

ASSESSING INSTRUCTIONAL CONFIDENCE OF SECONDARY HEALTH EDUCATORS  
IN ILLINOIS: IMPLICATIONS FOR CURRICULAR AND POLICY DEVELOPMENT

BY

CHARLES P. HOLMES

DISSERTATION

Submitted in partial fulfillment of the requirements  
for the degree of Doctor of Philosophy in Community Health  
in the Graduate College of the  
University of Illinois at Urbana-Champaign, 2012

Urbana, Illinois

Doctoral Committee:

Professor Reginald J. Alston, Chair  
Professor Janet M. Reis  
Associate Professor Amelia M. Woods  
Susan M. Farner, Ph.D.

# ASSESSING INSTRUCTIONAL CONFIDENCE OF SECONDARY HEALTH EDUCATORS IN ILLINOIS: IMPLICATIONS FOR CURRICULAR AND POLICY DEVELOPMENT

Charles P. Holmes, M.S.P.H.  
Department of Kinesiology and Community Health  
University of Illinois at Urbana-Champaign, 2012  
Reginald J. Alston, Advisor

The goal of this study was to assess the relationship between the training/preparation of physical education teachers and their perceived instructional confidence levels in delivering health education information to high school adolescents across major topic areas established by the Illinois State Board of Education as critical content areas (I.S.B.E., 2010b). 283 participants completed the Health Education Confidence Survey (HECS) and were included in the data analysis. The subjects surveyed were currently enrolled (pre-service) or recently graduated (in-service) from physical education or kinesiology departments at one of three institutions within the state of Illinois: (1.) the University of Illinois at Urbana-Champaign, (2.) Illinois State University, and (3.) Eastern Illinois University. Three research hypotheses were tested to determine if a statistically significant relationship existed across any of the 18 items within the survey instrument. Using a Two-Way ANOVA, this study was able to conclude that a statistically significant difference exists between the perceived instructional confidence of current students and the perceived instructional confidence of recent graduates regarding health education topics. A significant difference exists in curricular satisfaction, course work depth, and professional support within this study population. This study highlights the need for further work with this population and potential changes required in physical education and health education curricula, as well as revisions to the health endorsement standards exam.

*Keywords:* Health Education, Confidence, Secondary Education, Physical Education.

**I DEDICATE THIS WORK TO:**  
**THE CREATOR WHO HAS MADE MY AMAZING LIFE POSSIBLE**  
**MY BEAUTIFUL WIFE AND BEST FRIEND DAWN**  
**MY LOVING AND SUPPORTIVE FAMILY**  
**AND TO MY ACADEMIC AND SOCIAL MENTOR SUSAN**

## **Acknowledgements**

I would like to thank the amazing faculty and staff of the Applied Health Sciences College at the University of Illinois at Urbana-Champaign for their assistance and continued encouragement throughout my graduate career. In both my masters and doctoral work I have had the opportunity to work with some truly amazing individuals and without them I would not be in the position that I am today. A special thanks needs to be extended to Dr. Reginald Alston, Dr. Susan Farner, Dr. Steven Notaro, Dr. Janet Reis, Dr. Amy Woods, Dr. Tim Cain, Dr. Lejla Delic-Ovcina, and Tina Candler. Your help and guidance throughout my graduate career will continue to lead me far into the future. While we will always be colleagues, I am hopeful that wherever our travels may lead us we will continue to be friends.

I would also like to thank the faculty and staff at Eastern Illinois University and Illinois State University, specifically Dr. Skip Williams, Dr. Alan Lacy, Dr. Hasan Mavi, Dr. Ovande Furtado, Dr. Kevin Hussey, and Dr. Scott Ronspies for allowing me access to their classrooms. Without your assistance this work would not have been possible. On multiple occasions many of you went above and beyond, and it did not go unnoticed.

Finally, thanks are due to the survey population of this study. Both the current students and recent graduates of the universities listed above have provided us in academia a new perspective through which to measure satisfaction and quality. It will be my continued mission to improve the state of health education for future generations to come.

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## CHAPTER 1

Children born on or after the year 2000 may be the first generation of children in the modern era to have a shorter lifespan than their parents due to poor lifestyle choices (Peterson, 2005). One of the primary causes for this decreased life expectancy is the current epidemic of childhood overweight and obesity facing the United States. Based on this information, one can see that the need for national health education reform is paramount (Okosun, Boltri, Eriksen, & Hepburn, 2006; Stubbs & Lee, 2004; Varela-Moreiras, 2006). Based on recent Youth Risk Behavioral Surveillance Survey (YRBSS) data and the Centers for Disease Control (CDC) projections, it is believed that children born on or after the year 2000 have a 1 in 3 chance of becoming overweight or obese in their lifetime (Centers for Disease Control, 2009). Compared with 1990, more than double the number of adolescents are overweight and nearly triple the number of teenagers. Without multiple levels of intervention, the quality of life and life expectancy in the United States will decrease in the coming generations (Centers for Disease Control, 2010c; Peterson, 2005). The reason for the shortened lifespan of young adults and the growing number of health issues affecting them is a topic that is often debated among health professionals. Many researchers believe that the ever changing landscape of health education may be a sizable contributor to these health disparities (Becker et al., 2008; Castro, 2009; Porter, McGrath, & Costello, 2008).

Health education, since its recognized development in the U.S. in 1865 at Amherst College, has had as its primary mission to keep American citizens free from disease and ailments, believing that they are fully capable of doing any work that would be acceptable for someone of that age and gender (J. E. Welch, 1982). Unfortunately, as will be shown, there are many potential barriers and variables that can prevent a person from embracing healthy lifestyle

behaviors. Due to these variables and barriers, we as a society have decided that all individuals who wish to teach health to K-12 students must earn at least a bachelors degree in a discipline and where required earn a health teaching endorsement. In most institutions, the primary courses needed for this endorsement are known as health education courses (AAHPERD & AAHE, 1985).

An additional development within health education over the years is that, due to budget constraints, the individuals in charge of providing health information are primarily trained as physical education instructors (DeGroft, 1998; PE Central, 2009; C. C. Wilson, 2001). While on the surface this may not appear to be much of an issue, most parents and students do not realize that health educators have varying curricular standards from county to county and from state to state (Schulte, 2008; J. E. Simon, 1971; Snyder, 2005; UK College of Education, 2009). These variations can make adequate preparation of future instructors all the more difficult. What also is cause for concern is that for more than a century, the United States of America has been operating physical and health education courses without any national standards or mandatory curricula (Education Portal, 2003-2011; Helms, 1999; NASPE, 2010).

Using the University of Illinois at Urbana-Champaign as an example among many, those individuals interested in becoming health educators typically need only to take introductory level courses in health education to meet certification standards to teach health along with their chosen discipline. The particular courses recommended for certification at the University of Illinois and other major four-year institutions are typically the lowest course levels in the health education sequence and are typically designed for freshmen in their first semesters of collegiate work (I.S.B.E., 2010a; Manross, 2009; UK College of Education, 2009).

The primary concern with this trend is that future instructors trained in physical education are not required to have exposure to any particular health topics in a depth that would be deemed significant by health education literature or health education experts (Jones, 2011; M. Simon, 2010; Snyder, 2005). Most health education experts agree, if an individual desires to teach health in addition to another course, they should be required to have a solid background in health education so that they feel more comfortable with the subject matter and can enter the classroom with greater confidence in information dissemination at all K-12 levels (Castro, 2009; Davidson, 2008; Jones, 2011).

