucille Martin Duguay (2010): The
workbook provides essential health information and takes the mystery out of the routine breast and pelvic screenings.


The research and resources for the sexual health education of people with intellectual disabilities is often conducted with populations that include both people with intellectual disabilities (ID) and people with development disabilities (DD). Some studies have referred to the population as intellectual and developmental disabilities (IDD or ID/DD) (Friedman, Arnold, Owen, & Sandman, 2014; Sinclair, Unruh, Lindstorm, & Scanlon, 2015; Swango-Wilson, 2011).

There are numerous research studies and resources on the sexual health education for people with intellectual and developmental disabilities (Boyce, 2010; SIECUS, 2012; Sinclair et al., 2015). Studies conducted on the subject of sexual health education for people with ID/DD are limited in the lack of generalizability. Despite the limitations, researchers conclude that there are two main areas of concern (Friedman et al., 2014; Sinclair et al., 2015; Swango-Wilson, 2011). These two areas of concern are: 1.) The barriers to accessing the sexual health education curriculum for people with ID/DD; and, 2.) The lack of formal evaluation (tests for validity and reliability) of the sexual health education curricula for people with ID/DD.

*Speech or language impairments.* Speech and language impairments are defined as a communication disorder, such as stuttering, impaired articulation, a language
impairment, or a voice impairment, that adversely affects a child's educational performance (IDEA, 2004, Section 300.8).

**Low-incidence disabilities.**

Low-incidence disabilities are defined as disabilities with an expected incidence rate within the public school system of less than one percent of the total statewide enrollment in kindergarten through twelfth grade (Hallahan, Kauffman, & Pullen, 2012). Gage, Lierheimer, and Goran (2012) state that students with high-functioning autism and attention-deficit hyperactivity disorder (ADHD) are identified at higher rates and occupy a growing aggregate category moving into high-incidence disabilities. Within the next few years autism and ADHD categories will likely move into the category of high-incidence disabilities. For the purposes of this study, these two categories will remain listed as low-incidence disabilities. Low-incidence disabilities include: autism spectrum disorder; deaf-blindness; hearing impairments, including deafness; multiple disabilities; orthopedic disabilities; other health impairments; traumatic brain injury; and visual impairments, including blindness.

**Autism spectrum disorder (ASD).** Autism spectrum disorder is defined as a developmental disability significantly affecting verbal and nonverbal communication and social interaction, generally evident before age three that adversely affects educational performance (IDEA, Section 300.8, 2004). Characteristics often associated with autism are engaging in repetitive activities and stereotyped movements, resistance to changes in daily routines or the environment, and unusual responses to sensory experiences (Gargiulo, 2015). The term autism does not apply if the child's educational performance
is adversely affected primarily because the child has emotional disturbance, as defined above (IDEA, 2004).

Primary resources for sexual health education for ASD:

- *Autism-Asperger’s and Sexuality: Puberty and Beyond* by Jerry Newport and Mary Newport (2002): This book is written for adolescents and young adults with ASD. This book is designed by the authors to fill in any knowledge gaps regarding sexuality and relationships.

- *Intimate Relationships and Sexual Health: A Curriculum for Teaching Adolescent/Adults with High-Functioning Autism Spectrum Disorders and Other Social Challenges* by Catherine Davies and Melissa Dubies (2011): This curriculum provides current resources on sexuality tailored to the unique characteristics of high-functioning adolescents and adults on the spectrum.

- *Sex Education for Parents of Children with Autism Spectrum Disorder* by Mark Steege and Shannon L. Peck (2002): This is a manual designed to give parents assistance in their efforts to educate their children about their emerging sexuality in explicit and sensitive ways; addressing general and common anxieties parents have in terms of discussing sexuality with their children with ASD.

- *Sexuality and Severe Autism: A Practical Guide for Parents, Caregivers, and Health Educators* by Kate Reynolds (2014): This book is bulleted throughout with clear, explicit activities and information expanding on research within the fields of Autism and Sexual Health Education to help guide sexuality health education for students with severe autism.
• *Take Care of Myself: A Healthy Hygiene, Puberty and Personal Curriculum for Young People with Autism* by Mary Wrobel (2003): This book is written to help parents teach sexual hygiene to children with autism with the goal of fostering good habits that sustain wellness and independence.

• *The Autism Spectrum, Sexuality and the Law: What every parent and professional needs to know* by Tony Attwood, Isabelle Henault, and Nick Dubin (2014): This book is based upon the experiences of co-author Nick Dubin. It examines how the ASD profile affects psychosexual development, legalities of behavior, and includes advice on how to help people on the spectrum better understand sexuality.

• *Unwritten Rules of Social Relationships: Decoding Social Mysteries through the Unique Perspectives of Autism* by Temple Grandin and Sean Barron (2005): This book was written as a guide for social relationships and was written by two individuals with autism.

• *Sexuality and Autism: Resources*: This is a web page with an excellent list of resources for parents and was designed to help their children with autism learn about sexuality, [http://www.child-autism-parent-cafe.com/sexuality-and-autism.html](http://www.child-autism-parent-cafe.com/sexuality-and-autism.html).

Students with ASD need access to explicit instruction, picture cues, and concrete (non-abstract) descriptions (Garguilo, 2015; Lewis & Doorlag, 2011) to successfully master the curricula and social expectations in the general education classroom. Students with ASD do not have access to the curriculum for sexual health education that meets and addresses these needs (Boehning, 2009; Sinclair, Unruh, Lindstrom, & Scanlon, 2015).
Teachers and medical professionals lack the training to provide the necessary instruction to students with autism (Attwood, Henault, and Dubin, 2014; Sinclair et al., 2015).

*Deaf-blindness.* Deaf-blindness is defined as concomitant [simultaneous] hearing and visual impairments, the combination of which causes such severe communication and other developmental and educational needs that they cannot be accommodated in special education programs that have been designed solely for children with deafness or children with blindness (IDEA, 2004).

The primary resources for sexual health education for people who are deaf and blind are:

- *Introduction to Sexuality Education for Individuals Who Are Deaf-Blind and Significantly Developmentally Delayed* by Kate Moss and Robbie Blaha (2001): This is a thorough reference book published by The National Information Clearing house on Children Who Are Deaf-Blind, and offers information, guidelines, advice, and resources for people who are deaf-blind and their teachers, parents, and caregivers.

- The National Center for Deaf-Blindness offers a resource page for sexuality education on their website. These references offer guidance and teaching strategies for parents and professionals for delivering sex education to students who are deaf-blind. Appropriate sexual behavior, social-sexual behavior, appropriate touch, dating, modesty and sexual abuse prevention are some of the topics discussed in the resources listed on this site: https://nationaldb.org/library/list/61.
• *Sex education: A curriculum for the deaf-blind* by Cadigan, Ellen, Geuss, Roslye Roberts (1981) Watertown, MA: Perkins School for the Blind: This is the only deaf-blind-specific sexuality education curriculum. Units include self-identity, anatomy of the reproductive systems, human reproduction, growth from birth to puberty, adolescence, and medical aspects such as personal health care and hygiene.

• *Social/sex education for children and youth who are deaf blind* by Tom Miller (1999) found in John M. McInnes, *A guide to planning and support for individuals who are deaf blind*, pp. 201-226. Toronto: University of Toronto Press: This one chapter of the McInnes book by author Tom Miller. It includes an overview of the problem of providing sexuality education, aspects to consider in providing social and sexuality education, what and when to teach, techniques for instruction, policy development, and so forth.

Students with deaf-blindness need parents and teachers to advocate for sexual health education, as they are often denied access to sexual health education (Moss & Blaha, 2001). Students with deaf-blindness are at very high risk for sexual abuse in residential and care settings; parents and teachers need to learn how to effectively teach safety and sexual health education from a young age (2001).

*Deafness.* Deafness is defined as a hearing impairment that is so severe that the child is impaired in processing linguistic information through hearing, with or without amplification that adversely affects a child's educational performance (IDEA, 2004).

A resource to help improve communication regarding sexuality for the deaf population is *Signs of Sexual Behavior: An Introduction to Some Sex-related Vocabulary*
in American Sign Language by James Woodward (1979). This book presents sexuality-related vocabulary in American Sign Language, offering clear illustrations of more than 130 signs. Comprehensive explanations and notes on derivation are included. A video illustrating the signs is also available.

Several studies have reported a prevalence of knowledge gaps on a range of sexual issues among deaf US students (Joseph, Swayer, & Desmond 1995; Swartz, 1992), including poor grasp of HIV transmission and prevention (Luckner & Gonzales, 1993). In 2009, Suter, McCracken, and Calam found that teachers of deaf students report a need for methods and materials designed specifically to meet the needs of deaf children about sexuality and relationships. The data show a demand for a sex education module for teachers of the deaf and a need for deaf-friendly sex education material (Suter et al., 2009).

Developmental delay. Developmental delay refers to children from birth to age three (under IDEA Part C) and children from ages three through nine (under IDEA Part B). The term developmental delay, as defined by each State, means a delay in one or more of the following areas: physical development; cognitive development; communication; social or emotional development; or adaptive [behavioral] development (IDEA, 2004). A developmental delay means a condition exhibiting one or more of the following characteristics over a long period of time and, to a marked degree, one that adversely affects a child's educational performance (IDEA, 2004):

- An inability to learn that is not explained by intellectual, sensory, or health factors.
• An inability to build or maintain satisfactory interpersonal relationships with peers and teachers.
• Inappropriate types of behavior or feelings under normal circumstances.
• A general pervasive mood of unhappiness or depression.
• A tendency to develop physical symptoms or fears associated with personal or school problems.
• Schizophrenia. The term does not apply to children who are socially maladjusted, unless it is determined that they have an emotional disturbance.

Many early childhood general and special educators encounter children who exhibit sexual behavior and are not sure how to respond (Kenny, Dinehart, & Wurtele, 2015). Although they have had training in childhood development, sexual health and development is rarely incorporated into teacher education programs, especially for early childhood education (Kenny et al., 2015). Early childhood educators do receive training in child abuse and in their responsibilities as mandated reporters to report suspected abuse, including childhood sexual abuse (CSA). Discriminating between typical and atypical sexual behaviors is critical to recognizing whether a child has been sexually abused (2015). Beyond recognizing behaviors, early childhood educators feel ill equipped to address children's sexual behaviors in the classroom (Kenny et al., 2015).

*Hearing impairments including deafness.* Hearing impairments include impairment in hearing, whether permanent or fluctuating, that adversely affect a child's educational performance, but that is not included under the definition of deafness in this section (IDEA, 2004). Similar to the deaf population, students with hearing impairments need sexual health education designed to meet their specific needs (Suter et al., 2009).
Multiple disabilities. Multiple disabilities are defined as simultaneous impairments (such as intellectual disability-blindness, intellectual disability-orthopedic impairment, etc.), the combination of which causes such severe educational needs that a child cannot be accommodated in a special education program solely for one of the impairments (IDEA, 2004). The term does not include deaf-blindness.

Two publications were found that pertain to those with multiple disabilities. An annotated bibliography, Issues in Sexuality for Adolescents with Chronic Illnesses and Disabilities notes resources on sexual health education for people with multiple disabilities (Minnesota University, 1991). References in the bibliography include books and journal articles primarily from medical periodicals. A separate section of 35 training and educational materials lists videotapes, films, manuals, curricula, booklets, and workbooks for use in training individuals with mental retardation/developmental disabilities, physical disabilities, hearing impairments, chronic illness, and multiple disabilities. Although The Ultimate Guide to Sex and Disability by Kauffman, Silverberg, and Odette (2007) does not specifically mention multiple disabilities, it does contain information for a multitude of disabilities and chronic health issues.

Though the terminology is outdated, Smigielski and Steinmann’s work emphasizes the need to use concrete teaching, visual compensators, resource persons, repetition of content, and opportunities for social learning for students with multiple disabilities when teaching sexual health education (1981).

Orthopedic disabilities. Orthopedic disabilities are defined as a severe orthopedic impairment that adversely affects a child’s educational performance. The term includes...
impairments caused by a congenital anomaly (e.g. clubfoot, absence of some member, etc.), impairments caused by disease (e.g. poliomyelitis, bone tuberculosis, etc.), and impairments from other causes (e.g. cerebral palsy, amputations, and fractures or burns that cause contractures) (IDEA, 2004).

*Other health impairments (OHI).* Other health impairments are defined as impairments causing a child to have limited strength, vitality, or alertness, including a heightened alertness to environmental stimuli that results in limited alertness with respect to the educational environment and adversely affects a child’s education performance. These can be due to chronic or acute health problems, such as asthma, attention deficit disorder or attention deficit hyperactivity disorder, diabetes, epilepsy, a heart condition, hemophilia, lead poisoning, leukemia, nephritis, rheumatic fever, sickle cell anemia, and Tourette syndrome (IDEA, 2004).

*Traumatic brain injury (TBI).* Traumatic brain injury is defined as an acquired injury to the brain caused by an external physical force, resulting in total or partial functional disability or psychosocial impairment, or both, that adversely affects a child's educational performance (IDEA, 2004). The term applies to open or closed head injuries resulting in impairments in one or more areas, such as: cognition; language; memory; attention; reasoning; abstract thinking; judgment; problem-solving; sensory, perceptual, and motor abilities; psychosocial behavior; physical functions; information processing; and speech (2004). The term does not include brain injuries that are congenital or degenerative, or brain injuries induced by birth trauma.

Orthopedic disabilities, other health impairments (OHI), and traumatic brain injury (TBI) have numerous sexual health education resources, including:
• **MS and Intimacy: Managing Specific Issues** by Tanya Redford (2000): This is a booklet for people living with multiple sclerosis (MS) and their partners. It includes a list of other national resources.

• **Sexuality and Disability** by Maddie Blackburn (2002): A handbook on the sexual needs and knowledge of young adults with spina bifida and hydrocephalus.

• **Sexual Difficulties after Traumatic Brain Injury and Ways to Deal with It** by Ronit, Aloni, and Shlomo Katz (2003): This book focuses on improving the social and intimacy skills of TBI survivors.

• **Sexuality and Fertility Issues in Ill Health and Disability: From Early Adolescents to Adulthood** by Rachel Balen and Marilyn Crawshaw (2006): A collection of work by various health professionals and patients on the topic of sexuality and disability encompassing topics from growing up HIV positive to coping with cancer treatments and diagnosis.

• **Sex When You're Sick: Reclaiming Sexual Health after Illness or Injury** by Anne Katz (2009): This book discusses how illness and injury affect sexuality and strategies to overcome sexual difficulties after health challenges.

• **The Ultimate Guide to Sex and Disability: For All of Us Who Live with Disabilities, Chronic Pain, and Illness** by Miriam Kauffman, Cory Silverberg, and Fran Odette (2007): This book is written for adults to provide guidance on creating active, healthy sex lives with disabilities, chronic pain, and/or illness.

• **Venus on Wheels: Two Decades of Dialogue on Disability, Biography, and Being Female in America** by Gelya Frank (2000): A cultural biography about a woman
without arms or legs, her sexuality, and participation in the disability rights movement.

Visual impairments including blindness. Visual impairment including blindness is defined as an impairment in vision that, even with correction, adversely affects a child’s educational performance. The term includes both partial sight and blindness (IDEA, 2004).

There is a problem with access to sexual health curriculum for students with visual impairments and blindness. These students do not receive the same opportunities to develop their sexual knowledge; nor acquire the necessary knowledge to effectively protect and understand their sexual health and development (Krupa & Esmail, 2010). Kapperman and Kelly created an essential guide for educating students with blindness and visual impairments about their sexual health (2013). The guide offers specific accommodations, modifications, resources, and effective teaching styles to constructively meet the specific needs of students with blindness and visual impairments (2013).

Barriers to sexual health education for people with disabilities.

The research indicates that there are seven leading barriers hindering the access of sexual health education to students with disabilities. These seven barriers are: 1.) Lack of teacher education programs for sexual health education (Attwood, Henault, & Dubin, 2014; Goldman & Coleman, 2013; Kenny et al., 2015; Klein & Breck, 2010; Preston, 2013; Wilkenfeld & Ballan, 2011); 2.) Lack of teacher knowledge and confidence resulting in teacher concern, anxiety, and fear (Barnard-Brak, Schmidt, Chesnut, Wei, & Richman, 2014; Eisenberg, Madsen, Oliphant, & Sieving, 2013; Eisenberg, Madsen, Oliphant, Sieving, & Resnick, 2010; Kok & Akyuz, 2015; Rohleder, 2010; Wilkenfeld &
3. Parental anxiety and fear (Barnard-Brak et al., 2014; Eisenberg et al., 2013; Rohleder, 2010); 4. Need for School/Teacher and Parent partnership to effectively teach sexual health education (Goldman & Coleman, 2013; Kok & Akyuz, 2015; Travers & Tincani, 2010); 5. Lack of valid and reliable sexual health education with standards guiding development, implementation, and evaluation (Barnard-Brak et al., 2014; Grievo, McLaren, & Lindsay, 2006; Eisenberg et al., 2010; FoSE, 2012; Preston 2013); 6. Lack of federal funding supporting programs specifically designed for students with disabilities based on comprehensive sexual health education (Advocates for Youth, 2014; Eisenberg et al., 2013; Kirby et al., 2011; SIECUS, 2015b, 2016); and, 7. The socialized context of the sexuality of students with a disability as deviant (Erevelles, 2011; Morgan, Mancl, Kaffar, & Ferreira, 2011; Travers & Tincani, 2010).

**Teacher preparation.**

Teachers feel unprepared to provide sexual health education and report little to no formal training on the topic (Klein & Breck, 2010; Eisenberg et al., 2010; Preston, 2013). Eisenberg, Madsen, Oliphant, Sieving, and Resnick studied the pre-service preparation for sexuality educators (2010). The researchers found that the teachers did not feel prepared to teach sexuality health education after graduation. Additionally, the health education pre-service teacher training programs needed to implement both sexual health education training and pedagogy regarding how to teach sexual health education (Eisenberg et al., 2010).

In addition to the lack of formal training, there are multiple barriers to teaching sexual health in the classroom. A recent study included 368 middle and high school teachers with sexual health assignments and asked them to identify the barriers to
providing sexual health education to their students (Eisenberg, Madsen, Oliphant, & Sieving, 2013). The following barriers were reported: lack of time, lack of financial resources, lack of curriculum, concerns about parents’ responses, concerns about students’ responses, concerns about responses from administration, and school or district policy (Eisenberg et al., 2013).

Teacher knowledge, confidence, anxiety, and fear.

Goldman and Coleman (2013) found that teachers in the general education setting lack confidence, fear lack of parental support, and are concerned about lack of school support. In 2013, Eisenberg, Madsen, Oliphant, and Sieving found several barriers reported by teachers in regard to teaching sexual health education to the general population. These included concerns regarding parent, student, and administrator responses to the sexual health education curriculum (2013).

Rohleder (2010) found that although educators supported the need for sexual education for people with learning disabilities, when it came to actually following through with the education, the educators’ anxieties and fears regarding the consequences interfered with their ability to implement such education. The study suggested that the educators often project notions of damage, vulnerability, and dependency onto people with disabilities. This problem is compounded by society’s anxiety surrounding sex and sexuality (Rohleder, 2010; Suter et al., 2009). Wilkenfeld and Ballan (2011) found that one barrier to teaching sexual health to students with disabilities is teacher fear or apprehension, which supports previous findings from Howard-Barr, Rienzo, Pigg, and James (2005).
**Parent anxiety and fear/need for teacher/school partnerships.**

The majority of parents of children with disabilities do not know how to deal with the problems, anxiety, and education regarding their child’s sexual development (Barnard-Brak et al., 2014; Eisenberg et al., 2013; Kok & Akyuz, 2015; Rohleder, 2010; Suter et al., 2009). Parent education programs and partnerships with professionals and educators are needed to promote confidence and increase knowledge on the roles parents can effectively play to support their child’s sexual health education (Kok & Akyuz, 2015; Suter et al., 2009).

**Curriculum development and fidelity of programs.**

Sexual health and safer sex programs lack reliability and validity, and are not implemented with fidelity (Grievio, McLaren, & Lindsay, 2007; Preston, 2013). There are no standardized sexual education tests, and no reliable tools for evaluating the efficacy of the sexual health education programs (Preston, 2013). Standards and effective evaluation tools for sexual health curriculum are needed both in the general population and within special education to ensure that students are learning the content (CDC, 2015; SIECUS, 2015a; WHO, 2006).

A leading consortium of health education programs published *National Sexuality Education Standards: Core content and skills, K-12* (FoSE, 2012). This publication defined seven sexual health education standards. These seven standards are as follows (FoSE, 2012, p. 3):

- Standard 1: Professional Disposition: Teacher candidates demonstrate comfort with commitment to and self-efficacy in teaching sexuality education.
• Standard 2: Diversity and Equity: Teacher candidates show respect for individual, family and cultural characteristics and experiences that may influence student learning about sexuality.

• Standard 3: Content Knowledge: Teacher candidates have accurate and current knowledge of the biological, emotional, social and legal aspects of human sexuality.

• Standard 4: Legal and Professional Ethics: Teacher candidates make decisions based on applicable federal, state and local laws, regulations and policies, as well as professional ethics.

• Standard 5: Planning: Teacher candidates plan age and developmentally appropriate sexuality education that is aligned with standards, policies and laws and reflects the diversity of the community.

• Standard 6: Implementation: Teacher candidates use a variety of effective strategies to teach sexuality education.

• Standard 7: Assessment: Teacher candidates implement effective strategies to assess student knowledge, attitudes and skills in order to improve sexuality education instruction.

These standards provide an evidence-based template from which future sexual health curriculum can be built. However, these standards make no reference to students with special needs or offer any suggestions regarding how to best educate students in the various disability categories under IDEA 2004. These standards could be modified to address the sexual health needs of students with disabilities.
Another possible template from which to build and research sexual health curriculum for people with disabilities is the comprehensive resource developed to aid in the creation of adolescent sexual health education programs. This resource was produced as a collaborative effort by the Center for Disease Control and Prevention (CDC), ETR Associates, and the South Carolina Campaign to Reduce Pregnancy (Kirby, Coyle, Forrest, Rolleri, & Robin, 2011). These three organizations produced this reference to provide a wealth of research on numerous topics, including how to create a logic model based curriculum for providing sex education, improving perceptions of risks, addressing attitudes, values and beliefs, correcting perceptions of peer norms, increasing self-efficacy and skills, improving intentions, and increasing parent-child communication on the topic of sex (Kirby et al., 2011). These organizations, funded by federal dollars, wrote this book to help educators design curricula that are supported by evidence-based practices, which include comprehensive sex education. There are valuable references, web links, and resources provided in the book. Unfortunately, there is no mention in the book of sex education adapted for people with disabilities.

Federal Funding and Legislation.

Students with disabilities, by law, have the same rights as their non-disabled peers (Individuals with Disabilities Education Act, 2004; Section 504 of the Rehabilitation Act, 1973). These laws ensure equal access to schools and education for people with disabilities. The Individuals with Disabilities Education Act (2004) also ensures that people with disabilities will be taught using evidence-based practices. This is relevant to sexual health education because abstinence based safer sex education is not an evidence-based practice and there is no empirical evidence supporting the effectiveness of this type
of sexual health education (Kirby, 2008; SIECUS, 2014; Trenholm, Devaney, Fortson, Quay, Wheeler, & Clark, 2007).

On April 14, 2015, federal legislation passed the Abstinence Education Reallocation Act extending the Title V funding for abstinence-based sexual health education through the 2017 fiscal year and increasing the funds from $50 million to $75 million per year (National Abstinence Education Association [NAEA], 2015; SIECUS, 2016). On December 16, 2015, the Healthy Relationships Act was passed which doubles the funding for a new sexual risk avoidance program; this is in addition to the reauthorization of abstinence-based sexual health education (NAEA, 2015). Within the Healthy Relationships Act Congress changed the name of abstinence-based sexual health education to sexual risk avoidance (SRA) education (NAEA, 2015; SIECUS, 2016).

The funding for abstinence-based sexual health education or SRA continues even in the face of overwhelming scientific research supporting the effectiveness of comprehensive sex education (Advocates for Youth, 2014; Kirby, 2008; Kohler et al., 2008; SIECUS, 2014, 2016; Santelli & Kantor, 2008; Trenholm et al., 2007). The support of abstinence based sexual health education is in direct conflict with IDEA, 2004. After performing a review of research on sexual health education for students with disabilities Boehning concluded, “the current sex education curriculum violates the spirit of the Individuals with Disabilities Education Act, IDEA, 2004, which offers a free and appropriate education to students with disabilities” (2006, p. 59). Boehning supports the need for comprehensive sexual health education for students with special needs in order to provide them with the skills needed to protect themselves from abuse.
Sexuality for People with Disabilities as Deviant.

The current sexual health education programs are overtly and covertly constructed to define the sexuality of students with disabilities as deviant (Erevelles, 2011; Morgan, Mancl, Kaffar, & Ferreira, 2011; Travers & Tincani, 2010). The socialized context of the sexuality of students with a disability as deviant creates barriers to implementing comprehensive sexual health programs for people with disabilities. The curriculum for these programs does not effectively prepare students with disabilities to cope with the natural development of their sexuality (Barnard-Brak, Schmidt, Chesnut, Wei, & Richman, 2014; Murphy & Young, 2005; Preston, 2013).

The Need for Additional Literature

Children, students and adults with disabilities have the right to understand the natural functions of their bodies and their sexuality. In order to fully protect and understand their bodies students with disabilities need sexual health education (Murphy & Elias, 2006; SIECUS, 2012, 2014). To help this population become self-determined individuals further research into the sexual health education of students with disabilities is essential (Grievs, McLaren & Lindsay, 2007; Kirby et al., 2011; Klein & Breck, 2010; Preston, 2013; Wehman, 2012).

Summary

Chapter 2 included the background, history, and use of mixed method research. The chapter covered the history, legislation, and current research regarding the sexual health education for people with disabilities. Identification and explanation of seven barriers to sexual health education for people with disabilities is included. The following research questions guide the research methods presented in Chapter 3.
**Research Questions**

Based on the problems and barriers identified the following research questions were developed to guide this study.

The quantitative research question: What differences exist in sexual health education knowledge and preparation between licensed special education teachers and teachers without a special education license?

The qualitative research question: How do licensed teachers describe their views of teaching sexual health education for students with and without disabilities?