Using health education as the focus, this study sought to assess the relationship between the training/preparation of physical education teachers and their confidence in delivering health education information to high school students. High school students (Grades 9-12) were chosen because at this level the students are typically exposed to a more complete picture of adult health habits and behaviors. Further, high school is typically the only level where students are consistently exposed to health information in a dedicated classroom format. Students in the earlier stages of education are often exposed to health information as part of their standard course work. These exposures vary from small vignettes using apples and oranges in mathematics to attending a once a week session of the D.A.R.E. program; none of these exposures result in a careful discussion of the issues (Castro, 2009; Rosenbaum, 2007; Story, 1999; The University of Texas School of Public Health at Houston, 2008).

This study is of interest because no research has been conducted to assess the quality and/or ability of physical education instructors from the perspective of health education. While curricular satisfaction and teacher preparedness are somewhat common areas for research, the



focus on the modern transition of physical educators to health educators and their confidence levels regarding this transition is certainly an uncharted area of inquiry.

It was my belief that current upperclassmen studying physical education instruction and pedagogy would believe their current health education standards are adequate preparation for the work and the populations that lie ahead and therefore will indicate higher levels of instructional confidence. Further, it was my belief that individuals trained primarily in physical education who have recently joined the workforce as health educators will state that their recent preparatory experience within health education was inadequate for the tasks they are now charged to fulfill. These hypothesized outcomes are based on previous curricular research studies conducted by Renn and Schulte (Renn & Jessup-Anger, 2008; Schulte, 2008). While these researchers focused their efforts on different disciplines and outcomes, the results remain the same; current students state higher confidence levels than those of their newly employed counterparts.

## **Health Education**

Health education can trace its history back to 1865 when it was developed at Amherst University by Dr. Edward Hitchcock; however, within the K-12 system it has only existed for approximately sixty years (Christmas & Dorman, 1996; Porter et al., 2008). In that time, it has been labeled as hygiene, health and hygiene, and the currently used health education title. Under these umbrella terms, instructors are charged with informing students about their health and ways that it can be improved using researched information. The depth of the information in these programs has varied widely throughout its existence (Sloane & Sloane, 1986; Veselak, 2001). For instance, each county has the ability to control what information they deem acceptable and

what information is unacceptable (Snyder, 2005). For example, in a conservative city like Provo, Utah, rated in 2010 as the most conservative city, and its county of Utah County, one will find that health instruction in this area strictly follows what is called *abstinence-only* education (Guttmacher Institute, 2010; M. Simon, 2010; Stryker & Bay Area Center For Voting Research, 2008). In these courses, high school students are provided with an overview of health topics, but the topic of premarital sex is forbidden. Under the abstinence label the instructors are not permitted to discuss safe sex practices or other key reproductive health issues regardless of circumstance (Guttmacher Institute, 2010; M. Simon, 2010).

On the opposite spectrum, in cities like Detroit, Michigan, rated in 2010 as the most liberal city in the United States, health instruction follows what is called comprehensive health education. In this setting, health instructors are allowed to discuss any health topic without fear of academic or social intervention (Guttmacher Institute, 2010; M. Simon, 2010; Stryker & Bay Area Center For Voting Research, 2008). While both programs have their strengths, it has been shown that students who attend schools that practice comprehensive health education courses are less likely to have an unwed teen pregnancy, more likely to use condoms during intercourse, less likely to abuse drugs and alcohol, and are less likely to become obese (National Center for Health Statistics, 2001).

While sexuality is a key component of health education courses in the K-12 system, it is far from the only topic of importance. As a nation, we have also seen a rise in illicit drug use amongst young adults and adolescences in the past five years (Centers for Disease Control, 2010a; Wright, 2007). While the above health programs are permitted to address relevant issues, there are health courses in multiple Texas counties that do not permit information on illicit drug use either. These courses practice what has come to be known as *healthy bodies and healthy*

*minds*. In these courses, issues of both sexuality and illicit drug use are not permitted as topic areas for the instructors or students (Castro, 2009; Stryker & Bay Area Center For Voting Research, 2008; The University of Texas School of Public Health at Houston, 2008). A concern with this method is that not only has it been repeatedly shown to be ineffective, but it also projects a false image of the world that lies ahead for these young men and women (Denny & Young, 2006; Elia & Eliason, 2010; Kantor, 2008). What this study will show is that instructors would benefit from learning a more comprehensive health education approach while in undergraduate programs so that, regardless of county policy, the correct information can be made available if needed. This is not to suggest that any instructor violate the education laws of their working counties, but rather to encourage these instructors to be prepared should change occur during their employment. During the process of conducting this research, dozens of counties throughout the United States have lifted the *abstinence-only* label from their health programs (Guttmacher Institute, 2010).

### **Physical Education**

According to AAHPERD, physical education has been around since the time of Socrates. While it has taken many forms, physical education has always had a focus on improving the health and motor function of its participants (Means & Nolte, 1987). Many individuals often confuse the terms physical education and physical activity; while they are similar in many aspects, the key difference is that for physical education to take place there needs to be learned individuals to disseminate information and accurately assess skills (I.S.B.E., 2010b).

Unlike health education, most every K-12 school in the nation, whether public or private, has a physical education course. It allows young men and women not only the opportunity to

participate in activities but also to develop socially (Castro, 2009). While this study is focused strictly on the relationship of physical educators and their perceived instructional confidence in health education, it should and will be stated throughout this study that one course should not exist without the other. Health professionals and scholars believe that large-scale improvements can occur with the negative health outcomes we are facing as a nation; with a reexamination of the effective interrelationship between physical education and health education these improvements can begin (Doolittle, Beale, & Demarzo, 2009; Jones, 2011; B. J. Smith, 2009).

### **Instructional Confidence**

How can instructors for one course be expected to teach two entirely different courses with little additional training? Regrettably, this is the task with which most health educators are charged. While certain states like Colorado, Minnesota, New Hampshire, Oregon, and Washington require their instructors to seek additional training beyond the state endorsement, many other states see these requirements as overkill for a course “that is often the first dropped from the curriculum” (Jones, 2011; Schulte, 2008; M. Simon, 2010; Snyder, 2005). With this study of instructor confidence levels, it is hoped to demonstrate that additional course requirements may be needed for adequate preparation of tomorrow’s health educators. It should be noted that as of January 2012, the state of Illinois, along with several other states throughout the country, will be increasing the requirements for earning the state health teaching endorsement. However, the material found in this study and future studies will still be required to better guide curricular decisions in the future and to assess the effectiveness of these proposed changes.

Along similar lines to this study, Renn (2008) found that students who were coming directly from undergraduate and graduate programs were ill prepared for work in the field of student affairs. From surveys, she also found that students believed they were learning all they would need to be successful, but upon graduation, their employers felt the students lacked skills and knowledge in key content areas (Renn & Jessup-Anger, 2008). This situation prompted the recent graduates to suggest revisions to the current curriculum to better prepare future graduates.

While her study focused on student affairs, it does dovetail nicely with this research in that current students often do not know the skills that will be required while they are still taking courses. They rely on their instructors to provide them with pertinent information in the belief that it will prepare them for all future scenarios. In Renn's (2008) case, the students were not adequately prepared to work full-time in student affairs, and the primary suggestion made from her study was that professional development should be a stronger component of the curriculum, as well as greater shadow experience within the field.

## **Research Questions and Hypotheses**

The main objective of this study was to assess the relationship between the training/preparation of physical education teachers and their perceived confidence levels in delivering health education information to high school adolescents across major topic areas established by the Illinois State Board of Education as critical content areas (I.S.B.E., 2010b).

### **Research Question 1.**

Do those pre-service or in-service instructors primarily trained in physical education feel confident in delivering health information across a broad array of topics?

### ***Research Hypothesis 1.***

H<sub>0</sub>: Those pre-service and in-service instructors trained in physical education will express inconsistent levels of confidence in delivering health information across a broad array of topics.

H<sub>a</sub>: Those pre-service and in-service instructors trained in physical education will express consistent levels of confidence in delivering health information across a broad array of topics.

### **Research Question 2.**

Is there a difference in the indicated instructional confidence levels of pre-service physical education instructors and those of in-service physical education instructors?

### ***Research Hypothesis 2.***

H<sub>0</sub>: There is no statistically significant difference between those pre-service physical education instructors and in-service physical education instructors.

H<sub>a</sub>: There is a statistically significant difference between those pre-service physical education instructors and in-service physical education instructors.

### **Research Question 3.**

Does the instructional confidence of current instructors vary depending upon their working counties' guidelines for health education? Do those who work in abstinence-only school districts report lower confidence than those who work in comprehensive health education districts? (This confidence is not from a political perspective, but rather from a knowledge retention perspective.)

### ***Research Hypothesis 3.***

H<sub>0</sub>: There is no statistically significant difference in instructional confidence between those working in abstinence-only school districts and those working in progressive or comprehensive health education districts.

H<sub>a</sub>: There is a statistically significant difference in instructional confidence between those working in abstinence-only school districts and those working in progressive or comprehensive health education districts.

## **Definition of Terms**

### *Health Education*

The Illinois State Board of Education (ISBE) defines health education as a program to aid students in achieving their fullest potential through the acquisition of knowledge and skills necessary to attain healthy levels of well-being and to maintain active lifestyles throughout their lifespan. The foundation of all health and physical education programs is the interrelationship of physical, mental, emotional, and social health and well-being (I.S.B.E., 2010b).

### *Physical Education*

In this study, following the AAHPERD guidelines, physical education (P.E.) will be defined as a course of study that promotes physical activity through activity, games, and sport.

### *Instructional Confidence*

For the purposes of this research, instructional confidence will be defined as the study participants' belief in their ability to disseminate accurate information across selected topics.

### *High School*

Defined by the National Education Commission (NEC) as those students enrolled in grade levels 9-12.

The following chapter will discuss the relevant literature on health education, physical education, current K-12 health issues, and recent studies focusing on instructor and student confidence levels. Chapter 3 will outline the methodology used in testing this study's three hypotheses, while Chapter 4 will present the analyses of the data collected from the created surveys and the answers to the research questions posed in Chapter 1. Finally, a discussion of

the findings, implications, and limitations of this study, as well as recommendations for future research, will be presented in Chapter 5.



## CHAPTER 2

Currently the literature for curriculum evaluation as it relates to student satisfaction and improvement is somewhat small, and those assessing instructional confidence are nonexistent. For additional background regarding this study, a brief history of health education and physical education in the United States will be discussed along with highlights of current areas of behavioral concern amongst adolescents and teens. Finally, close examinations of a few key studies that have helped to expand the field of curricular satisfaction and improvement will be cited. The purpose of the historical information below is to display key moments in the development of these two successful disciplines and what measures we can take today as academics to improve the health status of youths and adolescents in the United States. An additional area of importance will be a review of current literature regarding health education policies and standards and the work that has been done in the area of assessing instructor confidence.

### **Health Education**

**History.** In 1865, Dr. Edward Hitchcock Jr., generally regarded as the first campus physician, established a ‘Hygiene’ course at Amherst College (J. E. Welch, 1982). This class is known as the first recognized health education course and is believed to be the origin of all health education courses that soon followed and that still exist today. Building off of this new field, Dr. John Studwall, director of the University of Minnesota Health Service, asked twenty associates to meet in Chicago to discuss the future of health and its ties to higher education; the year was 1920 (AAHPERD & AAHE, 1985; Grosshans, 1984). To add further interest, several members of the National Collegiate Athletic Association (NCAA) were at this meeting; this is

believed to be the point where the academic link between health and physical fitness were first established (AAHPERD & AAHE, 1985; Veselak, 2001).

Following the success of these meetings, in 1922 the American Public Health Association established the Health Education Workers section (Christmas & Dorman, 1996; Veselak, 2001). Seeing this establishment, professor Thomas D. Wood, a graduate of the Columbia School of Medicine in 1891, became the first official professor of “Health Education” at the Teachers College at Columbia University in 1928 (J. Davenport, 1984). Dr. Wood is credited with creating the term “Health Education.” However, to ease curricular transition, hygiene was the more frequently used term until the early 1950s. Regardless of the nomenclature, the program was a great success, and Dr. Wood went on to publish many of the text books used by health educators from 1930-1955 (J. Davenport, 1984).

Following Dr. Wood’s work, several organizations that had previously been overlooked in the ‘health education effort’ began to gain strength. With this strength, they began to push for greater federal funding and dissemination of information amongst schools and colleagues. From this desire grew the most predominant organization in the field of health education today, known as the American Association for Health, Physical Education, Recreation, and Dance or AAHPERD (AAHPERD & AAHE, 1985). While the organization was created in late 1885, it did not grow into prominence until the late 1950s when membership more than doubled in the span of a decade. This expansion was due, in part, to federal mandates for physical, as well as health, education in all public secondary schools that received tax dollars (AAHPERD & AAHE, 1985).

From the 1950s on, health education was a prominent class in most every high school throughout the country. As the material in the course became more diverse, so did the faculty

teaching it (Means & Nolte, 1987). Initially, the school nurses primarily taught the course; however, over time and due to budgetary issues, many schools selected current faculty, or more often coaches, from the sports teams as new instructors for the course. The reason cited most often for this transition has consistently been, “the students already look up to their coaches in terms of fitness so the transition should be natural” (Kann, Brener, & Wechsler, 2007; Snyder, 2005)

In the 1960s, health education took on a new role in attempting to deal with a trio of public issues: increased drug usage, the increasing spread of sexually transmitted diseases, and the rapidly growing number unintended pregnancies. In government surveys and testing, it was found that the instructors at the time often gave out intentionally false information in response to new questions to prevent discussion (Means, 1962). This was also the time period where the idea of an ‘abstinence only’ health course began to gain favor. It was believed to be a way to possibly curtail the spread of STDs while also preventing faculty from answering or fielding questions they may be uncomfortable answering (Kantor, 2008; J. E. Simon, 1971). The latter was an academically disappointing explanation that left many students relying completely on the false information gathered from peers. This false information is now known as *social norms* or *norming*, defined as the perception an individual has of his or her peer group regardless of factual information showing anything to the contrary (The University of Virginia, 2006).

An examination of unintended pregnancies from the National Center for Health statistics shows the rates of the 1960s to be the highest in our nation’s history (Centers for Disease Control, 2010b). To curtail this, many schools attempted to be proactive and no longer allowed untrained faculty (coaches) to teach the course; unless specifically ordered by the county or school board, all health programs would discuss all risk behaviors and answer all questions with

researched and/or proven responses (Snyder, 2005; Veselak, 2001). This ushered in the era in which we are currently residing. However, as time progressed and the threat of teenage pregnancy was no longer a nationally discussed topic, more and more county boards and schools began teaching ‘abstinence only’ programs. Several counties in the most conservative states have gone on to allow only ‘healthy bodies and healthy minds’ programs which discourage questions about sexuality, as well as drug and alcohol use from being discussed in class. These programs have been proven many times over to be ineffective, but the uncomfortable topics of sexuality and drug use continue to be lightning rods for controversy (Denny & Young, 2006; Elia & Eliason, 2010; Guttmacher Institute, 2010; Kantor, 2008; M. Simon, 2010).

***Current Issues.*** Looking from 1970 to today, states are still permitted to make their own policies regarding health education. Counties and school boards have also begun exercising a new power to overrule state mandates in cases regarding physical and health education. This expansion in power came from the ‘No Child Left Behind Act’ developed by President George W. Bush. With health and physical education often combined in academia and the National Education Commission, it seemed only natural for many schools to expand the duties of the physical education instructors to also teach health. While all states do require some certification, Oregon being one of the most prominent, the majority of physical education instructors have rarely been required to seek additional training for their new roles, with several states only requiring an application for qualification endorsement (J. E. Simon, 1971; Snyder, 2005; UK College of Education, 2009).