The mixed method questions: Is there evidence relating quantitative results to the qualitative themes when the data converge? How and Why?
Chapter Three: Research Methodology

Overview

This chapter details the research design and method for each phase of this study. The chapter includes a thorough explanation of the development of the research instrument. In addition, there is a defense, summary, and explanation of the procedural protocol for the convergent parallel mixed method study design. The description of the participants, setting, and data collection is included. The data analysis for both the quantitative and qualitative data is included. The process of working with a colleague to enhance the credibility of the qualitative analysis is explained. This chapter also includes the process of mixed method data analysis, encompassing the integration of the quantitative and qualitative data. Finalizing the chapter is the discussion of the challenges of this design.

Research Design

The basic design for this study is a convergent parallel mixed method design (see Figure 2 for the basic design). Utilization of the convergent parallel mixed methods design takes place when a problem needs both quantitative and qualitative data in order to develop a more complete understanding (Creswell, 2014, 2015) of the problem.

For this study design, the collection and analysis of the quantitative and qualitative data was simultaneous collected. The survey instrument simultaneously collected both quantitative data via demographic information and forced answer questions and qualitative data via open-ended questions. Although data analysis occurred separately for the quantitative questions and qualitative questions, the components derived from the factor analysis conducted on the quantitative survey questions did
influenced the qualitative themes. The mixed method integration included the merging of the quantitative and qualitative results by comparing and contrasting the data. Figure 3 shows a complete procedural diagram and visual representation of this study and the procedures for the convergent parallel mixed method design. The results of the mixed method analysis document how the data related or differed and includes the validation of findings. From the mixed method analysis several joint displays were developed (Chapter 4) that integrate the quantitative and qualitative results (Creswell, 2014).

**Figure 2.** Convergent Parallel Mixed Methods Research Design

![Figure 2. Depiction of the convergent parallel mixed methods research design. As found in “A Concise Introduction to Mixed Methods Research” by J. W. Creswell, 2015, p. 37. Copyright 2015 by SAGE publisher.](image)

The research questions in this study drive the need for a convergent parallel mixed method design. Quantitative and qualitative data were needed in order to understand the complexity of the knowledge and training of licensed teachers regarding sexual health education. The quantitative data helped the researcher understand the
relationships among variables, while the qualitative data helped the researcher understand the perspectives and views of the participants (Creswell & Plano Clark, 2011).

**Pilot Stage**

The pilot stage of this study was the development of the mixed method survey instrument. Aspects from an artifact analysis, the literature review, and a small qualitative research study were used to develop the instrument. The development of the instrument used mixed method principles, in that it is the result of data integration from qualitative methods of inquiry.

**Artifact Analysis.** The artifact analysis compared the sexual health education curricula for students in general education to the curricula for students in special education within one urban school district. The artifact analysis also included a comparison of the teacher training modules for the general education students and the students in special education. The artifacts were one urban district’s curricula for sexual health education. The sexual health curriculum for the general education students, special education students, and the trainings for teachers were analyzed for content, evidence based teaching practices, accuracy of information, and evaluation measures. The artifacts were viewed (if on video) and/or read. The researcher took notes regarding the content of the curriculum.

There is a significant difference in the breadth and depth of the curricula offered to the general education students, as compared to the curricula offered to the students in special education. In both cases, parents must sign a permission form for their child to receive sexual health education. The program for the students begins in fourth grade and is taught to students once a year through twelfth grade.
Figure 3. Procedural Diagram for Convergent Parallel Mixed Methods Design for Sexual Health Education Study. Diagram based on Creswell and Plano-Clark (2011, p. 118)
The general education students receive formatted sexual health education curricula that is available on the school districts website for review by parents and caregivers. Licensed teachers trained in the curricula by the school district teach sexual health education to the general education students. The curricula is abstinence based. Although, in eleventh and twelfth grade, general education students receive comprehensive sexual health education within the curricula and are informed regarding their sexual health choices, safety, protection, and relationship choices. Community leaders and parents serving on the districts sexual health education advisory board are largely responsible for determining the information taught within the curricula to general education students.

The students in special education receive separate sexual health education curricula that is based on hygiene and safety. The parents of students with individual education plans (IEPs) that indicate the student receives primary instruction in a special education classroom are invited to a parent preview night for the curricula. The parents for the students in special education must sign the permission slip for their children to participate in the curricula. The classroom teachers do not have to receive training in the sexual health education curricula and simply run the videos for the students in special education. The teachers who have received training are often not available to teach the students in special education, as there are not enough trained teachers in the field of sexual health education.

The curricula for students in special education consists of several video-based modules. A child’s musical jingle plays along in the background of the videos. The videos and pamphlets (that the students do not keep) have cartoons and words and no
life-like photos or drawings. The special education teacher determines the appropriate curriculum level to teach the students in the special education classroom. The result is that special education teachers use the student’s academic level to choose which sexual health education module to teach to their students (e.g. if there are ten students in a high school special education class and the lowest reading level is second grade, then the teacher uses the second grade sexual health education module). Special education teachers can also choose to skip portions of the modules (e.g. teacher can skip portion on reproductive health and menstruation).

Evaluations are not conducted to determine the effectiveness of the sexual health education programs. There are no evaluations for the teacher trainings (for general health education or special education), and no evaluations provided to the students to test their knowledge (neither general nor special education).

**Literature review.** The following components in the literature review were used to help create the instrument: comprehensive-based sexual health education versus abstinence-based sexual health education; the seven sexual health education standards (FoSE, 2012); and, sexual health education by disability category.

**Small qualitative study.** Critical sampling was used to find participants for the one-on-one semi-structured interviews conducted for this study. Critical sampling was utilized because the researcher had specific criteria that the participants needed to meet in order to learn about the participants experience (Creswell, 2015; Lichtman, 2013). The participants for the interviews were licensed special education teachers. The three interviews were one-on-one interviews with semi-structured questions (refer to Appendix B for a list of the questions). The duration of the interviews were from 35 minutes to 55
minutes. The interviews were conducted in places of convenience for the participant (e.g. participants’ homes or classrooms).

Each participant completed an extensive consent form prior to the interview as part of a classroom project. The interview questions and the results of the three interviews for this study were submitted to the institutional review board (IRB). Upon IRB approval, the participants were contacted and a priori consent to utilize the interview results to guide this dissertation was obtained (See Appendix B for cover letter to IRB for this study).

Participant 1, who had been teaching special education for five years at the time of the interview, is female, Caucasian, and in her late twenties. Participant 2, who had been teaching special education for eleven years at the time of the interview, is female, Caucasian, and in her mid-thirties. Participant 3, was beginning her twenty-third year of teaching special education at the time of the interview. She is also female, Caucasian, and in her early fifties.

Qualitative interview data was analyzed using the computer program Dedoose. The qualitative answers to the open-ended, semi-structured interview questions were coded and analyzed for themes. One limitation of this small qualitative study is that participants were not observed teaching sexual health education to their students with disabilities.

From the open-ended coding, three themes emerged from the data. These themes were anxiety and fear, lack of resources, and need. Each of the three teachers described experiences that led to an increase of anxiety and fear for both their students and themselves. One participant stated:
It would be beneficial to have some background on this subject. I have none, no knowledge, and I am not prepared. Some knowledge would make me more comfortable and when the subject is raised I would be more prepared to deal with it. But I would not want to teach the subject.

Lack of resources was noted throughout each interview in regard to both teacher training and the sexual health education for their students. The participants described need for more training, resources, and parent and family involvement. Two of the participants reported having received no formal education in sexual health education and students with disabilities. The third participant described her formal training, “I was offered zero tools in college regarding sex ed. and disabilities. The one, half day, training I did get from the district over the years did not prepare me.” The third theme was the overarching theme, the need for improvement in every facet of sexual health education for students with disabilities is dominant. As one of the participants stated:

There is no fidelity, no standard answers for the student’s questions. With every new teacher comes different answers. Those in special education might have a teacher that just doesn’t want to teach it, therefore, they are never taught a single thing. These kiddos need repetition, not just once a year, if that, and there is no way to know what, if anything they have actually learned. We need one on one, verbal tests for pre, post, and follow up to even know if what we teach is even helping.

**Results used to create instrument.** Teacher knowledge and training was found to be an essential theme from the qualitative study, the abstract analysis, and was found to be a barrier to access in the literature review. Three key categories within teacher
knowledge and training were identified: abstinence versus comprehensive-based sexual health education; standards for teaching sexual health education; and, teaching sexual health education within the context and needs of disability. The survey was developed focusing on the merged results of the artifact analysis, literature review, and small qualitative study. The survey instrument (see Appendix E) includes 21 Likert scale forced answered questions, six open-ended questions, and demographic questions. The six open-ended qualitative questions were purposefully embedded into the instrument to follow-up the quantitative Likert scale questions. The first four qualitative questions addressing teacher knowledge and views regarding abstinence versus comprehensive sexual health education and students with or without disabilities follow-up the quantitative questions addressing abstinence versus comprehensive sexual health education. The last two qualitative questions addressing teacher training and preparation follow-up the quantitative questions regarding sexual health education standards.

Setting, Participants, and Data Collection

The study was conducted at a teacher conference in the Western United States. Over 355 people registered for this annual teacher conference. The conference was geared to licensed teachers in general and special education. The conference setting included the conference rooms inside a large resort hotel. The researcher helped the conference staff prepare and bag the materials given to each registered conference attendee. Each bag contained a flyer advertising the study. The researcher recruited participants at the conference via the flyer, personally asking attendees to participate, and announcing the study during conference sessions (as permitted by conference staff and speakers).
Incentives were offered to both take the survey and to complete the survey. If a person took a survey form, they received an extra raffle ticket for the front door prizes, offered by the conference staff. If a person returned a competed survey, they had the opportunity to win one of five $25 dollar gift cards to Starbucks. The researcher prepared 330 copies of the survey for the conference. During the conference, 194 surveys were handed out to conference attendees. In order to qualify to take the survey, the person had to be a licensed teacher. Two people lost their survey copies, resulting in 192 different people receiving a copy of the survey. The researcher was the only person handing out surveys and ensured that only one copy was given to each person, except in the case two were lost, and these losses were documented. The researcher’s assistant stayed at a booth to help collect surveys and directed conference attendees to where they could locate the researcher. The researcher was in constant communication with the research assistant. When a completed survey was received, either the researcher or research assistant immediately numbered the survey. Of the 192 surveys distributed, 132 completed surveys were returned to the researcher. Two of the completed surveys could not be used. People that were not licensed teachers, and did not qualify for the study, completed these two surveys. Therefore, those two surveys were not included in the data analysis.

Of the 130 valid surveys returned, 130 participants filled out all 21 Likert scale forced answer questions. Each participant provided an answer for at least two of the open-ended questions, thus, 130 participants filled out at least two qualitative questions. For the first qualitative question (question number 7 on the instrument), 124 participants responded. For the second qualitative question (question number 8), 122 participants responded. For the third qualitative question (question number 9), 124 participants
responded. For the fourth qualitative question (question number 10), 121 participants responded. For the fifth qualitative question (question number 25), 114 participants responded. For the sixth qualitative question (question number 26), 110 participants responded. There was an equal sample size for the quantitative and qualitative portions of the survey.

**Data Analysis**

The data analysis began with the quantitative data, then the qualitative data, leading into the mixed method analysis, comparison, and integration. Table 1 depicts the data analysis matrix, providing a quick reference to the guiding research question and matching analysis components for the quantitative, qualitative, and mixed method sections.
Table 1  
Data analysis matrix

<table>
<thead>
<tr>
<th>Theoretical Framework</th>
<th>Questions</th>
<th>Analysis</th>
</tr>
</thead>
</table>
| Critical Disability Theory (CDT): Do the results align or misalign with theory? | Quantitative: What differences exist in sexual health education knowledge and preparation between licensed special education teachers and licensed general education teachers? | - SPSS Version 22.0  
- Descriptive statistics  
- Factor Analysis  
- Cronbach’s α  
- Mann-Whitney U – tests for differences:  
- Test 1: Independent variable: Special Education License; dependent variable: scores from 4 factors identified in factor analysis  
- Additional Mann-Whitney’s: Elementary License, Secondary License, rural vs. urban, training in sexual health education (SED) vs. no training in SED, and gender |
| | Qualitative: How do licensed teachers describe their views of teaching sexual health education for students with and without disabilities? | - Dedoose  
- Code/Analysis  
- Develop Framework  
- Report Agreement  
- Compare results with Critical Disability Theory |
| | MMR: Is there evidence relating quantitative results to the qualitative themes when the data converge? How and Why? | Merge results through cross tabulation of quantitative results and qualitatively derived groups – consider how merged results produce better understanding of the data (confirmations and conflicts)  
- Sort by license type  
- Sort by rural v. urban, gender (just for information), training (received sexual health education vs. did not receive sexual health education) |

Quantitative.

The quantitative research question is what differences exist in sexual health education knowledge and preparation between licensed special education teachers and teachers without a special education license? The null hypothesis (H₀) stating there will be no difference between the populations was tested using a Mann-Whitney U test comparing the difference between mean ranks.
Scale reliability, factor analysis, and hypothesis testing was conducted on the responses to the survey instrument to enhance the validity of the new survey instrument by determining what component factors were being tested (Field, 2009). Cronbach's alpha was used as a (lowerbound) estimate of the reliability of a psychometric test (survey instrument) (Creswell, 2015; Field, 2009). Non-parametric statistics (Mann Whitney U tests) were utilized to test the hypothesis, and to detect differences within the participants to identify potential significant values.

To analyze the quantitative survey data, the researcher used the software programs Excel 2013 by Microsoft and the Statistical Package for the Social Sciences 22.0 (SPSS, 2016). Elimination of two surveys was necessary because the participants were not licensed teachers; one participant was a parent without a teaching license and one participant was a paraprofessional. Demographic data was recorded and organized into Excel by survey identification number. The demographic data for gender, age, race/ethnicity, teacher license type (elementary, secondary, special education), urban or rural school, number of years teaching, training in sexual health education, type of training received, and the 21 Likert scale forced answer questions were transferred to SPSS 22.0.

Descriptive statistical data was utilized to compare mean scores by demographic data for the four component factor scores and total mean score of the survey. The descriptive statistical data includes the means scores for each factor and for the total mean score of the survey. The means scores are important in order to gain an understanding of the self-reported knowledge ratings of the participants. Frequency distributions were run to detect errors in data entry and to identify outliers.
Specifically, quantitative data informs the researcher of the differences and similarities among teacher demographics, and the levels of knowledge as within each of the four components derived from the factor analysis. The four components, derived from the factor analysis conducted on the instrument (see Chapter 4), are: Component 1 - psychological and social components of sexual health education (ps-sed); Component 2 - biological elements of sexual health education (b-sed); Component 3 - disability categories of students (dcs); Component 4 - teacher sexual health education training (shet). The component data was grouped by utilizing the demographic variables of the teachers. The quantitative data results are beneficial, although potentially insufficient when separately collected and analyzed (Creswell, 2014). Merging this data with the qualitative research data led to comprehensive answers to the mixed method research questions.

**Qualitative.**

The qualitative research questioned how licensed teachers describe their views of teaching sexual health education for students with and without disabilities?

The goal of the qualitative question was to understand the views of the participants regarding teaching sexual health education and their views regarding being trained to teach sexual health education. The question was specifically designed to gain an understanding of their views on both abstinence-based sexual health education and comprehensive sexual health education for students with and without disabilities. Throughout data analysis of the participants’ answers to the qualitative questions the researcher sought to understand the participants’ truth and the meaning of their responses.
The researcher analyzed the qualitative data using the computer program Dedoose. The assistance of a colleague, as a second researcher/coder, was enlisted to enhance the construct validity of the study. Demographic characteristics and the answers to the six open-ended questions categorized by identification number (id#) within a spreadsheet in Excel 2013 were transferred to Dedoose.

Qualitative coding is defined by Miles, Huberman, and Saldana (2014, p.73) as “a data condensation task that enables you to retrieve the most meaningful material, to assemble chunks of data that go together… a method of discovery.” The process of coding the data occurred in three cycles. The researcher collaborated with a colleague, who recently received a Doctorate of Education in Literacy Studies from a College of Education throughout the coding process to reduce bias.

Constant comparison analysis to analyze data collected at one time was utilized to identify the underlying themes in the data throughout the first three cycles of coding (Miles, Huberman, & Saldana, 2014; Leech & Onwueguzie, 2007). Constant comparison analysis was chosen as the preferable method to analyze the data based on the general nature of the qualitative research questions. The coding for the constant comparative analysis was done both deductively (codes identified prior to analysis) and inductively (codes emerge from the data) (Leech & Onwueguzie, 2007, p. 565). The deductive method was used throughout the cycles: in cycle one the qualitative questions were used as the parent codes; in cycle two four of the parent codes were used based on the quantitative results of the factor analysis; and, in cycle three the use of the codes from the factor analysis continued. The inductive method was similarly used throughout the three cycles: the themes that emerged from the participant responses in cycle one were
used to form the code tree for cycle two; and, the themes that emerged in the second cycle were used to expand and edit the third code tree. After the third cycle of coding, classical content analysis was used to help understand the frequency of the codes in the process of data condensation to create the themes and patterns leading to the creation of a framework. Classical content analysis enabled the researchers to identify which codes were utilized the most frequently and may have aided in understanding which views were most important to the participants (Leech & Onwuegbuzie, 2007).

The first cycle of coding was based on the question type within the survey instrument. The question became the parent code for the data, with six parent codes, one for each question. The first stage was conducted prior to running a factor analysis on the quantitative questions of the survey instrument. This stage was not influenced by the quantitative analysis (See Table 2 for a depiction of the first cycle of coding).

The researcher read each of the participant’s responses noting major themes in the data and block coding based on the question type with the intent to create child codes based on the themes found within each of the questions. The initial themes noted by the researcher were teaching, training, abstinence only, comprehensive only, and disability. During the process, it became clear to the researcher that using the questions as the parent codes was not working. The themes crossed over between questions. At that point, the researcher employed the assistance of a colleague to help with the coding and qualitative data analysis process. The colleague’s role was to help throughout the data analysis process with coding, to test agreement of codes, to increase the dependability of the analysis.
Table 2
First Cycle of Qualitative Coding Based on Factor Analysis Components

<table>
<thead>
<tr>
<th>Code</th>
<th>Question from Instrument</th>
</tr>
</thead>
<tbody>
<tr>
<td>Knowledge Question - #7 from Instrument (kn-qual) – Abstinence.nd</td>
<td>Describe your views on teaching abstinence-based sexual health education to students without disabilities.</td>
</tr>
<tr>
<td>Knowledge Question - #8 from Instrument (kn-qual) – Abstinence.d</td>
<td>Describe your views on teaching abstinence-based sexual health education to students with disabilities.</td>
</tr>
<tr>
<td>Knowledge Question - #9 from Instrument (kn-qual) – Comprehensive.nd</td>
<td>Describe your views on teaching comprehensive-based sexual health education to students without disabilities.</td>
</tr>
<tr>
<td>Knowledge Question - #10 from Instrument (kn-qual) – Comprehensive.d</td>
<td>Describe your views on teaching comprehensive-based sexual health education to students with disabilities.</td>
</tr>
<tr>
<td>Standard/Training Question - #25 from Instrument (st-qual) – Teacher Training.nd</td>
<td>Describe the type of preparation you believe teachers should receive in order to teach sexual health education to students without disabilities.</td>
</tr>
<tr>
<td>Standard/Training Question - #26 from Instrument (st-qual) – Teacher Training.d</td>
<td>Describe the type of preparation you believe teachers should receive in order to teach sexual health education to students with disabilities.</td>
</tr>
</tbody>
</table>

*nd = no disability *d = disability

The researcher and colleague met three times in person, one time via phone conversation to clarify the definitions of the codes utilized for the third coding cycle, and communicated via e-mail throughout the data analysis process. The meetings took place in the researcher’s office. The process and decisions made during each meeting were documented in full by the researcher. The research colleague reviewed the documentation of the process and agreed with the accuracy. Prior to the first in person meeting, the researcher set up access to the software program Dedoose and the de-identified encrypted survey. This allowed the colleague full access to the coding and excerpts from participants.

The first in person meeting lasted approximately four hours. During this meeting the researcher and colleague watched several online video tutorials offered by Dedoose.
These tutorials ensured that both the researcher and the colleague had full understanding of how to best utilize the software. After watching the tutorials, the second code cycle of coding was created. That is, the researcher talked through the definitions of codes. After a lengthy conversation regarding how the instrument was created, the individual qualitative questions, and the data collection process, the researcher’s colleague was able to give initial input on the parent codes and child codes, with accuracy of the code tree (See Table 3 for a depiction of the second cycle of coding).

The initial code tree was utilized to code three participant responses; this was done both to ensure understanding of how to use the software and to check for agreement on the definitions and utilization of the coding system. The researcher and colleague worked together to talk through agreements and disagreements regarding the use of the codes. Although, no calculation was made regarding the initial agreement, there was consensus for the majority of codes. There was disagreement on the application of two codes; these disagreements were resolved through mutual clarification of the meaning of each code.

After the initial creation of codes, a conversation ensued regarding the process and outcomes of the quantitative analysis. As the researcher described the reasons why the first code cycle did not accurately identify the participants’ views and the initial themes found within data, the researcher realized that many of the participants’ comments fit into the components identified as a result of the factor analysis performed on the qualitative data. The researcher inquired about the possibility of utilizing these components as parent codes. The researcher’s colleague stressed the use of the four components derived from the factor analysis be used as codes, with the consideration that
these codes could increase the strength of the study. Additionally, the researcher discussed the utilization of the four components of the factor analysis as codes for the qualitative analysis with experienced researchers, who agreed this would add to the strength of the study, if the codes were able to help identify themes within the participants’ responses. The second cycle modifications of the codes were influenced by the initial themes found within the responses from the first cycle of coding, the conversations from the first in-person meeting, and the results of the factor analysis performed on the quantitative questions.

Although an initial code tree was created together during this first meeting, the need for a dynamic and fluid process was noted. During the independent coding process, the two coders would create codes based on the patterns in the data as needed. After coding, and making note of the individual process, the next meeting would occur to discuss the process. This left the door open to the possibility of another cycle of coding based on the participant’s responses.

The researchers agreed to meet again in two weeks and finalized the action steps. After the initial meeting, as agreed, the researcher modified the second code tree within Dedoose to reflect the decisions made. Utilizing the second code tree (Table 3), the researchers coded the data prior to the second meeting. The colleague coded the odd participants 1 through 61 (31 participants - 24%), and the researcher coded the even participants 2 – 80 (40 participants - 31%).
The second in person meeting lasted approximately two hours. During the second meeting, the process of coding was discussed. Both coders had noted the need for different codes, patterns found within the participant responses that were not being captured by the second code tree. This conversation included the following explorations and inquiry: What codes were working? What themes were being missed? What wasn’t working? And, what changes needed to be made to the codes? From this discussion, a third cycle of coding was reasoned to be necessary. The third cycle of coding encompassed more detailed codes and child codes based on the participants’ responses (See Table 4 for a depiction of the third cycle of coding).
After the second meeting, the researcher altered the code tree according the notes made during the meeting. The researcher and colleague decided that it would be best to work from a blank slate within Dedoose in order to accurately code for the third cycle. The researcher erased the second cycle of coding within the software program. Both coders worked from clean data for the third cycle of coding.

During the third wave of coding, the researcher felt that levels of training needed to be added to the parent code SHET (sexual health education training). The majority of participants responded to the teacher training questions with a detailed description of the type of training they viewed as most important in order to be prepared to teach sexual health education. There were no codes to highlight this information. The level of training was added as a child code under (SHET), with second child codes under level of training to include the specific responses of the participants. The researcher requested a telephone meeting with the second coder to discuss the addition of the levels of training.

Prior to the third in-person meeting, a telephone meeting took place. The meeting lasted approximately one hour. During that meeting the researcher went through each code with the colleague to clarify and confirm the definition and use of the parent code, child code, and second child codes. During the telephone meeting and via e-mails the researchers agreed to consider the patterns found within the participants’ responses after finishing coding the data and to make note of these patterns to bring to the third meeting. The researcher also requested that the second coder read the other participants responses when finished with coding, thereby giving the second coder a complete picture of the data.
The researchers next meeting was an extended in-person meeting to discuss the third cycle of coding, answering the same set of questions used for the second cycle. Working toward this goal the researchers could decide if a fourth cycle of coding was necessary or accept the third cycle and work from the third cycle to mind map patterns and themes. For the third cycle of coding the colleague coded odd participants 1 through 61 (31 participants - 24%) and the researcher coded even participants 2-62, and all participants 63-130 (99 participants – 76%).