This is where this study aims to focus. As stated in Chapter 1, how can instructors for one course be expected to teach an entirely different course with little to no additional training? Further, while all states do require some type of certification, the majority of local education

boards believe this to be excessive for a course that is not mandatory for the curriculum (Schulte, 2008; J. E. Simon, 1971; Snyder, 2005; UK College of Education, 2009). While health education is continuing to develop, it is important to understand the history of physical education and its relationship to health education.

## **Physical Education**

**History.** While this research study is not historical in nature, it is important to show the ties health education development has had alongside particular areas of physical education development. By highlighting key points in physical education's evolution, it is hoped that the reader will gain a better understanding of where change and/or reform can occur. Like the above history of health education, this is far from a comprehensive history and is merely intended to display the links that many have drawn between physical education and health education. Key moments and figures involved in the development of modern physical education are listed below. In examining the relationship between physical and health education only the recent (post-1998) history will go into any significant depth.

1820: Dr. Charles Beck began working with Friedrich Jahn. Beck is considered the first physical education teacher in the modern era, and Jahn is considered one of the founding fathers of the gymnastics movement (Cazers & Miller, 2000; B. J. Smith, 2009).

1824: Dr. Beck and Dr. Charles Follen, both of German descent and well versed in gymnastics, developed the first recognized physical education course in the United States (Cazers & Miller, 2000).

- 1837: Catherine Beecher developed one of the first iterations of a physical education or callisthenic curriculum at her all female seminary in Cincinnati, OH and Hartford, CT (Walter, 1999).
- 1850s: Diocletian (Dio) Lewis became one of the greatest physical education promoters the discipline has ever seen. In 1860 he helped to found the Boston Normal School for Physical Education. Following the success of the school, he then toured the expanding western frontier spreading the message of the benefits of physical health and by the time of his death in 1886 most every Normal School developed after the civil war was using some component of his system (Remley, 1994; Walter, 1999). Note: In the early 1900s Normal Schools were somewhat equivalent to today's community, vocational, and teachers colleges. Most became teachers' colleges when the term Normal School fell out of public favor (Thelin, 2004).
- 1885: William Anderson and top gymnastics instructors formed the (AAPE) American Association for the Advancement of Physical Education (Carpenter, 1994; B. J. Smith, 2009).
- 1900s: AAPE went through many iterations and additions as the NEA continued to add health related programs to the discipline of health (B. J. Smith, 2009).
- 1917: The United States entered World War I and was immediately aware of the poor physical condition of the recruits. One in three soldiers were marked as not being physically suitable for combat (Barrow & Brown, 1988).
- 1919: Following the close of the war, the U.S. Government passed legislation mandating all publicly funded schools have some form of physical education every day, this included recess (Barrow & Brown, 1988; P. D. Welch, 1996).

- 1929: With the dramatic fall of the stock market, the United States entered the Great Depression and all extracurricular programs from schools started to be cut, including but not limited to physical education (P. D. Welch, 1996).
- 1941: The United States entered World War II, however, due to two decades of decadence and poverty following the last Great War, the U.S. once again found itself to be in horrible physical condition compared with European counterparts. This time one half (50%) of all enlisted men were marked as not being physically suitable for combat (Rice, Hutchinson, & Lee, 1958).
- 1945: Once again the United States passed legislation specifically stating that all publicly funded secondary schools have dedicated physical education periods. One major contributor to that legislation was Dr. Thomas Cureton from the University of Illinois at UrbanaChampaign (Berryman, 1996; Rice et al., 1958).
- 1950s: Dr. Cureton's work in the 1940s, 50s, and 60s revolutionized the field of physical education throughout the world. With his and others efforts, physical education became recognized as a respected scientific discipline and no longer simply an extension of gymnastics and games (B. J. Smith, 2009).
- 1950s: A boom occurred in the number of health organizations being created. One of the most prominent groups to develop from this era was the American College of Sports Medicine (ACSM) (Berryman, 1995). The ACSM has since has become one of the most respected scientifically based organizations for their embrace and development of exercise and fitness strategies for the U.S. population (Berryman, 1995).
- 1956: President Eisenhower developed the *President's Council on Youth Fitness* (PCYF) (PCPFS, 2011).

- 1960: President John F. Kennedy strengthened the goal of the PCYF and renamed the group the *President's Council on Physical Fitness* (PCPF), so that all Americans knew they are responsible for their own fitness levels (PCPFS, 2011). Further, Pres. Kennedy challenged the American people to become more fit in a pair of articles published in *Sports Illustrated* magazine (Kennedy, 1960, 1962). Both articles accused young Americans as being out of shape and lazy.
- 1970s: Physical fitness and exercise were no longer strictly viewed as work, but now were being seen as forms of recreation and personal development (K. Moore, 1978). This trend continued well into the 1980s.
- 1980: The original fitness education organization officially changed its name to the current American Alliance for Health, Physical Education, Recreation, and Dance or AAHPERD (English & Davenport, 1992).
- 1980s: Physical education instructors began filling the void left by school nurses and assumed larger roles within health education classrooms left void by the school nurses (Manross, 2009; PE Central, 2009).
- 1990: The field of Kinesiology was better defined so that universities could continue to teach aspects of physical education that did not fall under the traditional education field.
- 1992: National Association for Sport and Physical Education (NASPE), a branch of AAHPERD, requested national standards be placed on physical education to better understand what students were doing and what they should be capable of doing. With the Department of Education's support, the NASPE developed their own voluntary standards that most schools look towards for guidance today (NASPE, 2010).



2000s: Currently physical education is under attack in much the same way as other humanities (attack meaning amongst the first to be cut for budgetary or academic inadequacies). When President George W. Bush passed the 'No Child Left Behind Act,' it placed greater pressure on teachers and administrators to achieve high academic achievement scores. With 'No Child Left Behind,' it also allowed for counties to decide individually if they felt that physical education, the arts, and several other 'non-core' courses should be dropped in place of more study time or extended hours of math, science, and English (Hess, 2008; McCluskey, 2007). At the time of this writing, President Barack Obama has made great efforts to remove many of the problems with the 'No Child Left Behind Bill'; however, there are still many counties unwilling to readopt physical and health education for fear that the students will fall back into old patterns of poor achievement (Castro, 2009; Hess, 2008).

### **Current K-12 Health Issues**

Health instructors at all levels are bombarded by more and more questions from students who no longer collect their general information from peers, but rather from watching television and searching the internet. The questions and knowledge demand for K-12 health instructors is at an all-time high, while requirements and standards to teach health have remained the same for nearly fifty years (Kann et al., 2007). Earlier studies have shown that instructors would cover poor training and knowledge by saying; "you don't need to worry about that," or "I'm not sure, but it won't be on the test." Students are entering higher education and society with more misinformation than at any other time in our history (Centers for Disease Control, 2009; Snyder,

2005). If students do not get the correct information in the classroom, then they look to television or the internet for answers.

According to the CDC Youth Risk Behavior Surveillance Survey (YRBSS), students are engaging in more risky behaviors while also believing that their actions will have little to no consequence (National Center for Health Statistics, 2001). As noted earlier, this model for action and knowledge is known as *social norming*, and by continuing to use outdated health standards and poorly trained health educators, the United States is suffering (Centers for Disease Control, 2010c; Sing The Body Electric, 2009; The University of Virginia, 2006). The concept of social norming can be further explained as an individual believing one issue to be true based on their peers or the media while statistics and research show different results. In this example, risky behaviors have potentially serious consequences, but amongst most high school aged individuals, they believed the threats associated with drinking, drug-use, and unprotected sex were negligible (Centers for Disease Control, 2010c).

To further compound the problem, we are currently going through the largest epidemic in obesity that any nation has ever faced, in conjunction with seeing the prevalence of sexually transmitted infections and unwanted pregnancies on the rise from previous decades (Centers for Disease Control, 2010c). In the past 20 years, the percentage of overweight children has more than doubled from 7% in 1980 to 18.8% in 2006. In the state of Illinois alone the estimated costs directed toward obesity-related healthcare is more than \$3.5 Billion (Klein & Jain, 2007). In addition, the NIH reports that the United States has greater than half of all pregnancies being unintended and when paired with the CDC's finding of increased illicit drug use, you can see the potential for serious problems in our future (Klein & Jain, 2007; Miech et al., 2006). While all of these issues are complex, many of them can show links to poor health education in the K-12

system (Castro, 2009; National Center for Health Statistics, 2001; PCPFS, 2011). Multiple studies have shown that if individuals are given accurate health information the number and frequency of risky behaviors decreases dramatically (Centers for Disease Control, 2009).

**Adolescent Obesity Epidemic.** While it has been recently published that the adolescent obesity rate had hit a plateau from 1999-2009 several prominent researchers contend that greater than 30% of American school children remain overweight (Ogden, Carroll, & Flegal, 2008). While the CDC was unable to link these recent findings with any recent action it is well-known that childhood and adolescent overweight and obesity is an epidemic throughout the industrialized world (Hills, King, & Armstrong, 2007; Nemet et al., 2005; Ogden et al., 2008; Rodriguez & Moreno, 2006). What may not be as well-known is how rapidly the rates were increasing. In the past 20 years the percentage of overweight children has more than doubled. The Centers for Disease Control and Prevention estimate that one in three children born in 2000 ultimately will develop diabetes because of eating too much and not exercising enough (Center for Chronic Disease Prevention, 2003). These are staggering statistics, which have been linked to almost every facet of an adolescent's life; their diets, their genetics, their environment, their activity levels, and their schools. All have been accused and all have been addressed in multiple studies to try and determine why this increase is present and what we can do to reverse this disturbing trend.

With this increase in overweight and obesity come the health risks that are associated with being unhealthy. These children are now at risk for cardiovascular disease, high blood pressure, and type II diabetes; a disease that was once reserved for middle-aged adults with poor lifestyle habits (Cawley, Meyerhoefer, & Newhousec, 2007; Vieweg, Johnston, Lanier, Fernandez, & Pandurangi, 2007). To be considered overweight an individual must have a BMI

(Body Mass Index) greater than the 95<sup>th</sup> percentile of that age group and typically that number, regardless of age, is > 25. However, we are seeing an increasing number of middle and high school students who have BMI's greater than 30 which put them into the category of obese or approximately 30 lbs. heavier than what is appropriate for their height and age (Cawley et al., 2007; Haworth, Butcher, Docherty, Wardle, & Plomin, 2008; Kubik, Story, & Rieland, 2007; Ogden et al., 2008; Roseman, Yeung, & Nickelsen, 2007).

At this point, it is appropriate to address whether or not an adolescent can truly be considered obese. According to the CDC, one who is obese has a disease and their life at risk, conversely the term is tied directly to the BMI results discussed above, if an adolescent has a BMI of greater than 30 they are considered overweight/obese (Datar & Sturm, 2006). While their life may not be in immediate jeopardy, the likelihood of the child acquiring the chronic illnesses associated with being overweight go up exponentially every year their BMI remains above 25 (Datar & Sturm, 2006). It should also be noted that the term obese does alter slightly when discussing adolescents (10-17 y/o) and young adults (18-25 y/o) versus adults (26-64 y/o). While adolescents are not likely to die as an immediate result of their condition, they are becoming more susceptible to all of the illness' that were previously held for obese adults later in life.

With the title of obese comes a significant likelihood of many of the lifestyle diseases mentioned above. What has changed in children's lives to cause such a drastic shift in such a short period? As stated there are many reasons why children and adolescents are becoming obese. The area of most interest for this study is health education and the potential it has to change lifestyle habits and changes in diet. Between 1980 and today two physical aspects of a student's life are rapidly changing the number of hours of physical activity and the number of

programs available at the school itself. (C. Davenport & Brown, 2009; Hanson & Chen, 2007; Hills et al., 2007; Sherwood-Puzzello, Miller, Lohrmann, & Gregory, 2007). Many of the largest developments in the United States since the 1980s are in the field of technology. Since the 1980s there has been an explosion the amount of technology that all require the user to remain sedentary for use. Videogames, computers, and television have all contributed significantly to the obesity epidemic we are facing as a nation (Hills et al., 2007; L. F. Wilson, 2007)

Sedentary lifestyle behaviors have increased drastically during the past 30 years. With more and more people relying so heavily on technology, fewer and fewer parents and adolescents are taking the time to exercise and eat properly. Even individuals who do eat properly rarely attain the recommend amount of exercise to burn off the excess calories acquired throughout the day (Roemmich, Epstein, Raja, & Yin, 2007; Singh et al., 2006). In looking at videogames and television, tremendous strides have been made technologically that allow for an individual to remain stationary and still feel like they are being productive and active (Caroli, Argentieri, Cardone, & Masi, 2004; Goldfield et al., 2007; Kumanyika & Grier, 2006). Many studies have shown that television stations and advertisements geared towards adolescents and young adults promote unhealthy food, most predominantly fast food ads, which run consistently throughout programming geared towards these age groups (Buijzen, Schuurman, & Bomhof, 2008; Warren, Wicks, Wicks, Fosu, & Chung, 2007). With video games, the problem is not the advertising, but the amount of time spent playing them (L. F. Wilson, 2007). In a survey conducted by Wilson (2007), “children and adolescents were willing to exercise more, to change eating habits to include more fruits and vegetables, drink more water, and eat less junk food. However, they stated they are not willing to give up soda, video/computer games, and watching television to improve their health” (L. F. Wilson, 2007).

This presents a sizable problem; while children claim they are willing to modify their diets and their activity levels, they are not willing to remove the items that are believed to be the root causes of the harm. It is with these thoughts in mind that an improved health education system is being proposed, not only to shift children's thinking in regards to soda, videogames, and television, but also to address the extended needs of adolescents who are showing increased levels of illicit drug use and unsafe sex practices (Centers for Disease Control, 2009; Control, 2007; B. Hamilton, Martin, & Ventura, 2009).

The problem of a sedentary lifestyle comes with its own hazards, but as studies have shown most children and adolescents are eating more poorly than any other time in our nation's history (Connelly, Uaso, & Butler, 2007; Davis, Curtis, Tweed, & Patte, 2007; Goldfield et al., 2007; Hills et al., 2007). The American Dietetic Association has found that the diet of an adolescent in the 1950s was better than an educated adult's is today (Casey, Szeto, Lensing, Bogle, & Weber, 2001; Roseman et al., 2007; van der Horst et al., 2007). Before 1950, there were more stay at home parents and more home-cooked meals, and fast food was not nearly as convenient then as it is now (Kumanyika & Grier, 2006; Roseman et al., 2007). Further, stay-at-home parents' children were encouraged to "play outside" and participate in more after school programs. While it has been shown that adolescents and young adults were not eating substantially healthier than they are now, their activity levels were significantly higher than today and often high enough to burn off any of the excess calories consumed (Roseman et al., 2007).

Today children typically have two working parents, which leaves after school snacking decisions up to them and, depending on age, possibly dinner. Parents with high workloads rarely cook meals from scratch with fresh ingredients (Probart, McDonnell, Weirich, Birkenshaw, &

Fekete, 2007; Roseman et al., 2007; van der Horst et al., 2007). It is quicker and easier to go down to the market for a frozen meal or go out for fast food than to stay at home and cook (Roseman et al., 2007). The two biggest dietary changes appear to have occurred during the 1980s; increased caloric intake from convenience food and take out and a substantial increase in the amount of soft drinks consumed. The 1980s saw a dramatic increase in mothers moving into the workplace; nearly every home had a refrigerator and a freezer, and more and more homes were purchasing microwaves. Not surprisingly, the percentage of children who regularly drank soft drinks went from an insignificant 11% in the 1950s to over 90% in 1992 (Meals Matter, 2008; PCPFS, 2011; Roseman et al., 2007; L. F. Wilson, 2007). Aside from working parents, what else could cause such a dramatic shift?