The third and final in-person meeting last six hours. During the third meeting the researcher and colleague thoroughly discussed the coding process and decided that the third cycle of coding covered the views of the participants and a fourth cycle of coding was not necessary. The researchers used classical content analysis to help identify themes and patterns within the participant’s responses. Classical content analysis has been helpful to use when there are a high number of codes. For this form of analysis the researcher(s) count the number of times each code is used and report the numbers (Leech & Onwuegbuzie, 2007). In this case, the software Dedoose counted the codes for the researchers and the numbers for both the frequency of the code, and the number of participants receiving the code are reported in Table 4. From the responses of 130 participants a total of 422 excerpts were coded using the 45 codes, child codes, and 2nd child codes. The length of the excerpts ranged from 68 to 1659 characters and the total number of code applications was 1150.
Table 4
Third Cycle of Coding: Codes, Definition of Codes with Number of Codes and Participants Coded for Each

<table>
<thead>
<tr>
<th>Code</th>
<th>Child Code</th>
<th>2nd Child Code</th>
<th># of Codes</th>
<th># of Participants</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td>29</td>
<td>28</td>
<td>Participant comment that is an not common</td>
</tr>
<tr>
<td>Beliefs/Ethics</td>
<td></td>
<td></td>
<td>17</td>
<td>17</td>
<td>Participants personal beliefs and/or ethics regarding either teaching or being trained to teach sexual health education (SED)</td>
</tr>
<tr>
<td>Collaboration</td>
<td></td>
<td></td>
<td>18</td>
<td>16</td>
<td>Participant mentions need for collaboration either with parents, family, and/or community</td>
</tr>
<tr>
<td>Community</td>
<td></td>
<td></td>
<td>4</td>
<td>3</td>
<td>Collaboration with Community</td>
</tr>
<tr>
<td>Parent(s)</td>
<td></td>
<td></td>
<td>13</td>
<td>8</td>
<td>Comments that pertain to only parent/family should be teaching sexual health at home</td>
</tr>
<tr>
<td>Family</td>
<td></td>
<td></td>
<td>14</td>
<td>12</td>
<td>Collaboration with parent/family</td>
</tr>
<tr>
<td>Parent/Family</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Only</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>SHET</td>
<td></td>
<td></td>
<td>141</td>
<td>117</td>
<td>Sexual health education training</td>
</tr>
<tr>
<td>BOTH ab and comp – training</td>
<td>6</td>
<td></td>
<td>6</td>
<td>6</td>
<td>Teacher supports being trained to teach BOTH abstinence and comprehensive SED</td>
</tr>
<tr>
<td>Level of training</td>
<td>87</td>
<td></td>
<td>80</td>
<td></td>
<td>If participant states a level of training then use this code, then add appropriate child code from list of codes under this code</td>
</tr>
<tr>
<td>PD</td>
<td></td>
<td></td>
<td>25</td>
<td>23</td>
<td>Professional Development</td>
</tr>
<tr>
<td>College Course(s)</td>
<td>35</td>
<td></td>
<td>33</td>
<td></td>
<td>1+ college course</td>
</tr>
<tr>
<td>Internship</td>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
<td>Internship in content area is needed</td>
</tr>
<tr>
<td>Lic/End – Hlth.Ed.</td>
<td>19</td>
<td></td>
<td>16</td>
<td></td>
<td>Need license or endorsement on license in Health Education</td>
</tr>
<tr>
<td>Lic/End – SPED</td>
<td></td>
<td></td>
<td>11</td>
<td>11</td>
<td>Need license or endorsement on license in Special Education</td>
</tr>
<tr>
<td>Lic/End – SHE</td>
<td></td>
<td></td>
<td>7</td>
<td>7</td>
<td>Need license or endorsement on license in SED</td>
</tr>
<tr>
<td>More+</td>
<td></td>
<td></td>
<td>23</td>
<td>22</td>
<td>General comment regarding “more” training, but not specific</td>
</tr>
<tr>
<td>Ab. Only Training</td>
<td>1</td>
<td></td>
<td>1</td>
<td>1</td>
<td>Participant comment promotes being trained to teach abstinence only and NOT comprehensive SED</td>
</tr>
<tr>
<td>Comp. Only Training</td>
<td>4</td>
<td></td>
<td>4</td>
<td>4</td>
<td>Participant comment promotes being trained to teach ONLY comprehensive SED</td>
</tr>
<tr>
<td>Disability – Teacher Training</td>
<td>38</td>
<td></td>
<td>38</td>
<td></td>
<td>Any thoughts about training and students with disabilities</td>
</tr>
<tr>
<td>Ab.</td>
<td></td>
<td></td>
<td>1</td>
<td>1</td>
<td>Participant comments on teacher training, abstinence, and students with disabilities</td>
</tr>
<tr>
<td>Comp.</td>
<td></td>
<td></td>
<td>2</td>
<td>2</td>
<td>Participant comments on teacher training, comprehensive SED, and students with disabilities</td>
</tr>
<tr>
<td>Against training</td>
<td>4</td>
<td></td>
<td>4</td>
<td></td>
<td>Against teacher training in sexual health education</td>
</tr>
<tr>
<td>Lack of</td>
<td></td>
<td></td>
<td>13</td>
<td>12</td>
<td>Lack of exposure to being trained in SED – in general</td>
</tr>
<tr>
<td>Exposure – SHE</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of Exposure – dis.</td>
<td>12</td>
<td>11</td>
<td>Lack of exposure to students with disabilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>------------------------</td>
<td>----</td>
<td>----</td>
<td>-----------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>TSE</td>
<td>166</td>
<td>122</td>
<td>Teaching SED – specifically teachers thoughts about teaching SED vs. being trained to teach SED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BOTH – teaching ab and comp</td>
<td>88</td>
<td>76</td>
<td>Participant supports teaching BOTH abstinence and comprehensive based SED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ab. Only Teaching</td>
<td>7</td>
<td>6</td>
<td>Participant comment promotes teaching ONLY abstinence SED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comp. Only Teaching</td>
<td>38</td>
<td>30</td>
<td>Participant comment promotes teaching ONLY comprehensive SED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disability – Teaching Students</td>
<td>119</td>
<td>101</td>
<td>Participant comments regarding teaching students with disabilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ab.</td>
<td>4</td>
<td>4</td>
<td>Participant comments regarding abstinence and teaching students with disabilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Comp.</td>
<td>24</td>
<td>21</td>
<td>Participant comments regarding comprehensive SED and teaching students with disabilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Against Teaching SE</td>
<td>4</td>
<td>4</td>
<td>Participant is against teaching SED</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of Exposure – SHE</td>
<td>13</td>
<td>12</td>
<td>Lack of exposure to teaching sexual health education in general</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of Exposure – dis.</td>
<td>21</td>
<td>16</td>
<td>Lack of exposure to teaching students with disabilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disability</td>
<td>41</td>
<td>34</td>
<td>General comments regarding students with disabilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>NOT promoting self-determination</td>
<td>1</td>
<td>1</td>
<td>Participant comments that do NOT promote self-determination for students with or without disabilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Promoting self-determination</td>
<td>13</td>
<td>12</td>
<td>Participant comments that promote self-determination for students with or without disabilities</td>
<td></td>
<td></td>
</tr>
<tr>
<td>BSHEK</td>
<td>16</td>
<td>15</td>
<td>Biological sexual health education knowledge (BSHEK) – any participant comment noting importance of BSHEK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PSSHEK</td>
<td>27</td>
<td>21</td>
<td>Psychological-Social sexual health education (PSSHEK) – any participant comment noting importance of PSSHEK</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Great Quotes</td>
<td>32</td>
<td>25</td>
<td>Excellent quotes found in the data to use in results and/or presentations</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

The framework developed out of the data condensation process utilized during the mind mapping session. The researchers worked together to map out, analyze, and create the initial patterns and themes (see Figure 4). These patterns and themes were condensed using classical content analysis to develop an initial framework for the data. Both the
frequency of a code and the number of participants that received that code were used to help develop the themes, patterns, and framework. The numbers were written next to the codes to develop an understanding of the data.

Figure 4. This figure illustrates the mind mapping process used to develop themes, patterns, and framework during data condensation process for the qualitative analysis.

After the third meeting, the researcher further refined the framework. The finalized framework was sent to the colleague for review. The colleague agreed with the framework as a representation of the teacher’s views. The detailed account of the themes, patterns, and framework is reported in the qualitative section of Chapter 4, Results.

Within the software program Dedoose, the researcher ran a reliability test on agreement of coding between the two researchers. The researcher took the test on the participant responses the colleague had coded (responses 1 through 61). The Cronbach’s kappa was calculated within Dedoose and yielded a report (Appendix F). The results of this analysis are reported in the construct validity section of Chapter 4.
Mixed Method Integration.

The mixed method research questions are, is there evidence relating quantitative results to the qualitative themes when the data converge? How and Why? To conduct the mixed methods data analysis, the researcher utilized Creswell and Plano Clark’s (2011) six-step data analysis specific to the convergent mixed methods design. These steps include:

1. Collect quantitative and qualitative data concurrently;
2. Independently analyze the quantitative data quantitatively and qualitative data qualitatively in ways best suited to answer the research questions;
3. Specify dimensions in order to compare the results from the two databases;
4. Specify what information will be compared across the dimensions;
5. Complete refined analysis to produce the needed comparison information; represent the comparisons; and,
6. Interpret how the combined results relate to and answer the questions.

The dimensions by which the results from the two databases were compared was determined by the results from the data analysis. The dimensions are representative of the four components derived from the quantitative factor analysis of the survey instrument, the qualitative themes and patterns that emerged within the data obtained from the survey, and the demographic characteristics of the participants. The information has been integrated to include both the quantitative and qualitative results. Through this cross tabulation of the quantitative variables with the qualitative themes (Creswell & Plano Clark, 2011) the researcher compared the data.
After the initial comparison of the data, the researcher used a technique called data transformation to help answer the mixed method research questions (Creswell & Plano Clark, 2011; Van Velzen, 2016). The qualitative codes within the themes were quantified using frequency of code within each theme within each demographic characteristic (Collingridge, 2013; Creswell & Plano Clark, 2011). To adjust for the unequal number of participants within each of the demographic characteristics the data was further transformed into ratio scores. The product of the data integration and transformation is depicted in a several joint displays relating the qualitative themes to quantitative variables (Chapter 4). The data in the joint displays has been analyzed using the demographic characteristics of license type, gender, urban or rural schools, and training. The analysis resulted in a more comprehensive understanding of the results. The final analysis guided the mixed method section of the discussion and implications for future action (Chapter 5).

The summary of the various dimensions of the study are included. Evidence, or lack thereof, for construct validity is presented. The researcher discusses the extent to which validation of the quantitative results has occurred when compared with the qualitative results.

**Research Permission and Ethical Considerations**

The University of Nevada, Reno’s Institutional Review Board (IRB), approved the study. The IRB application filled out for this research study was the Exempt, IRB-Flex: Minimal Risk, Non-Federally Funded Research, and Social/Educational. IRB Exempt approval for this research study included consent to utilize the interview data from the small qualitative study. The study was approved on March 16, 2016 (See
Appendix B). The approved consent form given to the participants served as the first page of the survey instrument (See Appendix C and E). The flyer distributed to the participants in their conference materials can be viewed in Appendix D.

**Limitations**

Several factors could limit the effectiveness of this study. The limitations for the qualitative portion include the researcher’s history, which may have influenced the coding of the data and effected the resulting themes. To decrease the risk of researcher bias, an additional highly qualified researcher helped with the qualitative data analysis. The lack of member checking or “descriptive triangulation (consistency between researcher and participants)” may decrease the trustworthiness of the data.

The limitations for the quantitative portion include the lack of a tested and validated instrument to use in working to answer the research questions. The survey instrument was created for the purpose of this study and there may be flaws in the instrument that were not identified. To help reduce the risks of flaws the instrument was field tested by experts in the field of education to address external reliability. A factor analysis was conducted on the instrument to test the model and Cronbach’s alpha was determined to address the internal validity. The repeated Mann Whitney U tests increase the risk of a Type 1 error. Additionally, this study relies heavily on self-reported survey data, which cannot be substantiated.

**Researcher Background and Skills**

The researcher received an undergraduate degree in Health Education and Health Science with a pre-med emphasis and a Master’s in Public Health. The researcher has been a Health Educator for nineteen years. Part of that time was spent teaching safer sex
education and sexual health to at-risk youth and people with or at risk of contracting HIV/AIDS. In addition, this researcher has taught adolescents and adults with moderate to severe emotional and behavior disorders for eight years in a residential facility. Sexual health education is important and continues to be a substantial aspect of this researcher’s career. Without comprehensive sexual health education, students, with or without disabilities are deprived of the knowledge to protect themselves from poor choices and from sexual predators.

The foundation for this study began five years ago, in 2011, after talking to Dr. Tammy Abernathy regarding this researcher’s background in public health, sexual health education, and brainstorming on how best to utilize this background knowledge to meet the needs of students with disabilities. Fighting for the civil rights and focusing on people that are underserved and marginalized led the researcher to disabilities studies. At that time, during a practicum, the researcher was exposed to the sexual health curriculum being taught to secondary students with disabilities; experiencing firsthand the deficiency of knowledge being presented to teenagers with disabilities.

This strong background in sexual health education and advocacy has increased the need to explore research bias. The researcher’s chair and committee members advised the need for an outside reviewer to aid in the qualitative methods of this study. The researcher purposefully chose a trusted colleague with a different educational background, who could help reduce research bias, enhancing the ability to find the truth within the participant’s responses to the qualitative questions.

The researcher’s background included the need to understand quantitative research. In both the researcher’s undergraduate and master’s level course work there was
an emphasis on quantitative research and methods. As a result, the researcher feels more at home with quantitative data. The researcher was struggling with the qualitative research process. In response to this struggle, the researcher’s colleague offered this quote, “In qualitative research we are looking for the ‘truth’ of the people being studied, their beliefs and understanding of the world or situation they are being asked about.” These words helped to remind the researcher of the important purpose of qualitative research and the need for mixed method research. These words became a guideline during the data analysis process.

The researcher has utilized the skills, knowledge, and experience acquired in the past five years to conduct and complete this research study. Additionally, the researcher has children with disabilities and close relatives with disabilities, who suffered due to lack of access to appropriate resources. This research study ties together professional and personal expertise, passion, and knowledge while seeking to advocate for the social welfare of people with disabilities.

**Summary**

Chapter 3 has thoroughly and explicitly explained the methods for data collection and analysis. The development of the survey instrument is described. The methods for the quantitative, qualitative, and mixed method data analysis are reviewed. Ethical and research permissions are addressed. Limitations and researcher background are presented. Chapter 4 will report the results of the data analysis process.
Chapter Four: Results

Overview

This chapter reports the results for each phase of this study, beginning with the demographic variables describing the study’s participants. The results from each phase of the data analysis are reported. Quantitative results are reported, followed by qualitative results, and concluding with the mixed methods results and joint display integrating quantitative and qualitative results.

Survey Response Rate

Three hundred and thirty copies of the survey were prepared to distribute to a portion of the 355 individuals that registered for an annual teacher conference in the Western United States. 194 copies were individually distributed at the conference, and the researcher was able to directly interact and verbally explain the purpose of the survey to each participant. Of the 194 copies, two participants lost their initial copy. These two were not counted in the final total, leaving 192 copies (not counting the two that were lost) handed out to participants. Of the 192 distributed surveys, 132 were returned. Of the 132 returned, two could not be used, because they were not filled out by licensed teachers; one of which was filled out by a paraprofessional and the other by a parent. These two surveys were not included in the data analysis. The final count of completed surveys was 130, 66 surveys not being returned. Of the surveys disseminated, .677 were returned. The survey response rate was 68%.

Demographic Characteristics

The demographic characteristics of the participants are enumerated in Table 5. Approximately, three-fourths of the participants were female and one-fourth male. The
participants ages range fairly evenly throughout the five age categories. The majority of the participants were Caucasian (87.7%), with the category of “Other” as the second highest (6.9%). The category of “Other” includes participants that wrote in answers such as “human being” and “not relevant.” Participants who identified as Hispanic were the third highest (3.1%). Approximately two-thirds (62.3%) of the participants reported working at rural schools and one-third (37.7%) at urban schools. Of the 130 participants, 95 reported having an Elementary Teaching License (grades kindergarten-8), 34 reported having a Secondary Teaching License (grades 7-12), and 45 reported having a Special Education Teaching License (kindergarten-12). A total of 174 licenses were reported, with at least one-third of the participants holding more than one type of teaching license (dual licensure). For the number of years working as a licensed teacher there were six categories with an even spread. The majority of participants had not received training in sexual health education (84.6%), 12.3% received training in comprehensive-based sexual health education, and 3.1% had received training in abstinence-based sexual health education.
Table 5
Demographic characteristics of survey participants (N = 130)

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>30</td>
<td>23.1%</td>
</tr>
<tr>
<td>Female</td>
<td>100</td>
<td>76.9%</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>20-29</td>
<td>11</td>
<td>8.5%</td>
</tr>
<tr>
<td>30-39</td>
<td>31</td>
<td>23.8%</td>
</tr>
<tr>
<td>40-49</td>
<td>35</td>
<td>26.9%</td>
</tr>
<tr>
<td>50-59</td>
<td>37</td>
<td>28.5%</td>
</tr>
<tr>
<td>60+</td>
<td>16</td>
<td>12.3%</td>
</tr>
<tr>
<td>Race/Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Caucasian</td>
<td>114</td>
<td>87.7%</td>
</tr>
<tr>
<td>Hispanic</td>
<td>4</td>
<td>3.1%</td>
</tr>
<tr>
<td>Black</td>
<td>1</td>
<td>.8%</td>
</tr>
<tr>
<td>Asian</td>
<td>2</td>
<td>1.5%</td>
</tr>
<tr>
<td>Other</td>
<td>9</td>
<td>6.9%</td>
</tr>
<tr>
<td>School Type</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban</td>
<td>49</td>
<td>37.7%</td>
</tr>
<tr>
<td>Rural</td>
<td>81</td>
<td>62.3%</td>
</tr>
<tr>
<td>*Type of License</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Elementary</td>
<td>95</td>
<td>73.1%</td>
</tr>
<tr>
<td>Secondary</td>
<td>34</td>
<td>26.2%</td>
</tr>
<tr>
<td>Special Education</td>
<td>45</td>
<td>34.6%</td>
</tr>
<tr>
<td>Number of Years Teaching</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 and under</td>
<td>27</td>
<td>20.8%</td>
</tr>
<tr>
<td>6-10</td>
<td>18</td>
<td>13.8%</td>
</tr>
<tr>
<td>11-15</td>
<td>25</td>
<td>19.2%</td>
</tr>
<tr>
<td>16-20</td>
<td>29</td>
<td>22.3%</td>
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<tr>
<td>21-25</td>
<td>14</td>
<td>10.8%</td>
</tr>
<tr>
<td>26+</td>
<td>17</td>
<td>13.1%</td>
</tr>
<tr>
<td>Sexual Health Training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No Training</td>
<td>110</td>
<td>84.6%</td>
</tr>
<tr>
<td>Abstinence-based</td>
<td>4</td>
<td>3.1%</td>
</tr>
<tr>
<td>Comprehensive-based</td>
<td>16</td>
<td>12.3%</td>
</tr>
</tbody>
</table>

*Several participants hold more than one type of teaching license

Quantitative Results

Both frequency and demographic statistics were run on each variable to check the data for errors. The demographic data was run for frequencies and percentages (Table 5).
Frequency and percentage data was also run for each Likert scale question. A factor analysis was conducted on the survey instrument to determine if any underlying structures existed. The factor analysis resulted in four components. Descriptive statistics were conducted to determine the mean scores for each component sorted by demographic characteristic. The quantitative question and hypothesis were addressed using the Mann Whitney U nonparametric statistic. Additional testing to find significant differences between elementary license versus no elementary license, secondary license versus no secondary license, gender, urban versus rural schools, and, sexual health education training was reported.

**Factor analysis.** Each of the 21 test variables were tested for assumptions, including, normality of variance, homogeneity of variance, and multicollinearity. The test variables were positively skewed distributions. The majority of the participant’s answers were 1 (not at all prepared) or 2 (minimally prepared) on the Likert scale. The positively skewed distributions supported the need for non-parametric tests. The test variables met the assumption for homogeneity of variance, having passed the Levene test with no significance.

Factor analysis was conducted to determine what, if any, underlying structures existed for measures on the 21 variables. Principal component analysis (PCA) was conducted utilizing orthogonal rotation (varimax). The Kaiser-Meyer-Olkin (KMO) measure verified the sampling adequacy for the analysis, KMO = .88 (‘great’ according to Field, 2009), and all KMO values for individual items were > .82, which is well above the acceptable limit of .5 (Field, 2009). Bartlett’s test of sphericity $\chi^2 (210) = 3998.29, \rho < .001$, indicated that correlations between items were sufficiently large for PCA.
The analysis produced a four-component solution, which was evaluated with the following criteria: eigenvalues, variance, scree plot, and residuals. An initial analysis was run to obtain eigenvalues for each component in the data. Four components had eigenvalues over .95 and in combination explained 82.38% of the variance. The scree plot was slightly ambiguous and showed inflexions that would justify retaining both components 2 and 4. There were 41 (19.00%) non-redundant residuals with absolute values greater than .05. The majority of values were less than .05 (81%), indicating a good model (Field, 2009).

After rotation, component 1 accounted for 26.52% of the total variance of the variables, component 2 accounted for 22.96%, component 3 accounted for 19.06%, and component 4 accounted for 13.85%. Table 6 shows the factor loadings after rotation. The items that cluster on the same components suggest that the first component represents psycho-social sexual health education, and included 6 of the 21 variables. These variables had positive loadings and addressed the psychological and social elements involved in teaching sexual health education. The second component, which included 8 of the 21 variables, had positive factor loadings, and represents the biological elements of sexual health education. The third component, which included 3 of the 21 variables, had positive factor loadings, and represents students’ disability categories. The fourth component, which included 4 of the 21 variables, had positive factor loadings, and represents teacher sexual health education training. At the conclusion of the factor analysis the instrument was named the Sexual Health Education and Disability (SHED) teacher knowledge instrument.
### Table 6

*Summary of exploratory factor analysis results for the SHED teacher knowledge instrument (N = 130)*

<table>
<thead>
<tr>
<th>Item</th>
<th>Rotated Factor Loadings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Component 1: Psycho-Social (ps-sed)</td>
</tr>
<tr>
<td>Personal safety (nd*)</td>
<td>.80</td>
</tr>
<tr>
<td>Personal safety (d*)</td>
<td>.83</td>
</tr>
<tr>
<td>Healthy relationships (nd)</td>
<td>.82</td>
</tr>
<tr>
<td>Healthy relationships (d)</td>
<td>.81</td>
</tr>
<tr>
<td>Gender identity (nd)</td>
<td>.75</td>
</tr>
<tr>
<td>Gender identity (d)</td>
<td>.74</td>
</tr>
<tr>
<td>Anatomy/physiology (nd)</td>
<td>.82</td>
</tr>
<tr>
<td>Anatomy/physiology (d)</td>
<td>.74</td>
</tr>
<tr>
<td>Puberty/development (nd)</td>
<td>.73</td>
</tr>
<tr>
<td>Puberty/development (d)</td>
<td>.68</td>
</tr>
<tr>
<td>Pregnancy/reproduction (nd)</td>
<td>.64</td>
</tr>
<tr>
<td>Pregnancy/reproduction (d)</td>
<td>.62</td>
</tr>
<tr>
<td>Sexually transmitted disease/HIV (nd)</td>
<td>.63</td>
</tr>
<tr>
<td>Sexually transmitted disease/HIV (d)</td>
<td>.56</td>
</tr>
<tr>
<td>High-incidence disabilities</td>
<td>.71</td>
</tr>
<tr>
<td>Low-incidence disabilities</td>
<td>.77</td>
</tr>
<tr>
<td>Physical disabilities</td>
<td>.72</td>
</tr>
<tr>
<td>Abstinence (nd)</td>
<td></td>
</tr>
<tr>
<td>Abstinence (d)</td>
<td></td>
</tr>
<tr>
<td>Comprehensive (nd)</td>
<td></td>
</tr>
<tr>
<td>Comprehensive (d)</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th></th>
<th>Eigenvalues</th>
<th>% of Variance</th>
<th>Cronbach’s α</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>5.57</td>
<td>26.52</td>
<td>.96</td>
</tr>
<tr>
<td></td>
<td>4.82</td>
<td>22.96</td>
<td>.97</td>
</tr>
<tr>
<td></td>
<td>4.00</td>
<td>19.06</td>
<td>.88</td>
</tr>
<tr>
<td></td>
<td>2.91</td>
<td>13.85</td>
<td>.88</td>
</tr>
</tbody>
</table>

* nd = knowledge for students without disability; d = knowledge for students with disability

**Internal reliability (Cronbach’s α).** The internal reliability of the survey instrument was measured using Cronbach’s alpha (Cronbach, 1951; Laerd Statistics, 2015). Cronbach’s alpha provides an overall reliability coefficient for a set of variables/questions (Laerd Statistics, 2015). The higher value of Cronbach’s alpha indicates a high level of internal reliability (2015). The survey instrument sought to
measure four main components or sub-scales. The first sub-scale, psycho-social sexual health education (ps-sed), consisted of six questions, and had a high level of internal reliability, Cronbach’s $\alpha = .96$. The second sub-scale, biological sexual health education (b-sed), consisted of eight questions, and had a high level of internal reliability, Cronbach’s $\alpha = .97$. The third subscale, disability (dcs), consisted of three questions, and had a high level of internal reliability, Cronbach’s $\alpha = .88$. The fourth subscale, sexual health education training (shet), consisted of four questions, and had a high level of internal reliability, Cronbach’s $\alpha = .88$. Lastly, the total survey instrument was checked for internal reliability (21 questions). The SHED teacher knowledge instrument had a high level of internal reliability, as determined by a Cronbach’s $\alpha = .97$.

**Expert reviewers.** External reliability was addressed prior to disseminating the survey instrument. Ten expert reviewers piloted the survey, each making suggestions and revisions to improve the quality of the survey. Expert reviewers included licensed specialists in the field of Special Education (4), Doctoral Candidates in Education (2), and Professors in a College of Education (4).

**Summary of factor analysis.** In order to determine if the survey instrument could be used to answer the quantitative research question a factor analysis had to be conducted. The findings from the principal component analysis (PCA) conducted for the factor analysis on the instrument indicates a good model (Field, 2009). This result demonstrates that the four identified components are valid and the instrument is testing those components of teacher knowledge regarding sexual health education. The total factor score relates to the components; though 4 separate components emerged, all
components relate to each other. These results indicate that the SHED teacher knowledge instrument is measuring one overall item with 4 closely related components.

Psycho-social knowledge (ps-sed), component one, included six questions on personal safety, healthy relationships, and gender identity (questions 15, 16, & 21-24 on the instrument). Biological knowledge (b-sed), component two, included eight questions on anatomy/physiology, puberty/development, pregnancy/reproduction, and sexually transmitted disease/HIV (questions 11-14 & 17-20 on the instrument). Disability categories for students (dcs), component three, indicates overall knowledge readiness/preparation to teach students that fall within three categories. The questions for dcs included questions for high-incidence, low-incidence, and physical disabilities (questions 27-29 on the instrument). Sexual health education training (shet), component four, included four questions on abstinence-based sexual health education and comprehensive-based sexual health education (questions 3-6 on the instrument). The factor analysis results coupled with the reliability test indicate a good instrument. Though further testing is needed to confirm this data, these initial results indicate that the quantitative data resulting from this instrument may have both validity and reliability, and could hold up with future investigation and replication.

**Descriptive statistics.** The purpose of the section is to report the mean scores for the total instrument and component scores by the demographic characteristics. The overall mean scores and the standard deviation for each of the instrument components and for the total instrument were determined (See Figure 5). The mean scores for each of the instrument components and the total instrument mean score by demographic characteristic were determined and compared (See Figures 5 through 14). The scale from
the instrument ranges from a score of 1 to a score of 6 (1 = not at all prepared, 2 = minimally prepared, 3 = somewhat prepared, 4 = prepared, 5 = well prepared, and 6 = very well prepared). The statistical results testing the research hypothesis are reported in the next section. In addition to testing for differences in license type, the researcher tested for differences between gender, type of school (urban or rural), and training.