The evolution of genetic obesity has not been as thoroughly researched as dietary alterations, but that certainly does not make it any less of a possible issue. While it is highly unlikely that genetics is entirely to blame for the doubling of adolescent overweight and obesity, it is important to consider the condition of the parental influence prior to birth (Alio et al., 2006; Haworth et al., 2008; Wardle, Carnell, Haworth, & Plomin, 2008). Several studies throughout Europe have been unable to make a direct genetic link between parental obesity and adolescent obesity (Haworth et al., 2008). However, there have been studies that have shown a possible tie between the parents' health behaviors and their children's health behaviors. While it may not necessarily be conclusive genetic proof, it does demonstrate that parents with poor health habits prior to having children have a higher probability of having an overweight or obese child (Alio et al., 2006; Peterson, 2005). It is in this area where better prepared educators and a reformed health education system could make a significant impact. For instance, a child who has poor physical role models at home would still be able to learn about health, exercise, and dietary

habits that are possible regardless of location. Further, if the health program in use is truly comprehensive, then the schools' food offerings would likely be addressed by the health instructor and converted to healthier alternatives (Boehmer, Brownson, Haire-Joshu, & Dreisinger, 2007; Doolittle et al., 2009; Porter et al., 2008).

The environments that have been the most accepting of change are middle and high schools. While the rates of overweight and obese adolescents are certainly on the incline, it is believed that through improved health education programs and after school functions that all schools can successfully combat this problem (Osganian, Parcel, & Stone, 2003). This is where an instructor's background in physical education could be a tremendous asset as a health educator. They would have the training and capacity to develop after school programs that not only engage the children mentally, but also physically. Children and adolescents are highly impressionable, and since the majority of their days are spent in school with peers and teachers, it seems to be a natural place for sizable change to occur (Centers for Disease Control, 2007; Lytle, Ward, Nader, Pedersen, & Williston, 2003; Osganian et al., 2003; Parcel et al., 2003). While the obesity epidemic cannot be fixed in the short-term, it is believed that by using the CDC's coordinated school health program standards, schools can have a significant impact on the lives of children now and even more so in the future. The CDC's recommended modifications are predominantly minor, especially if all school employees embrace the healthy practices; however, it will be discussed later in this chapter how easily these program modifications can become problematic if the right individuals are not in support of such a change (American Heart Association, 2006; Doolittle et al., 2009; Warwick & Illinois Natural History Survey, 2007).



**Increased STD Incidence and the Rise in Teen Pregnancy.** Another issue in the adolescent population is the rise in STDs and teen pregnancies. Again, as stated in Chapter 1, the YRBSS has shown that students, through the concept of social norming, believe the numbers or rates are far lower than the actual number of cases (Centers for Disease Control, 2010c). This finding again shows strong ties to education; students believe that these issues are minor when in fact they are affecting more and more children and adolescents each year. If adolescent health issues were simply limited to overeating and under exertion, the issue of health instructor confidence would be a purely academic exercise. However, students 10 to 17 years of age are being exposed to more and more negative health behaviors for their peers and through the media. In earlier research associated with Sarah Bush Lincoln Health Center, it was found that the number of unwed teen pregnancies are on the rise not only in Illinois, but throughout the United States (Centers for Disease Control, 2010b; Sing The Body Electric, 2009).

For this current issue, it is best to look into how institutions have addressed and adapted to changes in sexual behavior of American citizens. This portion of the paper will address key changes that occurred following WWI and the increased involvement of the federal government and the American Medical Association to curb the spread of venereal diseases. The latter section will address current issues and beliefs on teen pregnancies; while the number is as high as it has been since the 1960s, no interventions of a similar scale have taken place (National Center for Health Statistics, 2001).

***Nation's response to sexual education following WWI.*** This section will provide a brief historical overview of our nation's battles with venereal disease and the growing relationship between health education and the federal government to combat the problem. The purpose of this chronology is to demonstrate that when we as a nation are motivated to put an end to an

epidemic as a collective, in this case VD and syphilis in the late 1940s, we have the power to come together and all but eradicate the disease within a decade.

Throughout the early 1900s, most health education courses that addressed matters of sexuality were only found in colleges and universities, with the majority of those courses taught by physicians. In these early stages, physicians teaching the course would present the material they felt was the most relevant, but there was no attempt to create a national standard or for the AMA to emphasize any particular issue over another. Similar to health education's alignment to medicine, this changed with World War I. Instructors were now encouraged, by the AMA and the federal government, to educate current and incoming students on the methods of preventing venereal diseases (Hood, 1981; U. S. Army Medical Office, 2009).

The issue of GIs returning with venereal diseases was a huge public health concern at the time, as it was found that of the 3.5 million soldiers reporting to the sick bay, greater than 10% of them were there for venereal disease treatment, 383,706 respectively (U. S. Army Medical Office, 2009). With this sizable portion of inactive soldiers returning home, the federal government, in conjunction with the AMA, developed an initiative to educate larger numbers of college-aged students (U. S. Army Medical Office, 2009; Wake, 2007).

Following the Great War's end in 1918, it was quite apparent that while the topic was still very much taboo in social settings, venereal disease was becoming a huge problem, and that regardless of public opinion, it needed to be addressed. Through an examination of period materials and cartoons, it was also apparent that the United States Military did not think highly of 'civil authorities' and their control of the issue; attacks were primarily directed towards public health officials and not at the few health education courses found in colleges of the time. (Oberteuffer, 1938). Regardless, during the war, many high-ranking military officials' created

their own health and hygiene programs with varying degrees of success, but all agreed that something had to be done.

The military programs were very similar to those being taught in colleges and universities. With this growing base of health knowledge and the end of the war, the federal government asked physicians, public health officials, and military officers to convene and establish the best way to rein in this problem (U. S. Army Medical Office, 2009). What they created was a stronger morality-based program that would hopefully eliminate the relaxed standards that many young men and women felt during peacetime. The second aspect of the program was that the material needed to reach a greater audience than just those on college campus' or military bases (Oberteuffer, 1938; U. S. Army Medical Office, 2009; Veselak, 2001).

Following the conclusion of the multidisciplinary meeting in 1920, the federal government increased health education funding nearly 200% in an attempt to prevent such a large number of soldiers from being affected by a singular issue (U. S. Army Medical Office, 2009; Wake, 2007). While little of this money benefited collegiate courses, it did raise awareness that these courses did exist and that they were all working towards the same goal, creating a healthier America. Following the propaganda and the post-war effort to stop the spread of VD, many if not all colleges moved the "health and hygiene" courses away from the medical school and onto the main campus where every student could have access (Oberteuffer, 1938; Veselak, 2001). While a tremendous step forward in terms of curricula consistency, it would take another world war to create a uniform goal and set of standards that would reach down to the K-12 ranks.

While the nation began to recover, 'health and hygiene' courses became the norm on many college campuses in the same way one would view mathematics or English. While

'hygiene' or health was not always a required course, it was certainly gaining prominence as university administrators still felt the communities' desire to rid themselves of VD and other easily communicable diseases (Bruess, 2003; Veselak, 2001). The national standards for this post-WWI era were to give out basic sexual health information, under the guise of reproductive education, and to strongly encourage morality, marriage, and family. These early standards were strikingly similar to today's abstinence only programs except without the emphasis on religious consequences, but still focusing on 'scare tactics' (Kantor, 2008; Oberteuffer, 1938).

*The development of the case-finder system and WWII.* Following WWI, the roaring twenties and the Great Depression of the thirties provided a plateau on which science could catch up with the students' desire to learn more. Regrettably, with the nation in the throes of the Great Depression during the 1930s, interest in 'health and hygiene' became almost non-existent, unless speaking in terms of the infected seeking treatment (Veselak, 2001). Up until 1940, health education courses were still very much reactive in nature to the growing number of individuals infected with STD's and other commonly communicable diseases (e.g. Influenza) (Becker et al., 2008; Christmas & Dorman, 1996). The critical point was to have these courses become proactive in anticipating the problems that might lay ahead in the future.

With the VD outbreaks of WWI relatively under control, instructors were once again able to look to the AMA and APHA for new findings they could add to their courses (Becker et al., 2008). However, during this period, the nation's young men and women were once again forced into war and once again STDs were an important issue both here and abroad (Christmas & Dorman, 1996). Had health education failed again? To a point, yes, it did fail. As has been shown in multiple health education studies, when one provides a population information, but bases that information off of a medium that is not necessarily what one is working to correct, in

this case only speaking of VD and Syphilis in the context of marriage and reproduction, one unwittingly makes individuals assume they are part of some special population if they are not affected, in this case single men and women who were not in monogamous relationships (Kantor, 2008; Kirby, 2007; National Center for Health Statistics, 2001). Due to this pedagogical error, the number of STD cases was worse than it was during WWI, and due to matters outside of the focus of this paper, the AMA and APHA were no longer working together (Means, 1962, 1964).

As during WWI, military leaders believed that civil leaders had failed to keep America's youth healthy and informed (Seligman & Fowler, 2011; U. S. Army Medical Office, 2009). That stated, the military once again created their own hygiene clinics and education courses; however, this time they did recognize the similarities between their goals and the collegiate courses, and they enlisted physicians and professors of health from around the nation to visit bases and training camps (Becker et al., 2008; Means, 1964). This action resulted in a much more organized effort that by public health standards was far more effective than previous attempts. Not only did health education become a mandatory course for GIs in college and ROTC programs, but it also became mandatory on every military base from California to Rhode Island. With this mass exposure to health education and the assistance of local public health departments, the two would be forever linked as joint entities (AAHE, 1982; Hood, 1981; U. S. Army Medical Office, 2009). However, with this partnership came greater responsibility.

The federal government was growing increasingly aware of the amount of young men enrolled in the armed forces who had to be removed from duty due to VD. To remedy this issue, for what they believed to be forever, the federal government poured huge sums of money into public health (AAHE, 1982; AAHPERD & AAHE, 1985; Christmas & Dorman, 1996; Seligman & Fowler, 2011; U. S. Army Medical Office, 2009; Veselak, 2001). To provide prospective, by

federal allocation in 1939 public health offices garnered approximately \$3 million dollars from the federal government. By 1947, at the peak of concern, the federal government was giving approximately \$17 million dollars annually, nearly six times the amount from the previous decade with the stipulation that the majority go towards education regarding STDs (Edwards, 1981).

With this influx of money, higher education courses and public health worked together to establish the best means for preventing further spread and developing a methodology for actually tracking the most problematic STDs. From this joint effort, the Case-Finder System was developed (AAHE, 1982). Using this new system, public health officials demanded screenings and blood tests at every information exchange, primarily employment. With this constant reporting and updating of health files, health educators, epidemiologists, and public health officials were able to nearly eradicate all cases of syphilis in the United States in just under a decade. Based on this rapid solution, the public's trust in public health and health education regarding sexuality began to strengthen (Veselak, 2001).

Spurred by the success of the Case-Finder program and a call for more nurses and educators, health programs around the nation began to boom. New information regarding health and wellness was being published at an amazing rate, and financial support was at its highest point in history (Edwards, 1981; Means & Nolte, 1987). With increased funding and growing public support, the health education curricula underwent a major revision. While the scientific community continued to grow and find new methods of maximizing one's health and life, most health course were still predominantly focused on STD prevention and encouraging students to embrace moral standards (Hood, 1981; U. S. Army Medical Office, 2009). In addition, by this time health education was not only a part of higher education, but it was becoming very common

in secondary schools throughout the United States (Manross, 2009; PCPFS, 2011). There were even a small number of health education programs in middle and primary schools during this time. While the subject matter varied greatly, based on research it appears the 1950s were most expansive time for health education in our nation's history (AAHPERD & AAHE, 1985; Stern, 1999; Strong, 1981; Veselak, 2001).

To combat lethargy in the discussions and presentations, health education took on a much more comprehensive approach. Human reproduction and disease prevention would still be the dominant topics, but they would also grow to include fitness and exercise, drivers' education, proper nutrition, and even basic cleanliness (soap, shampoo, etc.) (Becker et al., 2008; Sloane & Sloane, 1986). While the collegiate level courses were still taught predominantly by professors and physicians, the secondary schools and middle schools were now typically being taught jointly by nurses and physical education instructors (J. E. Simon, 1971; Veselak, 2001).

***Baby boomers and the modern curriculum.*** Following the end of World War II, in 1948, the nation saw a spike in pregnancies and births like it had never seen before. This generation has come to be known as the 'Baby Boomer' generation. While many see this as somewhat of a black eye in terms of health education's effectiveness, in examining the data one can also see a record number of marriages during the same time period (R. A. Smith, 1981). While it is difficult to say which occurred first, it was a sign that American values were beginning to shift towards family. Nonetheless, federal mandates continued that all schools working from tax dollars must teach health education, physical education, or some combination of both. The curriculum emphasis this decade being again on family values and morality (AAHE, 2001; Nolte & Brannan, 1979).

Throughout the 1950s the public's attitudes towards health did not wane, but the continued focus on STDs and reproduction began to quickly fall out of favor. In fact, with the increase of conservatively-minded parents, a great deal of the information regarding procreation and venereal diseases was decreased dramatically or removed entirely from the curriculum (Means & Nolte, 1987). Some sources have claimed that the nation was once again falling back into bad habits; however, in truth the levels of STDs were down drastically from the decade prior. At the same time, it was becoming a somewhat unmentionable topic, even in a collegiate setting (C. Davenport & Brown, 2009; National Center for Health Statistics, 2001).

As the 1950s ended, the American education landscape was becoming more diversified and enrollment in secondary schools began to grow larger and larger. Health education remained the same during this decade; the curriculum had finally found the formula for what many professionals believed to be success. With a curriculum focused on topics that society deemed important, the programs were able to remain relevant regardless of the level at which they were being taught (AAHE, 1982; Grosshans, 1984).

Throughout the 1960s and 1970s, a huge change would sweep through the United States and affect most every secondary and higher education student. On May 11, 1960, G.D. Searle and Company obtained FDA approval to sell a long-term use birth control pill in the United States. "The Pill" was initially marketed towards married couples who had been practicing the rhythm method; however, the idea was that the pill, when used along with the rhythm method, much more predictable and safe. Searle and Co. were also able to state that the pill was "over 90% effective in preventing unwanted pregnancy" (Gordon, 2007).

Based on advertisements and word of mouth, the Pill began being used by unmarried individuals in their early twenties and thirties. This created some public unrest that resulted in



two Supreme Court cases identifying the drug as legal for use by unmarried couples and single women out of wedlock (Gordon, 2007). The Pill ushered in a revolution in sexuality for many individuals. Prior to its creation, the responsibility for birth control was a joint effort, and as is often the case even today, women were much more proactive about it than men. By using the pill, couples felt they no longer needed to purchase diaphragms, condoms, or any other birth control devices. What many individuals failed to realize was that even if pregnancy was no longer a concern, the spread of STDs was still a very relevant issue (Gordon, 2007).