Figure 5. Comparison of mean scores and standard deviation from the four components of SHED

Figure 5 depicts the comparison of mean scores for each of the four components of the instrument for all participants. The mean scores on the each of the four components and for the total instrument are less than 3 (somewhat prepared), with components 2, 3, 4 mean scores and total instrument mean approaching 2 (minimally prepared). The standard deviations for each component and the total for all questions ranged from 1.18 – 1.49.
Figure 6. Comparison of mean scores from components on SHED by special education teaching license

Figure 6 depicts the mean scores for teachers with a special education license and those without the license. The mean scores for each of the components and for the total instrument are less than 3 (somewhat prepared). The mean scores for component 1 for both teachers with a special education license and for teachers without approach a score of 3 (somewhat prepared). The mean scores for components 2, 3, 4, and for the total mean approach a score of 2 (minimally prepared) for teachers with a special education license and for teachers without a special education license. For teachers with a special education license the means scores range from 1.84 in component 4, sexual health education training (shet) to 2.74 in component 1, psycho-social sexual health education knowledge (ps-sed). For teachers without a special education license the means scores range from 1.78 in component 3, disability (dcs) to 2.90 in component 1, psycho-social sexual health education knowledge (ps-sed).
Figure 7. Comparison of mean scores from components on SHED by elementary teaching license

Figure 7 depicts the mean scores for teachers with an elementary teaching license and teachers without the license. The mean scores for teachers without an elementary teaching license appear to be higher in each of the components and for the total instrument. For teachers with an elementary teaching license the mean scores range from 1.72 in component 3, disability (dcs) to 2.65 in component 1, psycho-social sexual health education knowledge (ps-sed). For teachers without an elementary teaching license the mean scores range from 2.05 in component 4, sexual health education training (shet) to 3.37 in component 1, psycho-social sexual health education knowledge (ps-sed).
Figure 8. Comparison of mean scores from components on SHED by secondary teaching license

Figure 8 depicts the mean scores for teachers with a secondary teacher license and those without the license. The mean scores for teachers with a secondary license appear to be higher for each component and for the total instrument when compared to the mean scores for those without a secondary license. For teachers with a secondary teaching license the mean scores range from 2.37 in component 4, sexual health education training (shet) to 3.47 in component 1, psycho-social sexual health education knowledge (ps-sed). For teachers without a secondary teacher license the mean scores range from 1.61 in component 3, disability (dcs) to 2.63 in component 1, psycho-social sexual health knowledge (ps-sed).
Figure 9. Comparison of mean scores from components on SHED by gender

Figure 9 depicts the mean scores for male and female teachers. The mean scores for male teachers appear to be higher than females scores in each of the components and for the total instrument. For male teachers the mean scores range from 2.23 in component 3, disability (dcs) to 3.22 in component 1, psycho-social sexual health knowledge (ps-sed). For female teachers the mean scores range from 1.72 in component 3, disability (dcs) to 2.73 in component 1, ps-sed.

Figure 10. Comparison of mean scores from components on SHED by urban and rural schools

For urban schools, the mean scores range from 2.63 in component 1, ps-sed to 2.37 in component 2, b-sed. For rural schools, the mean scores range from 2.16 in component 1, ps-sed to 1.92 in component 3, dcs.
Figure 10 depicts the mean scores for teachers in urban and rural schools. The mean scores for urban and rural schools appear to be similar for each component and the total instrument. The mean scores for teachers in urban schools range from 1.71 in component 3, disability (dcs) to 2.63 in component 1, ps-sed. The mean scores for teachers in rural schools range from 1.92 in component 3, dcs to 2.98 in component 1, ps-sed.

Figure 11 depicts mean scores for teachers who have not received sexual health education training (N = 100), have received abstinence-only sexual health education training (N = 4), and teachers that have received comprehensive sexual health education training (N = 16). The mean scores for teachers that have received training appear to be higher in each of the components and for the total instrument. For teachers that have not received sexual health education training the mean scores range from 1.68 in component 4, sexual health education training (shet) to 2.65 in component 1, ps-sed. For teachers that
have received abstinence-only sexual health education training the mean scores range from 1.67 in component 3, disability (dcs) to 4.13 in component 1, ps-sed. For teachers that have received comprehensive sexual health education training the mean scores range from 2.79 in component 3, dcs to 3.83 in component 1, ps-sed.

**Figure 12.** Comparison of mean scores from components on SHED by age

Figure 12 depicts the mean scores for teachers by age. There are five different age ranges for the teachers who participated in this study 20-29 (N = 11), 30-39 (N = 31), 40-49 (N = 35), 50-59 (N = 37), and, 60+ (N = 16). For teachers in their 20s the mean scores range from 1.79 in component 3, disability (dcs) to 2.98 in component 1, psycho-social sexual health education knowledge (ps-sed). For teachers in their 30s the mean scores range from 1.51 in component 4, sexual health education training (shet) to 2.85 in component 1, ps-sed. For teachers in their 40s the mean scores range from 1.62 in component 3, dcs to 2.49 in component 1, ps-sed. For teachers in their 50s the mean scores range from 1.92 in component 3, dcs to 2.90 in component 1, ps-sed. For teachers...
60 and older the mean scores range from 2.40 in component 3, dcs to 3.40 in component 1, ps-sed.

**Figure 13.** Comparison of mean scores from components on SHED by race/ethnicity

Figure 13 depicts the mean scores for teachers by ethnicity and race. There are six different categories for ethnicity/race, which are Caucasian (N = 114), Hispanic (N = 4), Black (N = 1), Asian (N = 2), Native American (N = 1), and Other (N = 8). The group “Other” includes participants who left the answer blank, wrote “not applicable” or wrote “human race” and one Basque. For teachers who reported as Caucasian the mean scores range from 1.82 in component 3, disability (dcs) to 2.79 in component 1, psycho-social sexual health education knowledge (ps-sed). For teachers who reported as Hispanic the mean scores range from 1.25 in component 3, dcs to 3.04 in component 1, ps-sed. For the teacher who reported as Black or African American the mean score in each component and for the total instrument was 1.00. For the teachers who reported as Asian the mean scores range from 1.00 in component 3 (dcs) to 2.33 in component 1 (ps-sed). For the teacher who reported as Native American the mean scores range from 1.50 in component
1 (ps-sed) to 2.75 in component 2 (b-sed). For the teachers that reported as Other the mean scores range from 0 for component 4 (shet) to 4.04 for component 1 (ps-sed).

![Number of Years Teaching Mean Score Distribution](image)

*Figure 14. Comparison of mean scores from components on SHED by number of years teaching*

Figure 14 depicts the mean scores for teachers by the number of years working as a licensed teacher. There are six categories broken down into five year increments, 5 years and under (N = 27), 6-10 years (N = 18), 11-15 years (N = 25), 16-20 years (N = 29), 21-25 years (N = 14), and 26 or more (N = 17). For each component and the total instrument teachers who have had their teaching license for 26 or more years appear to have the highest mean scores. Teachers who have had their teaching licenses for 6 to 10 years appear to have the lowest mean scores in each component and for the total instrument. For teachers with 5 years or less of experience the mean scores range from 2.04 in component 3, disability (dcs) to 3.30 in component 1 (ps-sed). For teachers with 6 to 10 years of experience the mean scores range from 1.22 in component 3 (dcs) to 2.18 in component 1 (ps-sed). For teachers with 11 to 15 years of experience the mean scores range from 1.48 in component 3 (dcs) to 2.45 in component 1 (ps-sed). For teachers with
16 to 20 years of experience the mean scores range from 1.84 in component 3 (dcs) to 2.79 in component 1 (ps-sed). For teachers with 21-25 years of experience the mean scores range from 1.74 in component 3 (dcs) to 2.55 in component 1 (ps-sed). For teachers with 26 years or more experience the mean scores range from 2.78 in component 3 (dcs) to 3.82 in component 1 (ps-sed).

**Summary of descriptive statistics.** The researcher wanted to know the overall scores for the instrument and if there were potential differences between various demographic data. The mean scores informed the researcher about the teacher’s knowledge and preparation rating’s on the instrument. This data was not available through the non-parametric tests for differences, as these tests calculated the mean ranks and not the mean scores. Looking through the mean scores by demographic categories helped the researcher understand how this data relates back to previous literature. The mean scores also served to promote data integration for the mixed methods findings.

Descriptive statistics were calculated to determine the overall scores for each component of the instrument and for the total instrument; to what degree are teachers knowledgeable and prepared concerning sexual health education? Descriptive statistics, mean scores and standard deviation were calculated for each component of the instrument and for the total instrument on the entire sample of participants. The mean score for each component was low, hovering close to a score of two (2 = minimally prepared). Teachers in this sample report that they are minimally prepared to teach sexual health education to students with or without disabilities.

Mean scores were also conducted separating the participants by demographic categories for each of the four instrument components and for the total instrument. The
demographic categories included license type (special education, elementary, and secondary), gender, type of school (rural or urban), sexual health training (abstinence-based, comprehensive-based, or no training), age, ethnicity, and number of years spent teaching. Across all demographic categories, component one, psycho-social knowledge, received the highest scores, close to a score of three (3 = somewhat prepared). With a few exceptions within age ranges, ethnicity, and number of years teaching, teachers reported that they were somewhat prepared to teach psycho-social knowledge to students with and without disabilities.

The mean score of four (4 = prepared) was revealed in three categories: the first category was for abstinence-based sexual health education training for component one, psycho-social knowledge; the next category was for other in race/ethnicity for component one, psycho-social knowledge; and, the last category was for 26 or more years teaching within component one, psycho-social knowledge.

**Hypothesis testing.** The quantitative research question is, “What differences exist in sexual health education knowledge and preparation between licensed special education teachers and teachers without a special education license?” The null hypothesis (H₀) stating there will be no difference between the populations was tested using a Mann-Whitney U test. Effect sizes were reported using the correlation coefficient, r, as suggested by Field (2009).

The Mann-Whitney U tests were conducted to evaluate the hypothesis that licensed special educators will differ, on average, when compared to teachers without a special education license on the SHED teacher knowledge instrument. The Mann-Whitney U test was conducted to determine if there were differences in the four
components or the total instrument mean score between teachers with a special education license \((N = 45)\) and teachers without a special education license \((N = 85)\).

The Mann-Whitney \(U\) tests failed to reject the null hypothesis for each of the four components and for the total instrument. Licensed special education teacher knowledge does not differ significantly from the knowledge of teachers without a special education license when teaching sexual health education to students with or without disabilities (see Table 7).

**Table 7**

*SHED Teacher Knowledge Statistics Comparing Teachers with a Special Education Teaching License to Those Without*

<table>
<thead>
<tr>
<th></th>
<th>ps-sed</th>
<th>b-sed</th>
<th>dcs</th>
<th>shet</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>1738.500</td>
<td>1707.500</td>
<td>1807.000</td>
<td>1766.500</td>
<td>1761.500</td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>2773.500</td>
<td>2742.500</td>
<td>5462.000</td>
<td>2801.500</td>
<td>2796.500</td>
</tr>
<tr>
<td>(Z)</td>
<td>-.855</td>
<td>-1.012</td>
<td>-.558</td>
<td>-.740</td>
<td>-.740</td>
</tr>
<tr>
<td>Asymp. Sig.</td>
<td>.392</td>
<td>.311</td>
<td>.577</td>
<td>.459</td>
<td>.459</td>
</tr>
<tr>
<td>(2-tailed)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

a. Grouping Variable: special education

**Additional results.** The results of the survey were further examined by conducting tests to investigate whether or not any differences occurred between the medians of the demographic variables and the SHED teacher knowledge instrument.

The Mann-Whitney \(U\) test was utilized to test for differences between demographic variables among the survey components. The group medians were compared between: licensed elementary teachers and teachers without an elementary license, licensed secondary teachers and teachers without a secondary license, male and female licensed teachers (gender), teachers working in rural schools and teachers working in urban schools, and, teachers that had received training in sexual health education and those that had not received training in sexual health education.
**Elementary teaching license.** When testing the difference between licensed elementary teachers and teachers without an elementary teaching license one test was significant. The scores for component 1, psychosocial sexual health education (ps-sed), for teachers with an elementary teaching license \((N = 95; \text{mean rank } = 61.29)\) were significantly lower compared to teachers that did not have an elementary teaching license \((N = 35; \text{mean rank } = 76.91)\), \(U = 1263.00, z = -2.106, p = .035, r = -.19\). Teachers with elementary licenses reported less knowledge concerning the psychosocial aspects of sexual health education (e.g. gender identity, healthy relationships, and personal safety) than teachers that did not have an elementary teaching license.

The Mann-Whitney \(U\) tests failed to reject the null hypothesis for components 2 thru 4, and for the total instrument. Licensed elementary teacher knowledge does not differ significantly compared to the knowledge of teachers *without* an elementary license regarding biological sexual health education (b-sed), students with disabilities (dcs), sexual health education training (shet), and total average scores (See Table 8).

**Table 8**

<table>
<thead>
<tr>
<th></th>
<th>ps-sed</th>
<th>b0sed</th>
<th>dsc</th>
<th>shet</th>
<th>total mean of all 21 variables</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>1263</td>
<td>1485</td>
<td>1375.5</td>
<td>1595.5</td>
<td>1391</td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>5823</td>
<td>6045</td>
<td>5935.5</td>
<td>6155.5</td>
<td>5951</td>
</tr>
<tr>
<td>Z</td>
<td>-2.106</td>
<td>-0.94</td>
<td>-1.629</td>
<td>-0.364</td>
<td>-1.427</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>0.035</td>
<td>0.347</td>
<td>0.103</td>
<td>0.716</td>
<td>0.154</td>
</tr>
</tbody>
</table>

a. Grouping Variable: Elementary Teaching License

**Secondary teaching license.** The results of the Mann-Whitney \(U\) tests that compared licensed secondary teachers \((N = 34)\) to teachers without a secondary license \((N = 96)\) were significantly different for each of the four components and for the total
average of scores (see Table 9). Licensed secondary teachers scored significantly higher for each of the four sub-scales and for the total average of score. Teachers with secondary teaching licenses reported more knowledge within each component of the SHED teacher knowledge instrument compared to teachers that do not have a secondary teaching license.

### Table 9

*SHED Teacher Knowledge Statistics Comparing Teachers with an Secondary Teaching License to Those Without*

<table>
<thead>
<tr>
<th>Component</th>
<th>ps-sed</th>
<th>b-sed</th>
<th>dcs</th>
<th>shet</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>1152.500</td>
<td>1084.500</td>
<td>1125.000</td>
<td>1198.000</td>
<td>1105.500</td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>5808.500</td>
<td>5740.500</td>
<td>5781.000</td>
<td>5854.000</td>
<td>5761.500</td>
</tr>
<tr>
<td>Z</td>
<td>-2.551</td>
<td>-2.927</td>
<td>-2.905</td>
<td>-2.381</td>
<td>-2.792</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.011</td>
<td>.003</td>
<td>.004</td>
<td>.017</td>
<td>.005</td>
</tr>
</tbody>
</table>

a. Grouping Variable: secondary

Component 1 (ps-sed) scores for teachers with a secondary teaching license (mean rank = 79.60) were significantly higher when compared to teachers that did not have a secondary teaching license (mean rank = 60.51), $U = 1152.50, z = -2.551, p = .011, r = -.22$. Component 2 (b-sed) scores for teachers with a secondary teaching license (mean rank = 81.60) were significantly higher when compared to teachers that did not have a secondary teaching license (mean rank = 59.80), $U = 1084.50, z = -2.927, p = .003, r = -.26$. Component 3 (dcs) scores for teachers with a secondary teaching license (mean rank = 80.41) were significantly higher when compared to teachers that did not have a secondary teaching license (mean rank = 60.22), $U = 1125.00, z = -2.905, p = .004, r = -.26$. Component 4 (shet) scores for teachers with a secondary teaching license (mean rank = 78.26) were significantly higher when compared to teachers that did not have a secondary teaching license (mean rank = 60.98), $U = 1198.00, z = -2.381, p = \ldots$
.017, \( r = - .21 \). For total instrument score, teachers with a secondary teaching license (mean rank = 78.26) were significantly higher than teachers that did not have a secondary teaching license (mean rank = 60.98), \( U = 1105.50, z = - 2.792, p = .005, r = - .25 \).  

**Gender.** The results of the Mann-Whitney \( U \) tests that compared gender, males (\( N = 30 \)) to females (\( N = 100 \)), were significantly different for three of the four components and for the total instrument (see Table 10). The male participants reported significantly more knowledge in three components of the SHED teacher knowledge instrument and significantly more knowledge overall compared to female participants. Male participants did not significantly differ in reported knowledge when compared to female participants for component 1, psycho-social sexual health education.

**Table 10**  

<table>
<thead>
<tr>
<th>SHED Teacher Knowledge Statistics Comparing Teachers by Gender</th>
<th>ps-sed</th>
<th>b-sed</th>
<th>dcs</th>
<th>shet</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>1193.000</td>
<td>1045.500</td>
<td>1044.000</td>
<td>1111.500</td>
<td>1058.500</td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>6243.000</td>
<td>6095.500</td>
<td>6094.000</td>
<td>6161.500</td>
<td>6108.500</td>
</tr>
<tr>
<td>Z</td>
<td>-1.704</td>
<td>-2.534</td>
<td>-2.725</td>
<td>-2.223</td>
<td>-2.442</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.088</td>
<td>.011</td>
<td>.006</td>
<td>.026</td>
<td>.015</td>
</tr>
</tbody>
</table>

a. Grouping Variable: gender

Component 2 (b-sed) scores for males (mean rank = 80.65) were significantly higher when compared to females (mean rank = 60.69), \( U = 1045.50, z = - 2.534, p = .011, r = - .22 \). Component 3 (dcs) scores for males (mean rank = 80.70) were significantly higher when compared to females (mean rank = 60.94), \( U = 1044.00, z = - 2.725, p = .006, r = - .24 \). Component 4 (shet) scores for males (mean rank = 78.45) were significantly higher when compared to females (mean rank = 61.62), \( U = 1111.50, z = - 2.223, p = .026, r = - .20 \). For total instrument score, males (mean rank = 80.22) were
significantly higher when compared to females (mean rank = 61.09), \( U = 1058.50 \), \( z = -2.442 \), \( p = .015 \), \( r = -.21 \).

**Urban or rural school.** The results of the Mann-Whitney \( U \) tests that compared school type, urban \(( N = 49 \) to rural \(( N = 81 \) for each component and for the total instrument score were not significant (see Table 11).

### Table 11

**SHED Teacher Knowledge Statistics Comparing Licensed Teacher Knowledge by Urban vs. Rural School**

<table>
<thead>
<tr>
<th></th>
<th>ps-sed</th>
<th>b-sed</th>
<th>dcs</th>
<th>shet</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney ( U )</td>
<td>1780.500</td>
<td>1854.000</td>
<td>1902.500</td>
<td>1830.000</td>
<td>1796.500</td>
</tr>
<tr>
<td>Wilcoxon ( W )</td>
<td>3005.500</td>
<td>3079.000</td>
<td>3127.500</td>
<td>3055.000</td>
<td>3021.500</td>
</tr>
<tr>
<td>( Z )</td>
<td>-.984</td>
<td>-.633</td>
<td>-.426</td>
<td>-.769</td>
<td>-.904</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.325</td>
<td>.527</td>
<td>.670</td>
<td>.442</td>
<td>.366</td>
</tr>
</tbody>
</table>

a. Grouping Variable: Urban or Rural

**Received sexual health education training.** The results of the Mann-Whitney \( U \) tests that compared teachers who had received sexual health education training \(( N = 20 \) to teachers who had received no training \(( N = 110 \) were significantly different for each component and for the total instrument score (see Table 12). Teachers who had received sexual health education training scored significantly higher on each of the components and for the total instrument score. Teachers with training report more knowledge for every component of the SHED teacher knowledge instrument compared to teachers that have not had training in teaching sexual health education.
Table 12
SHED teacher knowledge comparing teachers who received sexual health education training and those that did not

<table>
<thead>
<tr>
<th></th>
<th>ps-sed</th>
<th>b-sed</th>
<th>dcs</th>
<th>shet</th>
<th>total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mann-Whitney U</td>
<td>673.00</td>
<td>533.00</td>
<td>736.50</td>
<td>323.50</td>
<td>520.00</td>
</tr>
<tr>
<td>Wilcoxon W</td>
<td>6778.00</td>
<td>6638.00</td>
<td>6841.50</td>
<td>6428.50</td>
<td>6625.00</td>
</tr>
<tr>
<td>Z</td>
<td>-2.767</td>
<td>-3.692</td>
<td>-2.537</td>
<td>-5.189</td>
<td>-3.746</td>
</tr>
<tr>
<td>Asymp. Sig. (2-tailed)</td>
<td>.006</td>
<td>.000</td>
<td>.011</td>
<td>.000</td>
<td>.000</td>
</tr>
</tbody>
</table>

a. Grouping Variable: received sexual health education training

Component 1 (ps-sed) scores for teachers with training (mean rank = 86.85) were significantly higher when compared to teachers with no training (mean rank = 61.62), $U = 673.00$, $z = -2.767$, $p = .006$, $r = -.24$. Component 2 (b-sed) scores for teachers with training (mean rank = 93.85) were significantly higher when compared to teachers with no training (mean rank = 60.35), $U = 533.00$, $z = -3.692$, $p < .001$, $r = -.32$. Component 3 (dcs) scores for teachers with training (mean rank = 83.68) were significantly higher when compared to teachers with no training (mean rank = 62.20), $U = 736.50$, $z = -2.537$, $p = .011$, $r = -.22$. Component 4 (shet) scores for teachers with training (mean rank = 104.33) were significantly higher when compared to teachers with no training (mean rank = 58.44), $U = 323.50$, $z = -5.189$, $p < .001$, $r = -.46$. For total instrument score, teachers with training (mean rank = 94.50) differed significantly from teachers with no training (mean rank = 60.23), $U = 520.00$, $z = -3.746$, $p < .001$, $r = -.33$.

Summary of Mann Whitney U Tests. No significant differences were found for the components of the SHED teacher knowledge instrument between teachers with a special education and those without the license. In addition to testing the research hypothesis, statistical tests were used to determine if there were differences between
teachers who had an elementary license, secondary license, between genders, urban or rural school, and, if trained in sexual health education (abstinence-based and comprehensive-based sexual health education teacher training were combined to increase the number). Teachers with an elementary teaching license scored significantly lower in component 1, psycho-social health education, than teachers without the license. Teachers with a secondary teaching license scored significantly higher in all four components of SHED and for the total score of the instrument. Males scored significantly higher than females in components 2 (b-sed), 3 (dcs), and 4 (shet) and for the total instrument. No significant differences were found between teachers in urban and rural schools. Teachers who have received sexual health education training scored significantly higher for each of the four components and for the total instrument score.

**Qualitative Results**

The qualitative data analysis was driven by the research question, “how do licensed teachers describe their views of teaching sexual health education to students with and without disabilities?” This section provides detailed results from the qualitative analysis. The two main themes derived from the analysis are explained, including descriptions of the subthemes found under each main theme. To further depict the themes, the codes used for each quote are listed in parenthesis and italicized. Refer to Table 4, pp. 83-84 for complete list of codes. The section concludes with the framework developed based on the themes and a visual representation of the qualitative results.

The teachers’ answers to the qualitative questions were driven by their beliefs and ethics. The participants answered the questions effectively, and often thoroughly with their beliefs and ethics woven throughout their answers, as teacher 97 states, “I believe
this is a conversation that needs to be handled at home, based on the family values and beliefs” (beliefs/ethics, parent/family only, teaching sexual health education [TSE], against TSE, disability – teaching students). These beliefs and ethics, though at times conflicting, are evident throughout their responses and found within each of the two main themes developed. The concept of concern is embedded within each answer provided by the teachers and is aligned with their beliefs and ethics. This concern is exemplified throughout the teachers’ responses, teacher 78 states in response to the training questions:

I’m not sure – I know I have received nothing as far as prep for this area.

Concerned that given all areas that are mandated content and assessed with high stakes assessment – it may be put to the way side. It’s critical – but?? Should at least be addressed in teacher prep. (sexual health education training [SHET], lack of exposure – SHE, lack of exposure – disabilities, level of training, college coursework)

This teacher is concerned about support, lack of training, and fears that there will not be enough time to incorporate the subject within the demands of the profession. The overarching concept of concern derives from statements regarding: the need for various forms of support, the fear and concern due to the lack of support, and the concern regarding type of curriculum, including who should teach the students with and without disabilities.

The two themes that emerged from the data were training and curriculum. The coding process resulted in identifying specific views of the teachers within these two main themes (Table 4, in Chapter 3). The mind mapping process allowed the researcher and the co-coder to visualize the patterns within the teachers’ responses and develop
subthemes. The themes are sound, as the qualitative questions focused on the views of licensed teachers regarding both the teaching of sexual health education and their views regarding training to teach sexual health education.

**Training.** Within training, the participants identified the need for training in district/state policies, standards, and content (biological, psycho-social, abstinence-based, comprehensive based, professionalism, sensitivity, disability). The teachers expressed an array of different levels of training needed in order to teach sexual health education. The levels of training suggested include: professional license in either health education or sexual health education, endorsement in sexual health education, college coursework, professional development, internship, and several participants gave a general answer that more training is needed. Though this study includes a strong representation of teachers that support training to teach sexual health education, it is imperative to lend voice to the few teachers that negated the need for training due to their belief that sexual health should be taught at home and not within the school.

**Levels of training.** The attainment of a degree in the content area or an endorsement is suggested by several participants, as exemplified by teacher 62, “Teachers should have a health degree or endorsement. I wouldn’t feel comfortable teaching the course with my lack of knowledge” *(SHET, level of training, license/endorsement – health education, lack of exposure – SHE)*. The concern regarding lack of knowledge is expressed by numerous participants, as teacher 91 states:

I would need to have a lot more knowledge and training than I have, which is zero. I think the risk of sexual behaviors, STDs, etc. with certain disabilities is SO high, yet my guess is that sex ed is very controversial. Definitely needs to
HAPPEN! (SHET, lack of exposure – SHE, lack of exposure – disabilities, disability – teacher training, disability)

This teacher has not received training, the support for sexual health education is evident, for both students with and without disabilities.

College coursework as training is supported by teacher 21, who states that “Every teacher should be required to take at least one course in the area” (SHET, level of training, college coursework). Not only does this teacher support the need for college coursework, the teacher emphasizes that every teacher should be required to complete a course in sexual health education.

Professional development options are mentioned within the responses. The need for professional development that includes a biological component is supported by teacher 117, who states that training should include “professional development classes, biology, immunology” (biological sexual health education knowledge [BSHEK], SHET, level of training, professional development [PD]). The need for training in psycho-social development is also supported. Teacher 19 states, “The training needs to include social emotional human development, social open minded – comprehensive in all areas” (psychological-social sexual health education knowledge [PSSHEK], SHET, level of training, comprehensive training). Additionally, this teacher supports training that is comprehensive-based and the need for an open-minded approach. The need for comprehensive-based sexual health training was further endorsed by teacher 128 who responded, “I believe this is an important topic and all teachers dealing with adolescents should be prepared to discuss, if appropriate, in a comprehensive meaningful way” (SHET, level of training, comprehensive training).
Standards, sensitivity to diversity, and policy. The need for standards is discussed by several teachers. For example, teacher 55 states, “Teachers need to have appropriate standards and a good curriculum. They need training and support to deliver instruction” (SHET, levels of training, more+). Standards are also mentioned by teacher 11, who wrote “Teachers should receive standardized training on content and sensitivity” (SHET, levels of training, more+). The need for sensitivity training in addition to standardization is supported by this teacher.

The concept of sensitivity is further supported by teacher 13 who states, “This is difficult. A teacher should be given information that is current and pertinent, but also given ways to keep their opinions and values separate” (beliefs/ethics, SHET, levels of training). Teacher 94 mentioned religion in his/her response, stating, “Training for teachers regarding sexual health education should include many trainings, even perhaps religious beliefs and background” (beliefs/ethics, SHET, levels of training, PD).

Training based upon school district policy and approval is incorporated in the response from teacher 51:

Well, assuming the school district has approval, and is willing to take the heat, and you are in fact going to teach this, I believe teachers should be “highly qualified” through adequate coursework, just like any other subject. I also believe they should be assigned mentors - this could be done via e-mail, Skype, twitter, etc. so that the mentor didn’t necessarily have to be in that town or at that school. (SHET, levels of training, college coursework, license/endorsement, other)
This teacher highlights the need for teachers to be highly qualified, stating the need for sexual health to be treated as another content area. The need for mentorship, regardless of geography is also endorsed by this teacher.

*Disability.* Disability was also considered by the teachers in regard to training. Teacher 32 states, “I believe teachers should receive a least three-days training to teach students with disabilities at their developmental level” (*SHET, levels of training, PD, disability – teacher training*). This teacher specifically comments on the need for teachers to have at least some training regarding special education prior to teaching sexual health to students with disabilities. Teacher 7 states, “Teachers should have to attend specific classes specific to teaching sexual health education with extra training for students with disabilities” (*SHET, levels of training, college coursework, disability – teacher training*). The teacher is not specific on what type or length of coursework, but the need for additional training regarding students with disabilities is noteworthy.

*Lack of knowledge.* For some teachers, concern regarding lack of knowledge was coupled with a strong belief that teachers should not teach sexual health education. This is exemplified by teacher 45, “I don’t think teachers should be responsible. I feel that health professionals should be doing it. I have NO idea what to teach/tell them. If we are required, there should be training” (*belief/ethics, SHET, levels of training, license/endorsement – health education, against teacher training*). These teachers still supported the need for sexual health education, but they did not feel that teachers should be put in a position to teach the content. These concerns are also expressed by teacher 30:

I believe that teachers should not teach sex-ed to students. It should be taught by counselors or sex-ed teachers. It makes students uncomfortable around their male
teachers. Teachers should be given some PD (professional development) around it though, so they can answer appropriately should questions arise. They should NOT be the primary teachers of it!!! (beliefs/ethics, TSE, SHET, against teaching sexual education, levels of training, PD)

The desire for some training is evident, along with the strong concern that teachers should not be expected to teach the content.

Though uncommon in this sample of teachers, the belief in abstinence only sexual health education training was strongly stated by some teachers. The strong beliefs and ethics surrounding this view is exemplified by teacher 101, “The only absolute successful and protective model is abstinence, this is even more important for students with disabilities, for their life choices and responsibilities” (TSE, only teaching abstinence, disability – teaching students, abstinence).

A smaller number of teachers strongly express the view that sexual health education has no place in schools. Teacher 95 states, “Teachers should not be teaching sexual health education, parents should” (beliefs/ethics, parent/family only, SHET, against teacher training). Teacher 10 states, “Parents should teach their children about sex, not schools!!” (beliefs/ethics, parent/family only, TSE, against teacher training) and, teacher 61 states, “I think these concepts should be taught at home” (beliefs/ethics, parent/family only, SHET).

Collaboration. Collaboration was revealed as one of the subthemes within training. The responses from the teachers included the concept of working with and/or receiving approval from parents, family, and the community. Teacher 47 states, “parental consent is important” (TSE, collaboration, parents/family). The need for training coupled
with collaborating with the family is addressed by teacher 41, “If I were properly trained, I would not have a problem, but I think this should include the family” (SHET, TSE, collaboration, parents/family, lack of exposure – overall). Support for collaboration and the need for sexual health education is stated by teacher 105, “I think sexual health education is valid and should be taught. I also believe there should be some parent nights with students to include and promote parent discussions with their child” (TSE, both abstinence and comprehensive, collaboration, parents/families). This teacher offers the idea of creating a parent night and inviting the parents into the process of teaching sexual health. The type of training and support for collaboration is further endorsed by teacher 46, “Proper college courses for training and collaboration with community/parents/culture. If disability collaboration with special education case manager” (SHET, collaboration, parents/families, community, disability). This teacher mentions culture and community as important aspects to consider in addition to collaborating with the parents. The need to understand the community and respect their values is emphasized by teacher 26, “I believe that you need to understand the community and their wants but that you should teach this to some degree” (TSE, both – abstinence and comprehensive, collaboration, community).

**Curriculum.** The second theme is curriculum. Curriculum includes the manner in which sexual health education is implemented and what is taught to students. The views regarding content varied among the participants. As explained within theme one, training, some teachers felt strongly that sexual health education should not be taught within the schools. The other participants’ views regarding content fell within an array of categories, including: abstinence-only for students with and without disabilities, abstinence only for
students with disabilities, both abstinence and comprehensive sexual health education for both students with and without disabilities, comprehensive only for students with disabilities, and comprehensive only for both students with and without disabilities. Within the responses teachers expressed concern for self, for students with disabilities, and for students in general, both with and without disabilities.

Abstinence only. The view that abstinence-only sexual health education should be the only type of curriculum in school, regardless of abilities, was expressed by some teachers. Teacher 75 states, “I feel strongly that abstinence sexual health education should be taught to all students, it is the only way to not get pregnant or get an STD” (TSE, abstinence). The strong ties between abstinence and beliefs regarding morality are evident in the response from teacher 72, “I do not agree with comprehensive sexual health education as society is broken – bisexual, homosexual has NO place in the classroom” (TSE, abstinence only, beliefs/ethics, other). The strongly held belief that society is broken and comprehensive sexual health education is part of the problem is exemplified in this response. This exemplifies the fear of the harm that has been linked to comprehensive sexual health education. The fear of harming students and children is further seen in the response from teacher 48, “too much information too soon can cause harm” (TSE, beliefs/ethics)

Abstinence only if disability. Some teachers support abstinence-only sexual health education for students with disabilities. Two teachers feel strongly that students with disabilities should not receive comprehensive sexual health education, teacher 71 states, “I agree with abstinence education for students with and without disabilities. I agree with comprehensive education for students without disabilities. I DON’T agree with
comprehensive education for students with disabilities” (TSE, both – abstinence and comprehensive, disability, beliefs/ethics, other). This teacher supports both abstinence and comprehensive sexual health education for students without disabilities. The second teacher (#111) states, “I do NOT agree with teaching students with disabilities comprehensive sexual health education. I agree with abstinence it is very important. Comprehensive is fine for students without disabilities but a parent’s choice” (TSE, both – abstinence and comprehensive, disability, parents/families, beliefs/ethics, other). This teacher makes a clear distinction regarding teaching students without disabilities versus teaching students with disabilities comprehensive sexual health education. Both of these teachers emphasized their view that students with disabilities should not receive comprehensive education by capitalizing DON’T and NO.

Both abstinence and comprehensive. A strong representation of teachers supported both the teaching of abstinence and comprehensive sexual health education for all students. Teacher 81 states, “I think this [both abstinence and comprehensive based sexual health education] is a good idea in today’s world to help students who are or are not educated about the real truth” (TSE, both – abstinence and comprehensive, disability – teaching students). This teacher supports teaching components of both levels of sexual health education to all students. Teacher 60 states, “ALL students should be informed and taught BOTH abstinence-based and comprehensive-based sexual health education” (TSE, both – abstinence and comprehensive, disability – teaching students). This teacher clearly supports merging the curricula of the two. Teacher 125 states, “Abstinence is one of many choices. I believe in teaching it ALL – at the appropriate level for students with disabilities in connection with services being received” (TSE, both – abstinence and
comprehensive, disability – teaching students). The emphasis on all indicates the support of both abstinence and comprehensive based curricula. The teacher also notes the connection to services for students with disabilities.

*Comprehensive only if disability.* Several teachers specifically endorsed comprehensive sexual health education as the only curriculum that should be taught to students with disabilities. Teacher 35 states, “Students need all the information they can get. There is a rise in STDs etc., students need blunt teaching of sexual health. Students with disabilities need to be taught that people may try to use them sexually and that they can be taken advantage of.” *(TSE, both – abstinence and comprehensive, disability – teaching students, disability, BSHEK, PSSHEK).* This teacher emphasizes the need for information specifically in relationship to protecting students with disabilities.

*Comprehensive only.* Numerous teachers expressed strong views endorsing comprehensive sexual health education as the only curriculum that should be taught to all students, with and without disabilities, coupled with strong views against abstinence-based sexual health education. Teacher 40 states, “I don’t believe abstinence-only education is effective or moral since one cannot 100% control free will of either partner. It is also possibly discriminatory since most abstinence only sexual health is aimed at heterosexual partners” *(TSE, comprehensive only, beliefs/ethics).* This teacher discusses the possibility of harm to students and children regarding abstinence-only education in regard to sexual discrimination. Teacher 38 states, “Teaching abstinence sexual health education doesn’t work, teaching students how to have safe consensual sex works” *(TSE, comprehensive only, beliefs/ethics).* This teacher feels strongly that abstinence does not work.
Disability. Several teaches express concern regarding teaching students with disabilities. Teacher 17 states, “I feel that teaching students with disabilities could be challenging and many students (depending on the disability) may not fully grasp what you are trying to teach them regarding the topic” (TSE, disability). This teacher worries about how difficult the content and process of teaching sexual health could be for students with disabilities and further comments on whether or not the students would comprehend the curriculum. Teacher 54 states, “Teachers need to be aware of up to date information. Most teachers leave this topic to the school nurse and PE teacher. It takes a special person to have the experience/knowledge to teach this private topic to students with disabilities” (TSE, disability, beliefs/ethics). In this response, the teacher is acknowledging that not every teacher is capable of teaching students with disabilities, especially in regard to sexual health education.

Inclusion. Inclusive education was a subtheme identified within the data. Inclusion is found throughout the codes for curriculum. Teacher 55 states, “I think our students deserve a comprehensive program. Abstinence does not meet the need of ALL students. It should start as early as Kindergarten like they do in many Western European Nations for ALL students” (TSE, both – abstinence and comprehensive, disability, beliefs/ethics). Teachers predominately report that all students with or without a disability deserve to know exactly what their same aged peers know about sexual health. For example teacher 51 states, “I don’t think it matters whether they have or do not have a disability” (TSE, both – abstinence and comprehensive, disability, beliefs/ethics). Teacher 82 states, “Students with disabilities need the same education as regular” (TSE, both – abstinence and comprehensive, disability). Teacher 123 states, “This is the reality of our
lives: sex happens. We, therefore, need to provide ALL students with the knowledge to make clear, informed decisions. Adding, the need to develop with the students needs in mind” (*TSE, disability*). These teachers report that students with and without disabilities should be taught the same content, whether they support abstinence-only, both abstinence and comprehensive, or comprehensive-only sexual health education. Teacher 88 supports comprehensive sexual health education for all students, “Extremely important for comprehensive sexual health to be taught to students with and without disabilities” (*TSE, comprehensive only, disability*). The support and need for inclusive sexual health education is summarized succinctly by teacher 102, “Just because you have a disability doesn’t mean you don’t have/need sex. ed. In my opinion, disabilities shouldn’t be a factor” (*TSE, disability*).

Several teachers emphasized the need to adapt the methods of instruction, but were explicit in the need for students with disabilities to receive the same content. Teacher 33 was one of these teachers, “I think students with disabilities should be taught about the same things as students without disabilities. However, their disability should be taken into consideration” (*SHET, disability*). This teacher notes the need to take into account the nature of the student’s disability. Teacher 26 states, “I believe the reason we do the education remains the same for both. The how would be different depending on the disability” (*TSE, disability*). This teacher supports teaching the same content to both students with and without disabilities, but notes that the manner in which the content is taught will need to change depending on the disability. Teacher 78 provides specific details regarding how to teach students with disabilities, “Comprehensive based is critical
and must be taught at the student’s cognitive level and not just a one-time class” (TSE, comprehensive only, disability).

**Unique concerns.** In addition to the above responses, several teachers expressed unique concerns and views that were not representative of the majority of the participants. Teacher 64 states, “If parents and students have disabilities an intervention should be there” (TSE, disability, parents/family, collaboration). This is the only response that takes into consideration the possibility of the students’ parents having a disability. The teacher suggests that some form of intervention needs to be in place to help with a situation in which both parents and students have disabilities. Teacher 43 states, “My view is that all sexual health education is extremely important. I feel that this especially empowers females in poverty” (TSE, both – abstinences and comprehensive, beliefs/ethics, other). This teacher supports both forms of sexual health education, and is the only teacher to mention the impact of this education on females in poverty. Teacher 37 states, “Teaching needs to include economic impact/cost of raising a child” (TSE, PSSHEK, other). This teacher is the only teacher to suggest the need to include a discussion of the cost of pregnancy and raising a child.

**Framework development.** The framework is based on the data condensation process through the qualitative data analysis. The goal was to build a framework that explains how the themes fit together. The framework (Figure 15) is the visual representation of the qualitative results demonstrating the complexity of the teachers’ responses to the qualitative instrument questions. The overriding concept of the framework is that the themes depict the views, beliefs, and ethics of the teachers who participated in this study. The themes fit together to answer the qualitative research
question. Teachers’ views on teaching sexual health education encompass various levels of preparation, the variety of methods to implement the curriculum, and the need for support and collaboration to assist teachers in coping with the challenges of inclusion, fear, and concern.

![Figure 15. Framework based on themes and subthemes from teacher responses to the qualitative questions](image)

The credibility, dependability, transferability, and conformability of the qualitative portion of this study are addressed in the section entitled construct validity at the end of this chapter.

**Summary of Qualitative Results.** Teacher responses to the qualitative questions were influenced by their beliefs and ethics. Their beliefs and ethics were exemplified in the concern expressed in their views regarding sexual health education. Under the overarching influence of belief, ethics, and concern two main themes emerged. These two themes are training and curriculum. The subtheme within training was the need for collaboration. The subtheme within curriculum was inclusion. Within the framework diverging views regarding sexual health education were noted within each theme.
Mixed Methods Results

The mixed method data integration was driven by the following questions: Is there evidence relating quantitative results to the qualitative themes when the data converge? How and Why?

The mixed method analysis for this convergent parallel design includes a description of the dimensions that were compared from the quantitative and qualitative results. The cross tabulation of quantitative and qualitative data has resulted in the creation of several arrays (Figures 16, 17, & 18). The arrays were used to create a series of joint displays. The joint displays presented represent the comparisons between the dimensions. The mixed method questions are answered by interpreting the integrated results to report patterns. The interpretation of the mixed method results is presented in the mixed method section of the discussion (Chapter 5).

Dimensions. The dimensions from the quantitative results include the mean scores and non-parametric statistical results sorted by the components of the survey instrument. The dimensions from the qualitative results include the quantified codes for the survey components (Figure 16), the array for levels of training (Figure 17), the array for sexual health education curriculum (Figure 18), and the codes for collaboration.
Figure 16 is a depiction of the number of codes that emerged from the qualitative questions for each survey component. TSE has the highest number with 166 codes. The participants had strong views and beliefs regarding how sexual health education should and should not be taught to students with and without disabilities. Each of the participants shared at least one view on how students should be trained. Teacher 51 shared:

I know there are a lot of folks against teaching sex-ed, but I am fine with having it taught. There are more kids that are sexually active then we’d care to acknowledge, and many of these kids have absolutely no guidance at home. I don’t believe kids should be pushed in any direction, but they should be made aware of consequences.

SHET has the second highest with 141 codes. The teachers also felt strongly about the teacher training for sexual health education. The majority of teachers shared the view that there is a need for sexual health education teacher training. Teacher 84 remains general in responding, stating that teacher training should include, “in-depth curriculum
and extreme preparation.” Teacher 72 incorporates that need for teacher training across grade levels, “The education is needed because this comes up even in elementary schools, middle schools. We need to understand what the guidelines are.”

PSSHEK ranks third with 27 codes and corresponds with component 1 of the survey (psycho-social knowledge – ps-sed). Teacher 33 shared, “Teachers would need to know the content they’re teaching as well as how to react to students’ reaction to the content.” The comment emphasizes a need to include more than strictly the biological aspects of sexual health; teachers need to be prepared to respond to a variety of reactions from the students. It may be that within this comment is a covert message regarding the need for teachers to create a safe environment in order to effectively teach this content. Teacher 44 agrees stating, “I believe that the teacher needs to be prepared to deal with the students reactions, concerns, and questions.”

BSHEK ranks fourth with 16 codes and corresponds with component 2 of the survey (biological knowledge – b-sed). Although Teacher 90 did not state a specific level of training, his/her strong viewpoints regarding the support for biological content knowledge is evident, “Sound scientific and fact based information on Human Sexuality and Biology.”
Figure 17 depicts the number of codes for each level of training reported by the teachers. The need for a teaching license in health education, sexual health education, and special education or an endorsement on an existing license in order to teach sexual health education is expressed 37 times by the teachers. An example of one of these responses is Teacher 107, “I think it depends on the grade level but I think Health teachers and counselors are in more of a role to teach that and should get adequate training.” Teacher 52 states, “Teacher should have health degree or endorsement. I wouldn’t feel comfortable teaching the course with my lack of knowledge.” For teaching sexual health education to students with disabilities, Teacher 42 states, “Bachelors in Special Education with at least a certification in Health Education.” The need for college courses in the content in order to teach is expressed 35 times. Professional development (PD) is expressed as a need 25 times. In support of PD, Teacher 59 states, “PD at least 2-3 times a year and other training.” Teacher 117 supports PD to gain more knowledge in the biological aspects of sexual health education, “Professional development classes, biology, and immunology.” The general support for more training in sexual health education is
expressed 23 times. Though these teachers who responded in a more general way, many still provided specific details regarding their views on training, as exemplified by Teacher 17 “Teachers need to receive a comprehensive-based sexual health education training in order to have all of the facts and to be able to answer the students’ questions in a professional manner.” Two teachers mentioned the need for an internship as a component of training.

Figure 18. Qualitatively derived array for views on how sexual health education should be implemented depicting number of codes for each type of curricula (None = no sexual health education, AB = abstinence, and Comp = comprehensive)

Figure 18 depicts the number of codes for views on the content of sexual health curriculum. Teachers held strong views regarding the type of curriculum student’s with and without disabilities should receive within the public school system. The highest number of codes is 88 for the curriculum to include both abstinence and comprehensive based sexual health education for all students regardless of disability. Teacher 30 response exemplifies embracing both comprehensive and abstinence based curricula stating, “I believe that it is what should be stressed to students as the first, best choice but should be supplemented with other choices.”
Comprehensive only for all students is the second highest with 38 codes. Teacher 57 states when asked to share his/her views on abstinence-based sexual health education, “You have to be kidding!!! REALITY is IMPORTANT!! All birth control MUST be discussed.” Comprehensive only for students with disabilities ranks third with 24 codes. No teaching of sexual health education by teachers or within the school has 13 codes. Abstinence only curriculum for all students has 7 codes. Teacher 89 states, “I believe abstinence-based sex-ed. is the most appropriate form of sexual health education.” Abstinence only if a student has a disability has 4 codes.

**Comparison of the dimensions.** In order to integrate and compare the dimensions of the quantitative data and the qualitative data, four joint displays were created. The first display integrates the quantitative dimensions with the qualitative codes used from the factor analysis by demographic characteristics (Table 13). This display helped to further validate the instrument and the factor analysis by comparing the number of codes within each factor to the participant demographics.

The second joint display integrates the code counts within the array depicting levels of training to the quantitative results by demographic variable. This display helped to determine any patterns within the data pertaining to teachers’ views on being trained in sexual health education in relation to reported knowledge within the demographic variables (Table 14).

The third joint display integrates the code counts within the array depicting types of curriculum to the quantitative results by demographic variable. This display helped to determine any patterns within the data pertaining to the teachers’ views regarding
curricula to teach students with and without disabilities in relationship to reported knowledge within the demographic variables (Table 15).

The fourth joint display integrates the code counts for collaboration in relation to the type of teacher license. This display helped to identify the license type of teachers who discussed the importance of collaboration. This may or may not have a relationship to the views on which type of sexual health education curricula is supported by teachers who have highlighted the importance of collaboration (Table 16).

The final step will be to compare the information on these four joint displays with each other to determine and identify evidence for converging the quantitative and qualitative data across all dimensions.
Table 13. Mixed methods data integration – joint display of quantitative and qualitative results by factor analysis components (N – 130)

<table>
<thead>
<tr>
<th>Demographic Characteristic</th>
<th>Psycho-Social Knowledge</th>
<th>Biological Knowledge</th>
<th>Disability</th>
<th>Training</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ps-sed</td>
<td>b-sed</td>
<td>dcs</td>
<td>shet</td>
</tr>
<tr>
<td></td>
<td>Mean Score</td>
<td>Mann-Whitney Code %</td>
<td># of Code</td>
<td>Mean Score</td>
</tr>
<tr>
<td>License</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Ed. = 45</td>
<td>2.74  no sig.</td>
<td>27%</td>
<td>7</td>
<td>2.16  no sig.</td>
</tr>
<tr>
<td>No Sp. = 85</td>
<td>2.90  no sig.</td>
<td>73%</td>
<td>19</td>
<td>1.78  no sig.</td>
</tr>
<tr>
<td>Elementary = 95</td>
<td>2.65  *sig.</td>
<td>77%</td>
<td>20</td>
<td>2.22  no sig.</td>
</tr>
<tr>
<td>No El. = 35</td>
<td>3.37  no sig.</td>
<td>23%</td>
<td>6</td>
<td>2.48  no sig.</td>
</tr>
<tr>
<td>Secondary = 34</td>
<td>3.47  *sig.</td>
<td>35%</td>
<td>9</td>
<td>2.94  *sig.</td>
</tr>
<tr>
<td>No Sec. = 96</td>
<td>2.63  no sig.</td>
<td>65%</td>
<td>17</td>
<td>2.06  *sig.</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male = 30</td>
<td>3.22  no sig.</td>
<td>15%</td>
<td>4</td>
<td>2.71  *sig.</td>
</tr>
<tr>
<td>Female = 100</td>
<td>2.73  no sig.</td>
<td>85%</td>
<td>22</td>
<td>2.17  *sig.</td>
</tr>
<tr>
<td>Urban or Rural School</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban = 49</td>
<td>2.63  no sig.</td>
<td>19%</td>
<td>5</td>
<td>2.16  no sig.</td>
</tr>
<tr>
<td>Rural = 81</td>
<td>2.98  no sig.</td>
<td>81%</td>
<td>21</td>
<td>2.37  no sig.</td>
</tr>
<tr>
<td>Training or No Training</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ab - 4</td>
<td>4.13  *sig.</td>
<td>0%</td>
<td>0</td>
<td>3.47  *sig.</td>
</tr>
<tr>
<td>Comp - 16</td>
<td>3.83  no sig.</td>
<td>15%</td>
<td>4</td>
<td>3.46  no sig.</td>
</tr>
<tr>
<td>No - 110</td>
<td>2.65  no sig.</td>
<td>85%</td>
<td>22</td>
<td>2.08  no sig.</td>
</tr>
</tbody>
</table>

Note: Mean Score = mean score from survey instrument; Mann-Whitney = Mann-Whitney U results, either significant (sig.) or no significance (ns); Code % = percent of codes from qualitative analysis by factor and demographic characteristic; # of Code = number of codes from qualitative analysis by factor and demographic characteristic.
Table 14. Mixed methods data integration – joint display of quantitative and qualitative results by levels of training

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>Quantitative Results</th>
<th>Level of Training</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean Score</td>
<td>Mann-Whitney Score</td>
</tr>
<tr>
<td><strong>License</strong></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| Special Ed. = 45
No Sp. = 85                | 2.74       | no sig.            | 2.16       | no sig.            | 1.95       | no sig.            | 1.84      | no sig.            | 8                  | 16    | 18        | 6    | 2    |
| Elementary = 95
No EL = 55                 | 2.65       | *sig.              | 2.22       | no sig.            | 1.72       | no sig.            | 1.89       | no sig.            | 22                 | 23    | 32        | 13   | 1    |
| Secondary = 34
No Sec. = 96                | 3.47       | *sig.              | 2.94       | *sig.              | 2.47       | *sig.              | 2.37       | *sig.              | 7                  | 12    | 2         | 8    | 0    |
| Gender                     |            |                    |            |                    |            |                    |            |                   |                           |       |           |       |      |
| Male = 30                   | 3.22       | no sig.            | 2.71       | *sig.              | 2.23       | *sig.              | 2.38       | *sig.              | 4                  | 0     | 11        | 4    | 1    |
| Female = 100                | 2.73       |                    | 2.17       | *sig.              | 1.72       | *sig.              | 1.80       |                   | 21                 | 26    | 26        | 18   | 1    |
| Urban or Rural School       |            |                    |            |                    |            |                    |            |                   |                           |       |           |       |      |
| Urban = 49                  | 2.63       | no sig.            | 2.16       | no sig.            | 1.71       | no sig.            | 1.85       | no sig.            | 14                 | 10    | 11        | 5    | 0    |
| Rural = 81                  | 2.98       |                    | 2.37       |                    | 1.92       |                    | 1.98       |                   | 11                 | 25    | 29        | 17   | 2    |
| Training or No Training    |            |                    |            |                    |            |                    |            |                   |                           |       |           |       |      |
| Ab = 4                      | 4.13       | *sig.              | 3.47       | *sig.              | 1.67       | *sig.              | 2.75       | *sig.              | 2                  | 0     | 0         | 1    | 0    |
| Comp = 16                   | 3.83       | *sig.              | 3.46       | *sig.              | 2.79       | *sig.              | 3.47       | *sig.              | 5                  | 3     | 10        | 5    | 0    |
| No = 110                    | 2.65       |                    | 2.08       |                    | 1.71       |                    | 1.68       |                   | 18                 | 32    | 27        | 16   | 2    |

Note: Mean Score = mean score from survey instrument; Mann-Whitney = Mann-Whitney U results, either significant (sig.) or no significance (no sig.); Code % = percent of codes counted from qualitative analysis by factor and demographic characteristic; # of Code = frequency of number of codes counted by factor and demographic characteristic.
Table 15. Mixed methods data integration – joint display of quantitative and qualitative results by type of curriculum

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>Quantitative Results</th>
<th>Type of Curriculum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean Score</td>
<td>Mann-Whitney</td>
</tr>
<tr>
<td>License</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Ed. = 45</td>
<td>2.74</td>
<td>no sig.</td>
</tr>
<tr>
<td>No Sp. = 85</td>
<td>2.90</td>
<td>1.78</td>
</tr>
<tr>
<td>Elementary = 95</td>
<td>2.65</td>
<td>*sig.</td>
</tr>
<tr>
<td>No El = 35</td>
<td>3.37</td>
<td>2.48</td>
</tr>
<tr>
<td>Secondary = 34</td>
<td>3.47</td>
<td>*sig.</td>
</tr>
<tr>
<td>No Sec. = 96</td>
<td>2.63</td>
<td>2.06</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male = 30</td>
<td>3.22</td>
<td>no sig.</td>
</tr>
<tr>
<td>Female = 100</td>
<td>2.73</td>
<td>2.17</td>
</tr>
<tr>
<td>Urban or Rural School</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban = 49</td>
<td>2.63</td>
<td>no sig.</td>
</tr>
<tr>
<td>Rural = 81</td>
<td>2.98</td>
<td>2.37</td>
</tr>
<tr>
<td>Training or No Training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ab = 4</td>
<td>4.13</td>
<td>*sig.</td>
</tr>
<tr>
<td>Comp = 10</td>
<td>3.83</td>
<td>3.46</td>
</tr>
<tr>
<td>No = 110</td>
<td>2.65</td>
<td>2.08</td>
</tr>
</tbody>
</table>

Note. Mean Score = mean score from survey instrument; Mann-Whitney = Mann-Whitney U results, either significant (sig.) or no significance (ns.); Code % = percent of codes from qualitative analysis by factor and demographic characteristic; # of Code = number of codes from qualitative analysis by factor and demographic characteristic.
Table 16. Mixed methods data integration – joint display of quantitative and qualitative results for collaboration

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>Quantitative Results</th>
<th>Collaboration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean Score ps</td>
<td>Mann-Whitney ps</td>
</tr>
<tr>
<td>License</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Ed. = 45</td>
<td>2.74</td>
<td>no sig.</td>
</tr>
<tr>
<td>No Sp. – 85</td>
<td>2.90</td>
<td>1.78</td>
</tr>
<tr>
<td>Elementary = 95</td>
<td>2.65</td>
<td>*sig.</td>
</tr>
<tr>
<td>No El. = 35</td>
<td>3.37</td>
<td></td>
</tr>
<tr>
<td>Secondary = 34</td>
<td>3.47</td>
<td>*sig.</td>
</tr>
<tr>
<td>No Sec. = 96</td>
<td>2.63</td>
<td>*sig.</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male = 30</td>
<td>3.22</td>
<td>no sig.</td>
</tr>
<tr>
<td>Female = 100</td>
<td>2.73</td>
<td></td>
</tr>
<tr>
<td>Urban or Rural</td>
<td></td>
<td></td>
</tr>
<tr>
<td>School</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban = 49</td>
<td>2.63</td>
<td>no sig.</td>
</tr>
<tr>
<td>Rural = 81</td>
<td>2.98</td>
<td></td>
</tr>
<tr>
<td>Training or No</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ab – 4</td>
<td>4.13</td>
<td>*sig.</td>
</tr>
<tr>
<td>Comp = 16</td>
<td>3.83</td>
<td></td>
</tr>
<tr>
<td>No = 110</td>
<td>2.65</td>
<td></td>
</tr>
</tbody>
</table>

Note: Mean Score = mean score from survey instrument; Mann-Whitney = Mann-Whitney U results, either significant (sig.) or no significance (no sig.); Code % = percent of codes from qualitative analysis by factor and demographic characteristic; # of Code = number of codes from qualitative analysis by factor and demographic characteristic.
Mixed method results from joint displays. The first four joint displays (Table 13-16) exhibit the results of the merging and integrating of the quantitative and qualitative data. The four joint displays were created to compare the quantitative means scores, Mann-Whitney $U$ test results to the qualitative codes, and the frequencies of the codes.

From Table 13, the comparison of factor analysis components, the researcher first determined that the higher the number of participants in a category matched with the higher frequencies for each qualitative code based on the quantitative factor analysis. That is, the more participants in a demographic category, the more codes. At first, this did not seem to be an indication of an important pattern. Upon further consideration, it is logical that the number of codes would be higher if the number of participants increase. This pattern further validates the instrument. The consistency between the numbers indicates that the use of the factor analysis components as codes for the qualitative was relevant to this population of teachers. This indicates that the instrument is consistent across quantitative and qualitative questions. This would not hold true if there were no codes within one of the factors, or if the number of participants in a category did not match with a higher number codes.

One exception to this pattern is for teachers with a special education license for the disability categories (dcs), component 3. The number of licensed special education teachers (45) is close to half of the number of teachers without a special education license (85), yet special education teachers have a higher number of codes for disability (53% or 21 codes) versus (47% or 19 codes) for teachers without the license. This led the researcher to consider that an increased frequency in the code may indicate an increased level of concern for the component. It is probable that the higher number of codes for
disability is a reflection of the concern for students with disabilities on the part of special education teachers.

The researcher looked through the data from the four joint displays, making note of patterns and higher and lower scores. The question constantly at the forefront of the researcher’s mind was: What does this mean? The higher number of codes within a category seemed to indicate an increased level of concern or support for the content by the teachers. Yet, something did not feel right. The researcher noted, that in Table 13 under component 1, psycho-social knowledge, teachers with an elementary license scored significantly lower in knowledge than the teachers without an elementary license. However, the teachers with an elementary license had the highest number of qualitative codes for this same component. This could indicate that even though elementary teachers scored lowest in knowledge for component one, they were showing the highest level of concern for psycho-social knowledge.

It then occurred to the researcher that for the majority of categories, the higher population coincided with a higher number of codes, and that there were unequal numbers of participants within each category. Using code frequencies in relation to the quantitative means scores and Mann-Whitney results to determine patterns and relations would be meaningless. This is because for the most part the higher number of codes simply was indicative of a higher number of people. Ratios of how many codes in relation to the number of participants within each category were needed to accurately compare the quantitative and qualitative data.

The ratio scores could lead to a better understanding of concern and support within the qualitative data. Concern was found to be a central component within the
qualitative framework. Participants demonstrated concern throughout their coded responses. A higher ratio score was equivalent to increased participant concern and/or support for the content of the code. Thus, the ratio score could be referred to as a concern score/support code and compared to the quantitative mean scores and statistical findings.

The term concern score has been used to describe the ratio scores for the component code based on the factor analysis, as the participants are concerned about the type of knowledge (psycho-social or biological) being included within sexual health education. The teachers expressed concern for students with disabilities, and concern regarding the need for sexual health education teacher training. The term support score has been used to describe the ratio scores for the levels of training, the type of sexual health education, and for collaboration. This terminology fits better than concern, as teachers were showing support for various levels of training, support for a particular type of sexual health education curriculum, and support for collaboration.

To test this construct, the researcher returned to the exception found in Table 13, the high code count for licensed special educators under the disability component. The ratio score for licensed special education teachers was calculated and compared to the ratio score for teachers without a special education license. Licensed special education teachers received 21 qualitative codes for the disability (dcs) factor. This number was divided by 45, the number of licensed special education teachers in the study to arrive at the ratio score of .47 (21/45 = .466). The ratio score for teachers without a special education license was also calculated, 19 codes for disability divided by 85 teachers without a license in special education equals .22 (19/85 = .22). Thus, for the disability component of the instrument, special education teachers had a higher qualitative ratio
score (.47), than teachers without a special education license (.22). It makes sense that special education teachers would have a higher concern for students with disabilities, than teachers that do not have a special education license. This construct, or idea, of concern scores for the qualitative data was tested throughout the analysis and comparison of ratio scores. Using ratio data normalized the effect of unequal participant populations for the qualitative questions.

*Mixed method findings from joint displays with ratio scores.* For the last step in the data integration process the data in Tables 13 through 16 were reconstructed to reflect concern and support scores for the qualitative data. That is, the number of codes within each demographic characteristic for the qualitative data was transformed into ratio scores (Tables 17 through 20). The integration of the quantitative mean scores, the statistical results from the Mann-Whitney *U* tests, and the concern scores from the qualitative data by factor are depicted in Table 17. Table 18 depicts the integration of the quantitative mean scores, the statistical results from the Mann-Whitney *U* tests, and the support scores from the qualitative data by the array for levels of training. Table 19 depicts the integration of the quantitative mean scores, the statistical results from the Mann-Whitney *U* tests, and the support scores from the qualitative data by the array for curriculum type. Table 20 reflects integration of the quantitative mean scores, the statistical results from the Mann-Whitney *U* tests, and the support scores from the qualitative data for collaboration.
Table 17. *Mixed methods data integration – joint display of quantitative results and qualitative ratio scores by factor analysis components (N = 130)*

<table>
<thead>
<tr>
<th>Demographic Characteristic</th>
<th>Psycho-Social Knowledge</th>
<th>Biological Knowledge</th>
<th>Disability</th>
<th>Training</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ps-std</td>
<td>Mann-Whitney Score</td>
<td>b-std</td>
<td>Mann-Whitney Score</td>
</tr>
<tr>
<td></td>
<td>Mean Score</td>
<td>Ratio Score</td>
<td>Mean Score</td>
<td>Ratio Score</td>
</tr>
<tr>
<td><strong>License</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Ed. = 45</td>
<td>2.74</td>
<td>no sig.</td>
<td>2.16</td>
<td>no sig.</td>
</tr>
<tr>
<td>No Sp. = 85</td>
<td>2.90</td>
<td>.22</td>
<td>1.78</td>
<td>.14</td>
</tr>
<tr>
<td>Elementary = 95</td>
<td>2.65</td>
<td>*sig.</td>
<td>2.22</td>
<td>no sig.</td>
</tr>
<tr>
<td>No El. = 35</td>
<td>3.37</td>
<td>.17</td>
<td>2.48</td>
<td>.09</td>
</tr>
<tr>
<td>Secondary = 34</td>
<td>3.47</td>
<td>*sig.</td>
<td>2.94</td>
<td>*sig.</td>
</tr>
<tr>
<td>No Sec. = 96</td>
<td>2.63</td>
<td>.18</td>
<td>2.06</td>
<td>.13</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male = 30</td>
<td>3.22</td>
<td>no sig.</td>
<td>2.71</td>
<td>*sig.</td>
</tr>
<tr>
<td>Female = 100</td>
<td>2.73</td>
<td>.22</td>
<td>2.17</td>
<td>.14</td>
</tr>
<tr>
<td><strong>Urban or Rural School</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban = 49</td>
<td>2.63</td>
<td>no sig.</td>
<td>2.16</td>
<td>no sig.</td>
</tr>
<tr>
<td>Rural = 81</td>
<td>2.98</td>
<td>.26</td>
<td>2.37</td>
<td>.12</td>
</tr>
<tr>
<td><strong>Training or No Training</strong></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Ab = 4</td>
<td>4.13</td>
<td>*sig.</td>
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<td>*.sig.</td>
</tr>
<tr>
<td>Comp = 16</td>
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<td>.25</td>
<td>3.46</td>
<td>.06</td>
</tr>
<tr>
<td>No = 110</td>
<td>2.65</td>
<td>.20</td>
<td>2.08</td>
<td>.14</td>
</tr>
</tbody>
</table>

*Notes: Mean Score = mean score from survey instrument; Mann-Whitney = Mann-Whitney U results, either significant (sig.) or no significance (ns.); Ratio Score (Concern Score) = conversion of qualitative codes to ratio scores to account for differences in population size by factor analysis components and demographic characteristics.*
<table>
<thead>
<tr>
<th>License</th>
<th>Mean Score</th>
<th>Mann-Whitney</th>
<th>Mean Score</th>
<th>Mann-Whitney</th>
<th>Mean Score</th>
<th>Mann-Whitney</th>
<th>PD</th>
<th>College Course(s)</th>
<th>License or Endorsement</th>
<th>More +</th>
<th>Internship</th>
</tr>
</thead>
<tbody>
<tr>
<td>Special Ed. = 45</td>
<td>2.74</td>
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<td>2.16</td>
<td>no sig.</td>
<td>1.95</td>
<td>no sig.</td>
<td>.18</td>
<td>.36</td>
<td>.40</td>
<td>.13</td>
<td>.04</td>
</tr>
<tr>
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<td>1.78</td>
<td>1.98</td>
<td>1.84</td>
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<td>.19</td>
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<tr>
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<td>2.22</td>
<td>no sig.</td>
<td>1.72</td>
<td>no sig.</td>
<td>.23</td>
<td>.24</td>
<td>.34</td>
<td>.14</td>
<td>.01</td>
</tr>
<tr>
<td>No El. = 35</td>
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<td>2.48</td>
<td>2.16</td>
<td>2.05</td>
<td>1.89</td>
<td>no sig.</td>
<td>.09</td>
<td>.34</td>
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<td>.28</td>
<td>.03</td>
</tr>
<tr>
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<td>2.94</td>
<td>*sig.</td>
<td>2.47</td>
<td>*sig.</td>
<td>.21</td>
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<td>0</td>
</tr>
<tr>
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<td>2.06</td>
<td>1.61</td>
<td>1.78</td>
<td>*sig.</td>
<td>*sig.</td>
<td>.19</td>
<td>.24</td>
<td>.36</td>
<td>.15</td>
<td>.02</td>
</tr>
<tr>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male = 30</td>
<td>3.22</td>
<td>no sig.</td>
<td>2.71</td>
<td>*sig.</td>
<td>2.23</td>
<td>*sig.</td>
<td>.13</td>
<td>.30</td>
<td>.37</td>
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<td>.03</td>
</tr>
<tr>
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<td>*sig.</td>
<td>*sig.</td>
<td>.21</td>
<td>.26</td>
<td>.26</td>
<td>.18</td>
<td>.01</td>
</tr>
<tr>
<td>Urban or Rural School</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban = 49</td>
<td>2.63</td>
<td>no sig.</td>
<td>2.16</td>
<td>no sig.</td>
<td>1.71</td>
<td>no sig.</td>
<td>.29</td>
<td>.20</td>
<td>.22</td>
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<td>0</td>
</tr>
<tr>
<td>Rural = 81</td>
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<td>2.37</td>
<td>1.92</td>
<td>1.98</td>
<td>no sig.</td>
<td>no sig.</td>
<td>.14</td>
<td>.31</td>
<td>.36</td>
<td>.21</td>
<td>.03</td>
</tr>
<tr>
<td>Training or No Training</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ab = 4</td>
<td>4.13</td>
<td>*sig.</td>
<td>3.47</td>
<td>*sig.</td>
<td>1.67</td>
<td>*sig.</td>
<td>.50</td>
<td>0</td>
<td>0</td>
<td>.25</td>
<td>0</td>
</tr>
<tr>
<td>Comp = 16</td>
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<td>3.46</td>
<td>2.79</td>
<td>3.47</td>
<td>1.68</td>
<td>1.68</td>
<td>.31</td>
<td>.19</td>
<td>.63</td>
<td>.31</td>
<td>0</td>
</tr>
<tr>
<td>No = 110</td>
<td>2.65</td>
<td>2.08</td>
<td>1.71</td>
<td>1.68</td>
<td></td>
<td></td>
<td>.16</td>
<td>.29</td>
<td>.25</td>
<td>.15</td>
<td>.02</td>
</tr>
</tbody>
</table>

**Note.** Mean Score = mean score from survey instrument; Mann-Whitney = Mann-Whitney U results, either significant (sig.) or no significance (no sig.); Ratio Score (Concern Score) = conversion of qualitative codes to ratio scores to account for differences in population size by levels of training and demographic characteristics.
Table 19. Mixed methods data integration – joint display of quantitative and qualitative ratio scores by type of curriculum

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>Quantitative Results</th>
<th>Ratio Score (Concern) for Type of Curriculum</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean Score passed</td>
<td>Mann-Whitney p&lt; 0.05</td>
</tr>
<tr>
<td></td>
<td>Mean Score b&lt; 0.05</td>
<td>Mann-Whitney b&lt; 0.05</td>
</tr>
<tr>
<td></td>
<td>Mann-Whitney d&lt; 0.05</td>
<td>Mann-Whitney d&lt; 0.05</td>
</tr>
<tr>
<td></td>
<td>Mean Score shet</td>
<td>Mann-Whitney shet</td>
</tr>
<tr>
<td></td>
<td>None</td>
<td>Ab if Dis.</td>
</tr>
<tr>
<td></td>
<td>Ab Only</td>
<td>Both Ab &amp; Comp</td>
</tr>
<tr>
<td></td>
<td>Comp Only</td>
<td>Comp if Dis.</td>
</tr>
<tr>
<td>License</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Ed. = 45</td>
<td>2.74 no sig.</td>
<td>2.16 no sig.</td>
</tr>
<tr>
<td>No Sp. = 85</td>
<td>2.90 1.78 no sig.</td>
<td>1.78 no sig.</td>
</tr>
<tr>
<td>Elementary = 95</td>
<td>2.65 *sig.</td>
<td>2.22 no sig.</td>
</tr>
<tr>
<td>No El. = 35</td>
<td>3.37 2.48 no sig.</td>
<td>1.72 no sig.</td>
</tr>
<tr>
<td>Secondary = 34</td>
<td>3.47 *sig.</td>
<td>2.94 *sig.</td>
</tr>
<tr>
<td>No Sec. = 96</td>
<td>2.63 2.06 *sig.</td>
<td>1.61 *sig.</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male = 30</td>
<td>3.22 no sig.</td>
<td>2.71 *sig.</td>
</tr>
<tr>
<td>Female = 100</td>
<td>2.73 2.17 *sig.</td>
<td>1.72 *sig.</td>
</tr>
<tr>
<td>Urban or Rural School</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban = 49</td>
<td>2.63 no sig.</td>
<td>2.16 no sig.</td>
</tr>
<tr>
<td>Rural = 81</td>
<td>2.98 2.37 no sig.</td>
<td>1.92 no sig.</td>
</tr>
<tr>
<td>Training or No Training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ab = 4</td>
<td>4.13 *sig.</td>
<td>3.47 *sig.</td>
</tr>
<tr>
<td>Comp = 16</td>
<td>3.83 3.46 *sig.</td>
<td>2.79 *sig.</td>
</tr>
<tr>
<td>No = 710</td>
<td>2.65 2.08 1.71</td>
<td>1.68 *sig.</td>
</tr>
</tbody>
</table>

Note. Mean Score = mean score from survey instrument; Mann-Whitney = Mann-Whitney U results, either significant (sig.) or no significance (ns.); Ratio Score (Concern Score) = conversion of qualitative codes to ratio scores to account for differences in population size by types of curriculum and demographic characteristics.
### Table 20. Mixed methods data integration – joint display of quantitative results and qualitative ratio scores for collaboration

<table>
<thead>
<tr>
<th>Demographic Characteristics</th>
<th>Quantitative Results</th>
<th>Collaboration</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Mean Score ps-sed</td>
<td>Mann-Whitney ps-sed</td>
</tr>
<tr>
<td>License</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Special Ed. = 45</td>
<td>2.74</td>
<td>no sig.</td>
</tr>
<tr>
<td>No Sp. = 85</td>
<td>2.90</td>
<td></td>
</tr>
<tr>
<td>Elementary = 95</td>
<td>2.65</td>
<td>*sig.</td>
</tr>
<tr>
<td>No El. = 35</td>
<td>3.37</td>
<td></td>
</tr>
<tr>
<td>Secondary = 34</td>
<td>3.47</td>
<td>*sig.</td>
</tr>
<tr>
<td>No Sec. = 96</td>
<td>2.63</td>
<td></td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male = 30</td>
<td>3.22</td>
<td>no sig.</td>
</tr>
<tr>
<td>Female = 100</td>
<td>2.73</td>
<td></td>
</tr>
<tr>
<td>Urban or Rural School</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urban = 49</td>
<td>2.63</td>
<td>no sig.</td>
</tr>
<tr>
<td>Rural = 81</td>
<td>2.98</td>
<td></td>
</tr>
<tr>
<td>Training or No Training</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ab = 4</td>
<td>4.13</td>
<td>*sig.</td>
</tr>
<tr>
<td>Comp = 16</td>
<td>3.83</td>
<td></td>
</tr>
<tr>
<td>No = 110</td>
<td>2.65</td>
<td></td>
</tr>
</tbody>
</table>

*Note.* Mean Score = mean score from survey instrument; Mann-Whitney = Mann-Whitney U results, either significant (sig.) or no significance (n.s.); Ratio Score (Concern Score) = conversion of qualitative codes to ratio scores to account for differences in population size by collaboration and demographic characteristics.
To systematically identify patterns within the joint displays (recognize where the data converges or if the data diverge) and discuss how the quantitative and qualitative integration informs the study, the results have been reported by demographic characteristic. The results for the comparisons within license type, gender, urban or rural school, and training or no training have been reported. The MMR findings conclude with the identification of patterns across demographics.

The first three concern scores from Table 17, for psycho-social knowledge, biological knowledge, and disability are utilized in these comparisons. The fourth score for teacher training is not compared, as the scores are consistently and significantly higher than the other scores. That is, the majority of teachers within each demographic characteristic are concerned about the need for teacher training in sexual health education. Numerous teachers received more than one code that supported the need for training.

License type. The concern and support scores were compared to the mean scores and statistical analysis by teacher license type (See Figures 19 thru 21 for concern and support scores and Figure 22 for mean scores). Figure 19 depicts the concern scores based on the component knowledge factors for psycho-social knowledge, biological knowledge, and disabilities categories for students for each license type. Figure 20 depicts the support scores for levels of training by teacher license type. Figure 21 depicts the support scores for type of sexual health education curriculum by teacher license type. Figure 22 depicts the mean scores by component for each teacher license and for all teachers.
Special education (SPED) teachers have the highest concern score for disability, with the lowest concern for biological knowledge (Figure 19). This concern is expressed by Special education teacher 13, “This is a difficult topic. A teacher should be given information that is current and pertinent, but also given ways to keep their opinions and values separate. These teachers would need awareness of how the students’ disabilities would affect understanding of the concept.” Though special education teachers are highly concerned about students with disabilities, their mean score for teaching sexual health education to students across disability categories was 1.95 (averaging less than a 2, which is somewhat prepared) (See Figure 22). Special educators are concerned about their students’ sexual health, but are not prepared to teach students with or without disabilities sexual health education. Special education teacher 5 states, “We need training to the point that we can become comfortable providing important information to our students. We need to be comfortable with the content and the explanations.”
The majority of SPED teachers support the need for teachers to receive a license or endorsement in order to teach sexual health education (Figure 20). Teachers with a license in SPED have the highest support score for teaching both abstinence and comprehensive sexual health education and for teaching comprehensive sexual health education to students with disabilities (Figure 21). SPED teachers want more training and support a professional license in the content, with the goal of achieving the ability to effectively teach both abstinence and comprehensive curriculum. Special education teacher 35 states:

I think it is important to teach abstinence-based, but also comprehensive based as our society is made up of so many different people/cultures. It is important for students to learn everything that they can. This is probably a more important approach for students with disabilities, as they can be taken advantage of. Students with disabilities need to be taught that people may try to use them sexuality.

Special education teachers have the highest support score for collaboration, which is reflective of the high need for collaboration when teaching a student with a disability (Table 20). Special education teacher 41 states, “If I were properly training I wouldn’t have a problem, but I think this should include the family.”
Elementary teachers have the highest concern score for disability and the lowest for psycho-social knowledge (Figure 19). Though elementary teachers are concerned about disability, their mean score in disability was 1.72 (the lowest mean score of all teaching licenses for disability categories for students). As with special educators, elementary teachers have a great deal of concern for the sexual health of their students with disabilities, but are not knowledgeable nor prepared to teach the curriculum.

Elementary teachers have the highest support score for needing a license or endorsement in order to teach sexual health education (Figure 20). The majority of elementary teachers support teaching both abstinence and comprehensive sexual health education to students with and without disabilities, and many support comprehensive only sexual health education (Figure 21). Elementary teachers support the concept of teachers having to attain a professional license to teach the content and gaining the ability to teach a combined curriculum of abstinence and comprehensive sexual health education.

Elementary teacher 129, having received some training states:
I feel we were adequately prepared. We were given comprehensive-curriculum and a picture book, resources for major topics to support student learning. We were given time to study the resources and a place to ask questions. Additionally, I believe teachers should consult with each student’s special education teacher and become familiar with that student’s accommodations and needs.

The elementary teachers received the highest support scores for no sexual health education in schools, 0.12. Elementary teacher 10 states, “Parents should teach their children about sex, not schools!” Elementary teachers have the lowest support score for collaboration, which may be reflective of low occurrence of sexual health education need within the elementary school setting (Table 20).

![Support Scores for Type of Sexual Health Education Curriculum](image)

**Figure 21.** Concern scores from qualitative analysis for type of sexual health education curriculum by type of teacher license

Secondary teachers tie for concern score in both psycho-social knowledge and disability, as opposed to special educators and elementary teachers, secondary teachers support college courses as needed training, with very little support for a license or
endorsement (Figure 20). Secondary teachers primarily support a combined abstinence and comprehensive sexual health education curriculum or comprehensive only program. They have the highest support score for comprehensive only for all students out of all license types. Secondary teacher 39 states, “Comprehensive-based sexual health education needs to happen! The more information kids have the better choices they make. Based on teen pregnancy rates it is quite obvious that abstinence doesn’t work.”

Secondary teachers’ lowest mean score is for knowledge and preparation to teach sexual health education (2.37), though they scored significantly higher than teachers without a secondary license. This mean score indicates they rate themselves as 2, minimally prepared to teach students with disabilities. Secondary teachers rate the second highest for collaboration score (Table 20).

![Mean Scores from Sexual Health Education Teacher Knowledge Questionaire](image)

**Figure 22.** Mean scores from sexual health education (SHED) teacher knowledge instrument depicting component mean scores by type of teacher license and for all teachers in the study
Gender. Males have the lowest concern scores for psycho-social knowledge (.13) and biological knowledge (.06), with the highest concern score for disability (.37). Though lower than males, females highest concern score is for disability (.29), with slightly lower concern for psycho-social knowledge (.22), and lowest score in biological knowledge (.14). The genders highest mean score is for psycho-social knowledge, with the lowest score in disability categories. Males have significantly higher scores for the quantitative components. Females are twice as concerned as males in the area of psycho-social knowledge. Male and female teachers support the need for a license/endorsement to teach sexual health education to students via the completion of college courses. Females also have rather high support scores for professional development (PD) and more training in general (Table 18). The majority of both genders support the combination of abstinence and comprehensive sexual health education curriculum for students with and without disabilities (Table 19). Females have a slightly higher support score for collaboration (Table 20).

Urban or Rural School. Teachers from both types of schools have the highest concern score for disability, though the score for rural schools is nearly double (Table 17). Teachers in rural schools have over double the concern for psycho-social knowledge, and both schools have the lowest concern for biological knowledge. Teachers in urban and rural schools received the highest mean scores for psycho-social knowledge and the lowest mean scores for disability categories. No difference between the means scores of the two categories was found. There is no difference in teacher knowledge between urban and rural schools.
Teachers in urban schools have the highest support score for professional development as a need in teacher training and teachers in rural schools have the highest support for a license or endorsement in the field (Table 18). Teachers in urban schools have the greatest support for comprehensive only sexual health education (.63). In urban schools the support for the combination of abstinence and comprehensive curriculum is high (.61), and the second highest support score overall for only comprehensive curriculum for students with disabilities (.33). Teachers in rural schools have the most support for the combination of abstinence and comprehensive curriculum (.72), and the second highest support score for no sexual health education in schools (.16). Teachers in rural schools have a slightly higher support score for collaboration than teachers in urban schools (Table 20).

*No training or training.* Teachers who have received abstinence only sexual health education report the highest concern for students with disabilities across demographic categories (Table 17). Training in this curriculum was not indicative of the participants support for abstinence only curriculum, which is important to distinguish. The type of training the teachers received does not reflect on the curriculum they support, when teaching students with or without disabilities. Comprehensive training and no training have the highest support scores for psycho-social knowledge, the lowest for biological knowledge. Teachers with no training have the highest score for disability. Teachers who received sexual health education training (abstinence or comprehensive) scored significantly higher on the quantitative scores for all components and for the total score than teachers who did not receive training.
Teachers who received abstinence based sexual health education training support professional development (PD) as a need (Table 18). Teachers who received comprehensive based sexual health education training support attaining a license or endorsement in the content area. Teachers who did not receive training support college coursework as a need.

Teachers with comprehensive training and no training support the combination of abstinence and comprehensive sexual health education, with high support scores for both ‘comprehensive only for all students’ and ‘comprehensive only for students with disabilities’ (Table 19). Teachers with abstinence-only training are split in their support for abstinence only and a combination of curriculum. Teachers who have received comprehensive sexual health education have the highest support score for collaboration across demographic variables (Table20).

Explanations of the qualitative and quantitative results are offered in Chapter 5. These explanations will lead to interpretations of the mixed methods integration results.

**Construct Validity**

**Quantitative data.** The validity of the quantitative data is limited by the lack of a test-re-test procedure on the SHED teacher knowledge instrument. The external review of the instrument by ten experts addresses external reliability of the instrument. A high level of internal reliability is demonstrated by the results of Cronbach’s alpha. The results of the factor analysis indicate a good model.

**Qualitative data.** Legitimation includes the trustworthiness, credibility, dependability, conformability, and/or transferability of the interpretations being made
from the qualitative data and can help researchers judge the quality of their conclusions (Miles, Huberman, & Saldana, 2014; Leech & Onwuegbuzie, 2007). The legitimation of this study was enhanced through the following:

- Use of more than one type of data analysis, or methodological triangulation (constant comparison analysis, classical content analysis, and the bridging of the quantitative factor analysis results as codes for the qualitative analysis); and,
- Use of a second researcher to help with the qualitative data analysis process to achieve code agreement, increase dependability, decrease researcher bias, and work toward investigator triangulation (Leech & Onwuegbuzie, 2007, p. 575).

The final analysis on the qualitative research data was conducted entirely by the researcher. The researcher analyzed the qualitative results to determine if the themes, patterns, and framework aligned or misaligned with critical disability theory. The findings of this analysis are reported in the implications section of Chapter 5.

*Test for Code Agreement.* Inter-rater reliability was tested within Dedoose. The report from Dedoose states that, “Cohen’s kappa statistic is a widely used and respected measure to evaluate inter-rater agreement as compared to the rate of agreement expected by chance—based on the coding behavior or each rater.” The researcher took the test on the codes finished by the colleague, participants 1 – 61. See Appendix B for the first page of the report from the Dedoose inter-rater reliability test. Dedoose visual indicators used the following criteria for interpreting kappa values: <.50 = poor agreement, .51-.64 = fair
agreement, .65-.80 = good agreement, and >.80 = excellent agreement. There was good agreement between the two raters, $K = .79$.

**Mixed method integration.** Construct validity for the convergent mixed method design was achieved through common construct, creation of joint displays, and equal sample size (Creswell, 2015). The researcher created detailed joint displays to integrate the quantitative and qualitative data. The process of data integration is thoroughly explained. Quantifying the qualitative data in a convergent mixed method design led to an enhanced picture of the patterns between the quantitative and qualitative data from the SHED teacher knowledge instrument. The interpretations of the joint displays and the patterns that emerged to address the mixed methods questions are reported in Chapter 5.
Chapter Five: Discussion

Overview

The purpose of this convergent parallel mixed methods study was to explore and access the knowledge and preparation of licensed teachers concerning sexual health education for students with and without disabilities. The goal of this investigation was to utilize the findings to inform the research and practice of sexual health education for students with disabilities.

In this chapter, the researcher focuses on reporting the findings of this study. The researcher connects the findings back to the identified research gaps and barriers to access. Following the limitations section is the implications section that includes a discussion of how the findings align and inform critical disability theory and promote empowerment and protection for students with disabilities. Next, the researcher recommends various avenues for future research. The sections for implications and recommendations emphasize the need for change as demonstrated by the alignment to critical disability theory. Little will change for students with disabilities without systemic change to improve sexual health education for students in general education. The chapter ends with a conclusion and a summary of the findings.

Summary of Findings

This summary of findings is reported in three sections. The first section addresses the quantitative question and additional findings within the quantitative results. The second section answers the qualitative question and reports findings based on the qualitative results. The third section answers the mixed method questions and reports the findings based on the mixed method integration.
Summary of quantitative findings.

The quantitative research question asks, what differences exist in sexual health education knowledge and preparation between licensed special education teachers and licensed general education teachers? The answer to this question is provided under the sub-heading of hypothesis testing. Additional quantitative research findings explored in this section include the results of the Mann-Whitney U tests and the descriptive statistics on the demographic characteristics.

Hypothesis testing. The researcher hypothesized that special education teachers would have higher scores for knowledge and preparation than teachers without a special education license. Though the literature supports teachers’ knowledge and fear as barriers to access for students with disabilities, the research does not include data on possible differences in knowledge when comparing license type. The researcher wanted to test if knowledge and fear changed due to license type. The researcher suspected that, because licensed special education teachers had more exposure to and background teaching students with disabilities, this may result in increased knowledge when compared to teachers without a special education license. However, there was no difference in scores within any of the four components, or for the overall total score on the instrument. There was no differences in sexual health education knowledge and preparation between licensed special education teachers and licensed general education teachers. There was low knowledge reported across license types.

Additional findings. It is interesting that teachers with an elementary teaching license reported significantly lower knowledge for psycho-social components of sexual health education. This may be due to the fact the gender identity is included in this
component. Elementary teachers cope with safety and relationship issues among their students daily, but may have very little exposure to issues regarding gender identity that typically do not emerge until a student is an adolescent.

Licensed secondary teachers had significantly higher knowledge scores for each component of the SHED teacher knowledge instrument. The higher knowledge scores are likely explained by the fact that they are working with adolescents. It is reasonable to infer that teachers in constant contact with adolescents would have greater knowledge regarding the sexual health of their students.

Gender seems to play a role in either the actual sexual health education knowledge or the confidence to teach sexual health education to both students with and without disabilities. It would be interesting for future research to compare knowledge scores based on a standardized human sexuality test across gender to see if the higher knowledge rating is based on content knowledge or confidence. Another possibility why males have significantly higher scores is the number of male teachers in secondary who are teaching health education and the biological aspects of sexual health and reproduction.

It is hopeful to note the significantly higher knowledge ratings for teachers who have received some sexual health education training, as compared to teachers that have not received sexual health education training. Looking at the average mean scores for component 3, disability categories of students, and the significant difference seems to be due to the teachers who have received comprehensive sexual health education training.

Even though results showed significant differences, the overall mean scores remain three or under (without breaking the teachers into demographic categories). The
significant differences showed up for the differences between scores of one and three; the difference between *not at all prepared* and *minimally prepared*. The lowest mean scores were predominately for component three, indicating that teachers feel least prepared to teach students with disabilities sexual health education. This was new information regarding teacher knowledge by demographic categories, but the findings supported the lack of teacher knowledge due to a deficiency in sexual health teacher education programs (Eisenberg et al., 2010; Klein & Breck, 2010; Preston, 2013; Travers et al., 2014). Teachers reported they were most prepared to teach component one, the psycho-social aspects of sexual health education and least prepared to teach within component three, to students with disabilities (regardless of disability category). Teachers with a special education license, secondary license, ranging in age from 30-39, or Asian had the lowest means scores for component four, indicating these teachers felt least prepared to teach sexual health education regardless of topic, curricula type, or if students had a disability.

When the researcher compared the scores by demographic categories, no score of four, *prepared*, was calculated for biological knowledge, disability categories, or sexual health education training. No scores of five, *well prepared*, or six, *very well prepared*, were calculated for any of the components, nor for the total. Teachers are neither prepared to teach nor knowledgeable in content of sexual health education regardless of license type or demographic category. The findings supported previous research, these teachers were not alone. Lack of teacher training programs for sexual health education is one of the main barriers to access for students with disabilities (Eisenberg et al., 2010; Klein & Breck, 2010; Preston, 2013; Travers et al., 2014).
Summary of qualitative findings.

The following qualitative findings answer the research question, how do licensed teachers describe their views of teaching sexual health education to students with and without disabilities?

Based on the qualitative framework developed, teachers reported the need for more training. Many teachers reported a lack of knowledge regarding both sexual health education and students with disabilities. The majority of teachers reported the need for increased knowledge through a variety of suggested training levels. Teachers indicated fear through their concern and desire for more knowledge and support. Inversely, these relationships would indicate that with increased knowledge and support, teachers’ concerns would be addressed and their fears would decrease.

Collaboration, though indicated in the responses by relatively few teachers, compounds the desire for support and indicates the type of support needed; not only from the district to ensure training, and colleges/universities to ensure teacher education includes training, but also from parents, families, and the community. The lack of parent and teacher collaboration is one of the barriers to accessing sexual health education for students with disabilities (Barnard et al., 2014; Kok & Akyuz, 2015; Rohleder, 2010; Suter et al., 2009).

The majority of teachers supported curricula that includes both abstinence-based and comprehensive-based or only comprehensive-based for students with or without disabilities. The support for the identical content delivered to students with and without disabilities that includes comprehensive-based sexual health education is in line with evidence-based practice and the inclusion of students with disabilities (AVERT, 2014;
Kirby, 2008; Kirby et al., 2011; Kohler, 2008; SIECUS, 2015b; Stanger-Hall & Hall, 2011; Santelli and Kantor, 2008; Travers et al., 2014). Teachers want and need help to attain this level of inclusion. Teachers want to be trained by professionals within sexual health education and to become professionals with a high enough level of knowledge to meet their concerns regarding self, and students with and without disabilities.

Several teachers do not believe that sexual health education belongs in the schools (13 or 10% of the participants). This group of teachers feel strongly that it is the responsibility of parents and families to teach this subject at home. These views indicate that it is important to ensure that, even if sexual health education teacher training becomes a mandatory component of licensure in the future, teachers still have the option to have another professional teach the curriculum. Perhaps these teachers do not realize that parents and families often do not address the subject with their children. The literature indicates that parents and families often feel fear and anxiety regarding teaching sexual health to their children (Barnard-Brak et al., 2014; Eisenberg et al., 2013; Kok & Akyuz, 2015; Rohleder, 2010; Suter et al., 2009). Further research is needed to determine if this population is open to change.

A small minority of teachers (4 or 3% of the participants), who supported comprehensive-based sexual health education for students without disabilities, do not support this curriculum when teaching students with disabilities. These teachers supported abstinence-based sexual health education for students with disabilities. The views indicate that these teachers are uncomfortable with the idea that students/people with disabilities are sexual. The views of these teachers supports one of the identified barriers to access as the socialized context of the sexuality of students with a disability as
deviant (Erevelles, 2011; Morgan, Mancl, Kaffar, & Ferreira, 2011; Travers & Tincani, 2010; Traver et al., 2014).

A small number of teachers supported abstinence-only sexual health education (7 or 5% of the participants) for all students. These teachers were not the same participants that supported no sexual health education within the school system, nor did they support abstinence-only for students with disabilities. Each of these teachers indicated in their responses that this is a personal belief, that abstinence-only is the only completely effective way to protect students. It would be interesting to understand the impact of their beliefs within their individual school systems. That is, how much power and voice do these individuals have to influence current policy and practice? Further research could identify if their beliefs would be influenced by a non-threatening, fact-based teacher training in sexual health education and evidence-based practices.

**Summary of mixed methods integration.**

This section focuses on answering the mixed methods questions. The mixed methods research questions were, is there evidence relating quantitative results to the qualitative themes when the data converge? How and why?

**Initial mixed methods findings.** Prior to the integration of data into joint displays, the benefits of the mixed methods research design began to occur to the researcher. One of the emphasis areas in mixed methods research is to determine if the qualitative data informed the quantitative data, and conversely, if the quantitative informed the qualitative data (Creswell & Plano-Clark, 2011). The answer is, yes. From the initial findings, both the quantitative and qualitative data have helped to enhance the researchers understanding of the sample population.
At this point, it is clear that without the quantitative research findings the researcher would not know the low level of knowledge reported by teachers in every demographic for psycho-social, biological, disability categories, and sexual health education in general. The researcher would not know if, or where the significant differences between reported knowledge occur within the participants. Without the qualitative research findings, the researcher would not know that the majority of teachers desire more training and knowledge. Nor would it be understood that teachers exhibit fear through lack of knowledge, lack of support, and concern for themselves and their students with and without disabilities. The majority of teachers want all students, regardless of ability, to have a comprehensive sexual health education and many want abstinence to be emphasized and included as an option. These teachers support inclusion. There is a small minority that do not support inclusive practice concerning sexual health education, others that do not want sexual health education within the school system, and a few teachers that believe strongly in abstinence-only. Without the qualitative findings, the researcher would only know that teacher knowledge scores are low, and would not have insight as to what needs to be done to help raise the low scores. The qualitative findings give insight into what teachers are encountering in the field and indicate avenues to explore that will help to increase their knowledge.

This remarkable amount of insight comes with the mixed method design and is only the first step. The findings of this mixed methods research study demonstrate the value of this design. The preliminary findings led to a richer comprehension of what is happening among the participants. The next step looks at the joint displays, the merging and integration of the quantitative and qualitative data.
Patterns across demographics. The quantitative and qualitative data converge to paint a picture of the views, preparation, and knowledge of the participants. The detailed integration supports the initial MMR findings and previous research regarding teacher knowledge (Goldman & Coleman, 2013; Klein & Breck, 2010; Preston, 2013). Overall teacher knowledge is low, yet there is hope. Sexual health education teacher training significantly raises the teacher’s knowledge scores. This is just the beginning, more training is needed. The scores for knowledge have been raised through teacher training, but although concern and support scores are high, and teacher knowledge scores, regardless of training, remain low. Teachers need help and support to increase their knowledge and reduce their fears (Eisenberg et al., 2013; Goldman & Coleman, 2013; Kirby, Coyle, Forrest, Rolleri, & Robin, 2011; SIECUS, 2012).

Disability received the lowest knowledge and preparation scores and the highest concern scores. These results show that students with disabilities do not have access to a sexual health education curriculum (Attwood et al., 2014; Boehing, 2006; Eisenberg et al., 2013; Kirby, Coyle, Forrest, Rolleri, & Robin, 2011; Murphey & Elias, 2006; SIECUS, 2012; Slocum et al., 2016; Travers et al., 2014). This is indicative of the need to support teachers in order to support the sexual health education needs of their students with and without disabilities.

Biological knowledge received the lowest concern scores across demographics. These low scores could be due to a lack of concern, lack of exposure to the biology of sexual health education, a lack of awareness, or a combination of the three. Psycho-social knowledge received the highest knowledge and preparation scores, and slightly higher concern scores when compared to biological knowledge. Secondary teachers, females,
teachers from rural schools, teachers with no training, and teachers with comprehensive training emphasize concern for the inclusion of and training in psycho-social aspects of sexual health education.

Next to disability categories (des), sexual health education training (shet) received the overall lowest mean scores. The teachers are not prepared to teach comprehensive or abstinence based sexual health to students in general education or special education. These results confirm the literature regarding lack of access (Advocates for Youth, 2006; Attwood et al., 2014; Barnard-Brak et al., 2014; Boehning, 2006; Klein & Breck, 2010; Preston, 2013; SIECUS, 2012, 2014; Slocum et al., 2016).

What has been discovered in this study is the high concern and support for training by teachers in special education, elementary, and secondary settings. This high level of concern and support reflects teacher need for training in sexual health education. The support for a variety of levels of training and the support for combining sexual health curriculum, for comprehensive only, and for comprehensive only for students with disabilities further demonstrates the desire of teachers to effectively help their students with and without disabilities. Many of the teachers were unaware of the research supporting comprehensive sexual health education and that it is an evidence-based (AVERT, 2014; Kirby, 2008; Kohler, 2008; SIECUS, 2015a; Stanger-Hall & Hall, 2011; Santelli and Kantor, 2008; Tremholm et al., 2007), yet they know it works and the majority support the implementation of the curriculum.

Inclusion was important to the teachers. Not only did the majority of teachers support inclusion of students with disabilities, they also supported teaching these students the exact same content as their non-disabled peers. This study shows teachers were in line
with disability rights (Individuals with Disabilities Education Act, 2004; The Rehabilitation Act, 1973). Several teachers emphasized the need to take into account the various effects of disabilities on how the student learns, and the need for curricula that ensures students with disabilities receive the content needed to achieve sexual health and make safe choices. The teachers acknowledged the need for students with disabilities to receive comprehensive knowledge in order to protect and empower themselves.

A minority of teachers in this study who scored low on teacher knowledge, did not support sexual health education in schools, supported only abstinence based sexual health education, and did not support comprehensive sexual health education for students with disabilities. What is to be done about this minority of teachers? First, these teachers should not teach sexual health education. The concern becomes their level of power and influence. The level of power and influence of this minority is essential to understand within a system. This is particularly true for special education. Lawful, evidence-based practice, by definition, should be supported and implemented. A teacher with enough power and voice may negate what is evidence based and what is lawful.

**Limitations**

Several factors could limit the effectiveness of this study. The limitations for the quantitative portion include the lack of a tested and validated instrument to use in working to answer the research questions. The survey instrument was created for the purpose of this study and there may be flaws in the instrument that were not identified. To help reduce the risks of flaws the instrument was field tested by experts in education to address external reliability. A factor analysis was conducted on the instrument to test the model. The factor analysis results indicate a good survey model (Field, 2009). The
Cronbach’s alpha determined high internal validity. The repeated Mann Whitney U tests increase the risk of a Type 1 error, \( \alpha \) – inflation, when the null hypothesis is rejected, but is actually true. The statistical tests in this study failed to reject the null hypothesis, no differences were found when comparing a special education license to having no special education license. Due to the lack of rejection, a Type 1 error is unlikely to have occurred. However, for the significant results from testing the additional demographic data, a Type 1 error may have occurred.

This study relies on self-reported survey data, which cannot be substantiated. The quantitative portion of the instrument, designed to study both the knowledge and preparation of licensed teacher sexual health education, could reflect teacher confidence and not knowledge or preparation.

The limitations for the qualitative portion include the researcher’s history, which may have influenced the coding of the data and affected the resulting themes. To decrease the risk of researcher bias, an additional highly qualified researcher helped with the qualitative data analysis. The lack of member checking or “descriptive triangulation (consistency between researcher and participants)” may decrease the trustworthiness of the data (Leech & Onwuegbuzie, 2007, p. 575).

Implications

This section is a discussion of the theoretical, political, and practical implications. The theoretical implications compare the findings of the study to critical disability theory. In order to overcome the barriers to access for sexual health education facing students with disabilities confirmed by this study the practical implications include various action-oriented solutions.
Theoretical.

The findings of this study align with critical disability theory and support the principal foundations of the theory. In comparing the quantitative, qualitative, and mixed methods integration findings of this study to critical disability theory (CDT), the researcher has concluded that the findings both align with the principals of CDT and inform the theory. Critical disability theory rose out of the awareness of civil rights violations and the need for a social justice movement focusing on people with disabilities (Meekosha & Shuttleworth, 2009). The findings of this study support the need for critical disability theory as students with disabilities are experiencing barriers to the access of sexual health education, as further confirmed by this study.

The low teacher knowledge and preparation scores for disabilities categories of students across teacher license type, including special education, on the SHED teacher knowledge questionnaire supports the need for ‘social transformation’ and action as defined by critical theory (Hosking, 2008). The qualitative findings support the desire of the majority of teachers to: increase their sexual health education knowledge; to receive support; and, provide evidence-based sexual health education to students with disabilities. These teachers acknowledge the inequity and are willing to take action to change current societal barriers for students with disabilities. The minority of teachers believe that students with disabilities should receive abstinence-only education. These teachers not only have low knowledge and preparation scores, they also feel that students with disabilities should not receive the same sexual health education content as their peers who are without disabilities. Though there are conflicting views, the teachers in this study
align with the principals of critical disability theory. There is a systemic problem; the societal construct is limiting the sexual health education of students with disabilities.

The results of this study inform critical disability theory in relation to the field of education. There is a snowball effect occurring within the problematic political framework and ideologies governing our society in regard to sexual health education for all students in mainstream society. The problems are compounded for students with disabilities. The lack of mainstream support for comprehensive sexual health education further marginalizes students with disabilities. Systemic change is necessary to empower and protect students with disabilities to both safely enjoy their sexuality and to protect themselves from predators. There is need for research promoting empowerment for the disadvantaged and disenfranchised. This research includes participatory mixed method action research, community based mixed method research, and social justice/transformational mixed method research.

**Political.**

The United States government, as recently as 2015, has shown support for abstinence based sex education (NAEA, 2015), even in the face of overwhelming scientific research supporting the effectiveness of comprehensive sex education (Kirby, 2008; Kohler et al., 2008; Santelli & Kantor, 2008; SIECUS, 2016). Federal legislation must change to support comprehensive sexual health education within the public school system. It is essential for the well-being of the country’s youth that sexual health education programs and curriculums are rooted in evidence-based practice. To create this change, the federal government must be inundated with irrefutable proof in the form of high quality research supporting the use of comprehensive sexual health education. The
fact is that more than 55 empirical research studies have not convinced legislatures (Kirby, 2008), perhaps increasing that number to over 100 will.

The lack of funding for sexual health education research creates a barrier to accomplishing this necessary research (Eisenberg et al., 2013; Kirby, Coyle, Forrest, Rolleri, & Robin, 2011; SIECUS, 2015b, 2016). The current legislation is working against scientific evidence supporting best practice by damaging the system with antiquated laws and policies.

Those in power (Federal, State, and Local Governments, Departments of Education, school district and school board officials) need to be educated on a continual basis because the people in positions of power constantly change. These officials need to be educated about how people and students with disabilities are at higher risk without receiving comprehensive sexual health education.

Federal legislation needs to be created that will support research in the area of sexual health education and disabilities. Legislation will need to amend IDEA 2004 by incorporating specific content addressing the need for comprehensive sexual health education for people with disabilities.

Practical.

Looking toward the future optimistically, the first step in solving the current problems must be the passage of legislation supporting and funding the research, development, implementation and evaluation of comprehensive sexual health education. A portion of the funding for these changes needs to support the development of teacher education programs for sexual health education and the creation of valid and reliable comprehensive sexual health programs within the public-school system.
Each state’s Department of Education should offer endorsements on teacher licensure in sexual health education. Teacher education programs would then need to provide the education in sexual health and include training in personal safety and abuse prevention. This endorsement needs to be encouraged and promoted for both general and special education teachers to attain. Only teachers with this endorsement would be allowed to teach sexual health education and be required to take professional development to keep the endorsement. Initially, these programs would need to be created as pilot programs and researched for efficacy. Then revised on an ongoing basis. To receive an endorsement to teach sexual health education, a class specifically addressing sexual health education for students with disabilities must be successfully completed. Disability categories and characteristics would be taught and the course would include: the mastery of differentiating sexual health education lesson plans; adapting and modifying curriculum; and, a solid introduction to behavior management techniques. Sexual health educators would learn how to assist special educators through the incorporation of goals and objectives into students individualized education plans (IEPs).

Partnerships and collaboration are needed to make necessary changes within the system in order to overcome the barriers to sexual health education that students with disabilities face. The partnerships need to be based in trust, teamwork, and a shared vision in order to create a climate that promotes collaboration. Key stakeholders need to be involved in mixed method action and transformational research. The research needs to be conducted on programs that are currently in place serving individuals with disabilities to establish validity and reliability; in essence to see what may be already working within our society. Training modules need to be created for teachers, parents, healthcare
professionals, health educators, and for students. These training modules need to be tested for effectiveness.

The reduction of fear and anxiety will follow the increase of knowledge that will come with effective, reliable, and validated training modules. Teachers need to receive state, district, and administrative support to ensure the constant and consistent access to materials and time for training. The trainings need to be offered as professional development courses, that carry with them continued education credits for practicing teachers, and must be implemented within teacher education programs for pre-service teachers. Model practice would include the creation of mentorship programs within school and community systems focused on recruiting experienced sexual health educators, who would implement trainings and offer support. This model relates to the previous paragraph, because the need for collaboration and key stakeholder support is necessary. It is logical that the more confident and knowledgeable the teachers and professionals are regarding comprehensive sexual health education; the more access students and parents will have to sexual health education.

Parent, family, and caregiver curriculum and classes need to be offered to address parental fear and anxiety (Barnard-Brak et al., 2014; Eisenberg et al., 2013; Kok & Akyuz, 2015; Rohleder, 2010). There must be options for parents to learn about sexual health, protection, and empowerment. Courses for family members, such as the siblings of students who have disabilities, would similarly enable entire families to be protected and empowered with knowledge regarding sexual health education. Caregivers (e.g. nannies, caseworkers, respite care workers, relatives, etc.) would be invited and included in the process.
Options for including teachers, parents, and professionals who do not support comprehensive sexual health education need to be identified. These options could include sexual health curricula with a focus on safety. Leslie Walker-Hirsch, author of *The Facts of Life ...and More*, and co-creator of the relationship and intimacy curriculum *Circles*, offered advice to the researcher in regard to the barriers faced when trying to teach comprehensive sexual health to students with disabilities:

There is always a back door. My entire career and life’s purpose has been in the pursuit of this back door. Fear is prevalent, yet knowledge is protective. Parents and families, professionals in every field fear the unknown. The idea of a vulnerable child, turning into a vulnerable adult, coupled with sex creates fear. The back door to teaching sex education to people with disabilities, to youth with disabilities is under the umbrella and label of safety and protection. Get in the back door. Earn trust and respect. Teach. (L. Walker-Hirsch, personal communication, January 27, 2012)

Researchers, teachers, and professionals in the field of sexual health education need to learn to find and use this back door. This will help include and educate parents and teachers who object to sexual health education for students with disabilities. To benefit society, it is necessary work to gain the trust of a community and to educate these community members using patience, kindness, and understanding. It is imperative to offer options that invite and include people of various backgrounds and cultures who would otherwise present barriers and roadblocks to teaching sexual health education.

The topic of sexual health needs to become overt and not covert. Stakeholders can work together to create options within schools and throughout the community to
improve access to sexual health education for students with disabilities. The creation of online educational opportunities for teachers, parents, and students that are engaging and participatory would help alleviate the discomfort that comes with openly talking about sexuality in a room full of people. Reputation and quality are key components for program sustainability. Resources need to be secured and made available in order to create a high quality educational system guiding sexual health education.

**Recommendations for Research**

This section provides recommendations to meet the needs, and directions for research in the promotion of sexual health education for students with disabilities. Research teams need to be established to design and conduct mixed methods research. The benefits of mixed methods research has been established (Caruth, 2013; Creswell, 2015; Lund, 2012; Niaz, 2008; Palinkas, Horwitz, Chamberlain, Hurlburt, & Landsverk, 2011). The research teams need to focus on community based, action, and transformational mixed method research approaches (Creswell & Plano-Clark, 2011; Ivankova, 2015) to: effectively meet the needs of students with disabilities; to ensure their empowerment and protection; to increase their access to education; and, to decrease the alarming rates of sexual, physical, and emotional abuse. The creation of effective teams is one of the ethical components of mixed method research and enhances construct validity (Creswell & Plano-Clark, 2011).

Conducting a thorough needs assessment to establish the most appropriate actions when designing the research study must involve partnering with key informants within the community (Ivankova, 2015). Various fields, including Public Health, Medicine, Psychology, and Education, need to merge to create a team of professionals that can
conduct a multi-phased needs assessment. Health practitioners, health educators, counselors, special educators, general educators, parents, families, and students with disabilities working together with the research team to address the complexity of needs within sexual health education can begin to address the following questions: (a) Which level(s) of training are best suited for this community? (b) What is the best approach to deliver the curriculum? (c) Does this curriculum work? (d) Which sexual health education curricula works for which disabilities, considering the level of disability? (e) What will be most appropriate curriculum to ensure both empowerment and protection? and, (f) How will the program, curriculum, training modules be evaluated?

Research is needed to overcome each of the seven identified barriers to sexual health education for students with disabilities found in the literature. The seven barriers include: lack of teacher education programs specifically addressing sexual health education (Attwood, Henault, & Dubin, 2014; Goldman & Coleman, 2013; Klein & Breck, 2010; Preston, 2013; Wilkenfeld & Ballan, 2011); the lack of teacher confidence and knowledge resulting in increased concern, anxiety, and fear (Barnard-Brak, Schmidt, Chesnut, Wei, & Richman, 2014; Eisenberg, Madsen, Oliphant, & Sieving, 2013; Eisenberg et al., 2010; Rohleder, 2010; Travers et al., 2014; Wilkenfeld & Ballan, 2011); the effect of parental anxiety and fear (Barnard-Brak et al., 2014; Eisenberg et al., 2013; Kok & Akyuz, 2015; Rohleder, 2010); the need for school/teacher and parent partnership to effectively teach sexual health education (Goldman & Coleman, 2013; Kok & Akyuz, 2015; Travers & Tincani, 2010); the lack of the implementation of valid and reliable sexual health education with standards guiding development, implementation, and evaluation (Grievo, McLaren, & Lindsay, 2007; FoSE, 2012; Preston 2013); the lack of
federal funding supporting programs specifically designed for students with disabilities based on comprehensive sexual health education (Eisenberg et al., 2013; Eisenberg et al., 2010; Kirby, Coyle, Forrest, Rolleri, & Robin, 2011; SIECUS, 2015b, 2016); and, the socialized context of the sexuality of students with a disability as deviant (Erevelles, 2011; Morgan, Mancl, Kaffar, & Ferreira, 2011; Travers & Tincani, 2010; Travers et al., 2014).

Specifically, research directions need to address the following questions:

- What do parents of students with disabilities need? What is the best way to empower and educate parents?
- What do students with disabilities, across disability categories need? What options show promise regarding differentiating sexual health curriculum to accommodate students?
- What do adults with disabilities across disability categories need? What sexual health education options do they wish they had received throughout school from parents, teachers, and health professionals? What sexual health education options do the adults need now?
- What training options for teachers are most effective? What is the optimal way(s) to evaluate content knowledge and practice of sexual health education? Do training options need to be tailored for different demographics? Does training content need to be relevant to human development within license type (elementary, secondary, and post-secondary)?
- What is needed to create valid and reliable alternative tests to accommodate disability?
• Analysis of subject through positioning theory: how do power dynamics influence/effect sexual health education?

To further ensure appropriate alternative testing for a variety of disability categories, researchers need to create psychometric tests. The tests must be piloted in an effort to reduce bias and ensure access for every student. The researchers need to safety measure that the content of tests are based on comprehensive education and actually test for knowledge that will ensure protection, empowerment, and self-determination.

Each of the following components needs to be addressed consistently and constantly: the process of evaluating current sexual health education curricula for students with disabilities, modifying the curricula as needed, creating new curricula and, evaluating the effectiveness of the new curricula. The research needs to focus on ensuring the content is accessible for all students regardless of disability type or severity, evaluating what the students are learning, if they are learning, and if they are retaining the information. These evaluative steps will benefit sexual health education for both students with and without disabilities.

The quantitative portion of this study relies on self-reported data for teacher knowledge and preparation. A follow up exploratory mixed methods study should aim to test teacher knowledge using a sexual health education content knowledge exam. The teachers in the study would receive comprehensive sexual health education training that includes content covering each of the sexual health education standards (FoSE, 2012), best practices for teaching the content to students with and without disabilities. This study needs to include a pre, post, and follow up test design. The content knowledge exam administered and the SHED teacher knowledge instrument should be included in each
Focus groups and/or interviews with the teachers need to be conducted in each phase. Data from this study can be analyzed for the effectiveness of the training, differences between content knowledge and perceived content knowledge, changes in views/perceptions, and confidence levels could also be analyzed and compared to actual content knowledge.

The Sexual Health Education and Disability (SHED) teacher knowledge instrument would benefit from the addition of two demographic categories. First, an option for administrator needs to be added. Second, a category for disability self-identification. This category would include an option to self-disclose disability for self, a family member, and/or a child. The addition of this knowledge would enhance the results of future research utilizing the SHED teacher knowledge instrument.

Research efforts directed toward identifying the sexual health needs of students with disabilities, their teachers, and their families are necessary to empower and protect. This suggested research will provide direction for further research, practice, legislation, policies, and funding.

**Conclusion**

The utilization of the convergent parallel mixed method research design was necessary to comprehend the views, knowledge, and preparation of licensed teachers. This study confirms the lack of teacher education programs, teacher knowledge, anxiety, and fear as barriers to access for sexual health education for students with disabilities (Barnard-Brak et al., 2014; Eisenberg et al., 2013; Eisenberg et al., 2010; Klein & Breck, 2010; Preston, 2013; Rohleder, 2010; SIECUS, 2015a; Wilkenfeld & Ballan, 2011). The results align with the need for change and progress.
Teachers need and desire knowledge that is evidence-based to teach students with and without disabilities sexual health education. Teachers desire to alleviate their own fears and concerns through the attainment of this knowledge. This desire is motivated by the need to protect and empower their careers, their students without disabilities, and students with disabilities. Teachers are aware of their lack of knowledge and aware of what they require in order to help their students.

Knowledge regarding sexuality coupled with self-care creates a greater capacity to protect oneself from harm and enhances an ability to be cognizant of the sexual boundaries and expectations that are prevalent within society. This is especially true for students with disabilities. Unfortunately, there are teachers and parents who in a misguided effort to protect their students and children with disabilities (based in fear, anxiety and lack of knowledge) choose not to teach those individuals sexual health. People with disabilities are being abused due to their lack of knowledge (Alriksson-Schmidt et al., 2010; Murphy & Elias, 2006; Skarbek et al., 2009; SIECUS, 2015b; Sullivan & Knutson, 2000).

This study addressed several barriers to accessing sexual health education through bridging gaps in the literature. The findings of this study address the following research gaps: identification and analysis of the needs of licensed general and special educators, teacher education in the area of sexual health for people with disabilities, school/teacher and parent partnership to effectively teach and protect students with disabilities in regard to sexual health, and the sexual health education needs of people with disabilities. This study promotes access to quality sexual health education for people with disabilities.

With continued efforts, the promotion of equal access can significantly enhance the
ability of this vulnerable, undereducated, and marginalized population to better protect themselves from sexual predators, to minimize the possibility that they themselves will become sexual predators, and, to ensure that they become sexually healthy human beings. Findings from this study, confirm previous research, contribute to the knowledge in the field, address identified research gaps, and identify further research to improve the access to quality sexual health education for people with disabilities.

The current system does not work. It is time for research and practice to merge. It is time for the barriers to sexual health for people with disabilities to be understood and shattered. This study contributes to this end. There is a need for the art of persuasion. There is a need to couple persuasion with rapport. Researchers need to approach communities with the willingness to understand the experiences of each citizen, particularly those with diverse perspectives. This will pave the way to new horizons. This mixed methods study of teachers’ knowledge, preparation, and views regarding the sexual health education of students with and without disabilities is one-step toward a new horizon, to a systemic shift in legislation, ideologies, and instructional practice. Teachers want to change. Teachers support inclusive practices in sexual health education for students with disabilities. Teachers want the knowledge to promote and empower the sexual health of students with disabilities. Teachers need support. As this study indicates, the achievement of these goals is possible.

Access to knowledge to improve sexual health is a right not a privilege. This knowledge improves our society by improving relationships, increasing safety, and reducing the costs from poor sexual health outcomes. There is a directive power and energy within the civil rights movement that has been changing lives for generations. The
power that will ensure full access to comprehensive sexual health education for both those with and without disabilities.
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U.S. Const. amend. XIII

U.S. Const. amend. IV


Appendix A – Instrument Development

Interview Questions from Small Qualitative Study

1. What is your educational background? Tell me about your formal education.

2. How has your formal education prepared you to help students with disabilities address their sexual health?

3. Do you think this topic is important for teachers? Why or why not?

4. What is your work experience as a Licensed Teacher? Tell me about your work experience with students with disabilities.

5. How did your on the job training and/or professional development prepare you to help students with disabilities address their sexual health needs?

6. Are there any stories that you would like to share regarding the needs of teachers and students on this topic? Any relevant situations and/or experiences that you would like to share?

7. What do teachers need to effectively teach students with disabilities cope/learn about the students’ sexual health?

8. How do you think teachers need to be prepared?

9. Do you have any suggestions?

10. What do students with disabilities need?

11. What would help?

12. How could these needs be met? For teachers? For students?
Appendix B – Institutional Review Board (IRB) Exempt Approval

IRB Exempt Approval

DATE: March 31, 2016
TO: Shanon Taylor, Ed.D.
FROM: University of Nevada, Reno Institutional Review Board (IRB)

PROJECT TITLE: [876400-1] Licensed Teacher Knowledge and Training Regarding the Sexual Health Education of Students with Disabilities

REFERENCE #:
SUBMISSION TYPE: New Project
ACTION: DETERMINATION OF EXEMPT STATUS
DECISION DATE: March 31, 2015
REVIEW CATEGORY: Exemption Category #2

The Research Integrity Office, or the IRB reviewed this project and has determined it is EXEMPT FROM IRB REVIEW according to federal regulations. Please note, the federal government has identified certain categories of research involving human subjects that qualify for exemption from federal regulations.

Only the Research Integrity Office and the IRB have been given authority by the University to make a determination that a study is exempt from federal regulations. The above-referenced protocol was reviewed and the research deemed eligible to proceed in accordance with the requirements of the Code of Federal Regulations on the Protection of Human Subjects (45 CFR 46.101 paragraph [b]).

Reviewed Documents

- Advertisement - Recruitment Flyer for Survey (UPDATED: 03/7/2016)
- Application Form - Exempt, IRB-Flex Application Form (UPDATED: 03/18/2016)
- Consent Form - Prospective Re-Consent for Interview Records (UPDATED: 03/18/2016)
- Consent Form - Survey Cover Sheet and Consent Form (UPDATED: 02/29/2016)
- Questionnaire/Survey - Survey.PDF version (UPDATED: 03/7/2016)
- Questionnaire/Survey - Survey (UPDATED: 03/7/2016)
- University of Nevada, Reno - Part I, Cover Sheet - University of Nevada, Reno - Part I, Cover Sheet (UPDATED: 02/26/2016)

If you have any questions, please contact Valerie Smith at 775.327.2370 or at valenes@unr.edu.

NOTE for VA Researchers: You are not approved to begin this research until you receive an approval letter from the VASNHCs Associate Chief of Staff for Research stating that your research has been approved by the Research and Development Committee.

Sincerely,

Richard Bjur, PhD
Co-Chair, UNR IRB
University of Nevada Reno

Janet Usinger, PhD
Co-Chair, UNR IRB
University of Nevada Reno
Appendix C – Institutional Review Board (IRB) Consent Form

Welcome to the Sexual Health Education Survey

Consent Information

We are conducting a research study to gain an understanding of teacher knowledge and training regarding sexual health education for students with and without disabilities. Your input is needed to understand the needs of both teachers and students regarding sexual health education.

If you volunteer to be in this study, you will be asked to fill out a survey. Your participation should take about 10 minutes, depending on the time it takes you to answer the open-ended survey questions.

This study is considered to be minimal risk of harm. This means the risks of your participation in the research are similar in type or intensity to what you encounter during your daily activities.

Benefits of doing research are not definite; but we hope your answers will help to design and implement sexual health education programs and teacher training programs to further protect and educate students in both general education and special education settings. There are no direct benefits to you in this study activity.

The researchers and the University of Nevada, Reno will treat your identity and the information collected about you with professional standards of confidentiality and protect it to the extent allowed by law. You will not be personally identified in any reports or publications that may result from this study. The US Department of Health and Human Services, the University of Nevada, Reno Research Integrity Office, and the Institutional Review Board may look at your study records.

Your participation in this study is completely voluntary. You may stop at any time. Declining to participate or stopping your participation will not have any negative effects on your

You may ask about your rights as a research participant. If you have questions, concerns, or complaints about this research, you may report them (anonymously if you so choose) by calling the University of Nevada, Reno Research Integrity Office at 775.327.2368.

Upon completion of the survey you will be entered into a drawing for the chance to win one of five $25.00 Starbucks gift cards. You will receive the results of this drawing immediately after the closing date of this survey.

If you have any questions or comments regarding the survey please feel free to contact Anna Treacy, PhD Candidate and Graduate Assistant at the University of Nevada, Reno by email at atracey@unr.edu or by phone at 775-750-9600.

Thank you for your participation in this study!
Please Join Research Study

Take one 10-minute survey to participate. Obtain an extra raffle ticket for the Share Event drawing and a chance to win one of five $25.00 Starbucks gift cards.

This survey study seeks to identify the self-reported knowledge and training of licensed general and special education teachers regarding sexual health education, with the intent to improve sexual health education for students with disabilities.

For information to participate please e-mail:
Anna C. Treacy, MPH, PhD Candidate
Educational Specialties
College of Education
University of Nevada, Reno
treacy@unr.edu

Topic: Licensed Teacher Knowledge and Training Regarding Sexual Health Education

Where: Mega Conference, Harvey’s Hotel, South Lake Tahoe

Who: To participate you must be a licensed teacher

When: April 8th – 10th, 2016

Time: On average: 10 minutes
Appendix E - Instrument

Welcome to the Sexual Health Education Survey
Consent Information

We are conducting a research study to gain an understanding of teacher knowledge and training regarding sexual health education for students with and without disabilities. Your input is needed to understand the needs of both teachers and students regarding sexual health education.

If you volunteer to be in this study, you will be asked to fill out a survey. Your participation should take about 10 minutes, depending on the time it takes you to answer the open-ended survey questions.

This study is considered to be minimal risk of harm. This means the risks of your participation in the research are similar in type or intensity to what you encounter during your daily activities.

Benefits of doing research are not definite; but we hope your answers will help to design and implement sexual health education programs and teacher training programs to further protect and educate students in both general education and special education settings. There are no direct benefits to you in this study activity.

The researchers and the University of Nevada, Reno will treat your identity and the information collected about you with professional standards of confidentiality and protect it to the extent allowed by law. You will not be personally identified in any reports or publications that may result from this study. The US Department of Health and Human Services, the University of Nevada, Reno Research Integrity Office, and the Institutional Review Board may look at your study records.

Your participation in this study is completely voluntary. You may stop at any time. Declining to participate or stopping your participation will not have any negative effects on your

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Upon completion of the survey you will be entered into a drawing for the chance to win one of five $25.00 Starbucks gift cards. You will receive the results of this drawing immediately after the closing date of this survey.

If you have any questions or comments regarding the survey please feel free to contact Anna Treacy, PhD Candidate and Graduate Assistant at the University of Nevada, Reno by email at atreacy@unr.edu or by phone at 775-750-8600.

Thank you for your participation in this study!
Domains of Knowledge

1. Have you received professional development or college course work on the subject of teaching sexual health education? If no, skip to question number 3.
   ○ Yes    ○ No

2. If yes, what category of sexual health education was taught to you?
   ○ Abstinence-based sexual health education (e.g. waiting until marriage)
   ○ Comprehensive-based sexual health education (e.g. full explanation of sexual health)

The following questions relate to your knowledge regarding sexual health education:

Questions 3-6 are on a scale ranging from 1 to 6 (1 = not at all prepared, 2 = minimally prepared, 3 = somewhat prepared, 4 = prepared, 5 = well prepared, and 6 = very well prepared). Mark one number for each question:

3. How prepared are you to teach abstinence-based sexual health education to students without disabilities?
   ○ 1    ○ 2    ○ 3    ○ 4    ○ 5    ○ 6

4. How prepared are you to teach abstinence-based sexual health education to students with disabilities?
   ○ 1    ○ 2    ○ 3    ○ 4    ○ 5    ○ 6

5. How prepared are you to teach comprehensive-based sexual health education to students without disabilities?
   ○ 1    ○ 2    ○ 3    ○ 4    ○ 5    ○ 6

6. How prepared are you to teach comprehensive based sexual health education to students with disabilities?
   ○ 1    ○ 2    ○ 3    ○ 4    ○ 5    ○ 6
Questions 7-10 are open ended questions, please take the time to answer these questions. Feel free to use the back of the paper if you need more room to write.

7. Describe your views on teaching abstinence-based sexual health education to students without disabilities.

8. Describe your views on teaching abstinence-based sexual health education to students with disabilities.

9. Describe your views on teaching comprehensive-based sexual health education to students without disabilities.

10. Describe your views on teaching comprehensive-based sexual health education to students with disabilities.

The following set of questions emphasize the seven National Sexuality Education Standards.

Questions 11-24 are on a scale ranging from 1 to 6 (1 = not at all prepared, 2 = minimally prepared, 3 = somewhat prepared, 4 = prepared, 5 = well prepared, and 6 = very well prepared). Mark one number for each question:

11. How prepared are you to teach Anatomy and Physiology including a foundation for understanding basic human functioning of the reproductive system to students without disabilities?
12. How prepared are you to teach Anatomy and Physiology including a foundation for understanding basic human functioning of the reproductive system to students with disabilities?

13. How prepared are you to teach Puberty and Adolescent Development, including pivotal milestones that have an impact on physical, social and emotional development to students without disabilities?

14. How prepared are you to teach Puberty and Adolescent Development, including pivotal milestones that have an impact on physical, social and emotional development to students with disabilities?

15. How prepared are you to teach Identity, including fundamental aspects of people’s understanding of who they are to students without disabilities?

16. How prepared are you to teach Identity, including fundamental aspects of people’s understanding of who they are to students with disabilities?

17. How prepared are you to teach Pregnancy and Reproduction, including information regarding how pregnancy occurs and decision-making process to avoid a pregnancy to students without disabilities?

18. How prepared are you to teach Pregnancy and Reproduction, including information regarding how pregnancy occurs and decision-making to avoid a pregnancy to students with disabilities?
19. How prepared are you to teach *Sexually Transmitted Diseases and HIV*, including both content and skills for understanding and avoiding STDs and HIV, including how they are transmitted, their signs and symptoms and testing and treatment to students *without* disabilities?

[ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 | [ ] 5 | [ ] 6

20. How prepared are you to teach *Sexually Transmitted Diseases and HIV*, including both content and skills for understanding and avoiding STDs and HIV, including how they are transmitted, their signs and symptoms and testing and treatment to students *with* disabilities?

[ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 | [ ] 5 | [ ] 6

21. How prepared are you to teach *Healthy Relationships*, including guidance on how to successfully navigate changing relationships among family, peers and partners to students *without* disabilities?

[ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 | [ ] 5 | [ ] 6

22. How prepared are you to teach *Healthy Relationships*, including guidance on how to successfully navigate changing relationships among family, peers and partners to students *with* disabilities?

[ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 | [ ] 5 | [ ] 6

23. How prepared are you to teach *Personal Safety*, including the need for a growing awareness, creation and maintenance of safe school environments to students *without* disabilities?

[ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 | [ ] 5 | [ ] 6

24. How prepared are you to teach *Personal Safety*, including the need for a growing awareness, creation and maintenance of safe school environments to students *with* disabilities?

[ ] 1 | [ ] 2 | [ ] 3 | [ ] 4 | [ ] 5 | [ ] 6
Questions 25 and 26 are open ended questions, please take the time to answer these questions. Feel free to use the back of the paper if you need more room to write.

25. Describe the type of preparation you believe teachers should receive in order to teach sexual health education to students without disabilities.

26. Describe the type of preparation you believe teachers should receive in order to teach sexual health education to students with disabilities.

Disability Category - The following questions are based on teaching students with disabilities.

Questions 27-29 are on a scale ranging from 1 to 6 (1 = not at all prepared, 2 = minimally prepared, 3 = somewhat prepared, 4 = prepared, 5 = well prepared, and 6 = very well prepared). Mark one number for each question and, if applicable, write in which specific disability(s) you are prepared to teach:

27. How prepared are you to teach sexual health education to students with high-incidence disabilities (e.g. learning disabilities (LD), intellectual disabilities (ID), emotional/behavioral disorders (E/BD), etc.)?

   ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

   Which high-incidence disabilities:

28. How prepared are you to teach sexual health education to students with low-incidence disabilities (e.g. autism spectrum disorder, hearing impairments, visual impairments, etc.)?

   ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6

   Which low-incidence disabilities:

29. How prepared are you to teach sexual health education to students with physical disabilities (e.g. orthopedic impairments, etc.)?

   ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6
Which physical disabilities:

Demographics

What is your gender?
☐ Male ☐ Female

What is your age?

What ethnic and racial group are you a member of?

What license do you hold as a teacher? Mark all that apply.
☐ General Education – Elementary
   Endorsements (please list all endorsements to your license):

☐ General Education – Secondary
   Content area(s) and endorsements (please list all content areas you are licensed to teach and all endorsement to your license):

☐ Special Education
   Additional endorsements (please list all endorsements to your license):

School in which you work is considered:
☐ Urban ☐ Rural

How many years have you been working as a licensed teacher?

Thank you!
Appendix F – Dedoose Inter-rater Reliability Report

Dedoose Training Center Test Data
Test: Second Test
Type: Code Application
Taken By: atreacy, On: 7/21/2016
Pooled Kappa: 0.793250968992248

Test Description: Test of reliability on colleague’s code - for third (hopefully final) - code tree!

Dedoose Code-specific application results are reported using Cohen’s kappa statistic—Cohen (1960), ‘A coefficient of agreement for nominal scales.’ Educational and Psychological Measurement, 20(1):37-46. Cohen’s kappa statistic is a widely used and respected measure to evaluate inter-rater agreement as compared to the rate of agreement expected by chance—based on the coding behavior or each rater. Further, to report an overall/global result for tests that include more than one code, we have adopted the Pooled Kappa, rather than a simple average of kappa’s across the set, to summarize rater agreement across many codes as reported in de Vries, Elliott, Kanouse, & Teleki (2008), ‘Using pooled kappa to summarize interrater agreement across many items.’ Field Methods, 20:272-282. There are a variety of proposed standards for evaluating the ‘significance’ of a Cohen’s kappa value. Landis and Koch (1977), (‘The measurement of observer agreement for categorical data.’ Biometrics, 33:378-382) suggest that kappa values of: <.20 = poor agreement, .21-.4 = fair agreement, .41-.6 = moderate agreement, .61-.8 = good agreement, and .81-1.0 = very good agreement. Cicchetti (1994)—‘Guidelines, criteria, and rules of thumb for evaluating normal and standardized assessment instruments in psychology.’ Psychological Assessment, 6:284-290)—and Fleiss (1971)—‘Measuring nominal scale agreement among many raters.’ Psychological Bulletin, 76(5):378-382—suggest similar guidelines that kappa values of: <.40 = poor agreement, .40-.59 = fair agreement, .60-.74 = good agreement, and .75-1.0 = excellent agreement. Finally, Miles and Huberman (1994)—‘Qualitative Data Analysis.’ Thousand Oaks, CA: Sage—suggest that inter-rater reliability should approach .90. While the individual researcher must determine the most appropriate standards for the particular research project, Dedoose visual indicators use the following criteria for interpreting kappa values: <.50 = poor agreement, .51-.64 = fair agreement, .65-.80 = good agreement, and >.80 = excellent agreement.