Leaping forward to today, health education on many levels has regressed to the messages of the late 1940s and early 50s when only speaking of contraception under the guise of marriage (Elia & Eliason, 2010; Kantor, 2008; Kirby, 2007). Depending on the state, counties still have the ability to control what information they will allow and what information they will not allow in health education courses. In a later portion of this literature review, *Federal, State, & Local Standards*, each state's regulations regarding health education and sexual education will be displayed. Some of the biggest adolescent problems we face as a nation are the recent rise in STD rates and the rise in teenage pregnancy (Centers for Disease Control, 2009). According to the CDC, the rates of teen pregnancy have gone up every year since 2005, sometimes jumping by as much as 5% in certain years (Centers for Disease Control, 2010b; B. Hamilton et al., 2009). In addition, the rates of 15-24 year olds testing positive for an STD has increased every year since 2000. The STD showing the most rapid growth over the past decade has been syphilis (Centers for Disease Control, 2010b). For those readers not familiar with this particular disease, it is one of the more severe sexually transmitted diseases and if left untreated or undiagnosed, it can lead to severe impairment of the brain, cardiovascular, and reproductive systems. It is also one of the key precursors to HIV infection (Sapatkin, 2011). Individuals testing positive for

syphilis are two to three times more likely to contract HIV in the five years following treatment. The city of Philadelphia alone has seen a rise in STDs affecting teens and young adults by 30%, with syphilis rising nearly 45% in the past year (Sapatkin, 2011).

The CDC believes the following causes are responsible for this increase: (1) being sexually active at younger ages, (2) lack of access to or poor use of contraception, (3) living in poverty, (4) having parents with low levels of education, (5) poor education regarding sexual health, (6) and growing up in a single-parent family (Centers for Disease Control, 2010b). All of these are certainly risk factors for STDs and teenage pregnancy, but the two that are the most salient to this paper are those addressing the parents' education and their child's education level. If comprehensive, uniform health education curricula were taught at every level of public school in the United States, the number of teen pregnancies would go down (Centers for Disease Control, 2010b; Guttmacher Institute, 2010; B. Hamilton et al., 2009; Kantor, 2008; Kirby, 2007; National Center for Health Statistics, 2001).

So many adolescents and young adults are becoming infected with STDs or becoming pregnant unintentionally, and this behavior comes with many hazards. The risk factors associated with consistent STD infection and unintentional pregnancy are numerous and include, but are not limited to, young women's absence from school and the risk of reproductive tract damage. As found in the 2010 BRFSS, these women's projected success rates in terms of SES are also abysmal, with the gross majority of teen mothers joining Medicaid within six months following the birth of the child (Castro, 2009; Centers for Disease Control, 2009; Denny & Young, 2006; Gordon, 2007; Hood, 1981; Kantor, 2008; Kirby, 2007). These outcomes are a further reason for us to come together again as a nation to address this issue.

Students today engage in sexual experimentation at younger and younger ages. In the 1980s the average age for experimentation was 15-16 years old (Centers for Disease Control, 2009, 2010c). Today the average is approximately 13 years of age (Centers for Disease Control, 2009, 2010c). The students of today's health classes need to be better informed about the consequences of their choices and what they can and should do to protect themselves should they continue to pursue these interests. What is often believed to be the solution, *abstinence-only programs*, have shown to have the opposite effect and typically result in worse success rates than no sexual education at all (Denny & Young, 2006; Elia & Eliason, 2010; Gusrang & Cheng; Guttmacher Institute, 2010; Kantor, 2008; Kirby, 2007; National Center for Health Statistics, 2001). As a nation, we are falling back into the same problems that cost us hundreds of thousands of active soldiers. Many states are requiring all messages of safe sex be placed under the guise of sex only occurring in marriage, which is clearly not the case for the pre-teen children who are experimenting. In studies examining comprehensive health and sexual education, the numbers of teen pregnancies and STD outbreaks are significantly lower than in those states who only allow abstinence only curricula (Kirby, 2007). The next major portion of this paper will go into greater detail regarding the success and failure of each state system, but the following section details why the rise in illicit drug use may be the most concerning of the risk behaviors.

**Adolescent Illicit Drug Use.** Drug use in the United States amongst individuals under the age of 18 has only become a relevant issue in the past sixty years. Prior to 1950, the largest drug issue faced by youth was alcohol abuse. While this problem is still a very relevant drug discussion today, this section will discuss the changes in society from the 1960s through today regarding illegal drugs and what health education has done and can do to improve the health status of K-12 students.

In an examination of the literature many educators have been encouraged by the results, “drug use continues to fall in United States” with the “lowest usage rates in nearly a decade” (Rosenbaum, 2007, p. 815). What these headlines fail to point out is that these statements are coming from composite studies where individuals of all ages are included. In examining the CDC/NIH YRBSS research, one will see that while the number of adolescents and teens using drugs has remained consistent over the past three years, the number listed as newly using is on the rise (Centers for Disease Control, 2010a)

The CDC risk factors for drug usage are very similar to the risky sexual behavior recommendations. The most common reasons cited on the 2009 survey were perceived risk, perceived social approval, comments from peers, and perceived availability. All of these traits can most certainly be linked to the idea of social norming and poor health education. While the numbers of adolescents involved are not nearly as high as the numbers associated with STDs or teen pregnancies, it is still considered extremely dangerous behavior with the potential for high costs both personally and socially (Wright, 2007).

In an effort to combat illicit drug use, one of the federally funded programs created specifically to curb social norming has been the D.A.R.E. program or Drug Abuse Resistance Education. This program, while designed by high level government officials and academic agencies, has never generated the positive results expected since its inception in 1983 (D.A.R.E., 2001; Rosenbaum, 2007). While the program was believed to be well designed and implemented, the one critical issue that has never been addressed is the background education of the individuals providing the information and the lack of curricular revision in its twenty years of use. In greater than 95% of D.A.R.E. programs, the information is provided by a member of local law enforcement (Rosenbaum, 2007). Similar to early issues cited within health education,

this individual someone whom society believes to have the needed background to teach the material, but in academic terms they are ill prepared, and the results speak to that inadequacy (D.A.R.E., 2001; Rosenbaum, 2007). Below is just a brief summary of the issues associated with the D.A.R.E. program and their education efforts to curb drug use in adolescents and teens.

1992: Indiana University conducted a statewide study of drug education effectiveness and found that those students who only were exposed to the D.A.R.E. program were shown to have significantly higher rates of hallucinogenic drug use than their peers who were exposed to comprehensive health and drug education (Rosenbaum, 2007).

1994: The National Institute of Justice published a report further outlining the ineffectiveness of the instructors and the curriculum. Prior to publication in the *Los Angeles Times* and the *AJPH*, the then director of publishing for the *American Journal of Public Health*, Dennis Cauchon, was sent identical threatening letters strongly encouraging him and the journal not to publish any negative findings regarding D.A.R.E. (D. Hamilton, 1997).

1995-2005: Over this time span the following organizations either discredited or demonstrated that D.A.R.E. programs and the drug curricula they provided to K-12 schools was ineffective and in many cases had the opposite effect: the California Department of Education, Indiana Department of Education, University of Maryland, and the American Psychological Association, just to name a few (D.A.R.E., 2001; Rosenbaum, 2007).

2007: The Association for Psychological Science moved the D.A.R.E. program and its curriculum into the list of treatments that have the potential to cause harm (Lilienfeld, 2007).

Therefore, the next question to ask is why this program would be allowed to continue without revision. Confusingly, there is little to no literature explaining this anomaly. What is

also confusing is that the majority of positive information being published is from the D.A.R.E. program itself. The program is allowed to conduct and publish its own research, and the organization has published such tremendous success rates that it is now being taught in over 40 countries (D.A.R.E., 2001; D. Hamilton, 1997; Rosenbaum, 2007). What is also unusual is that when one makes attempts to determine where the data is being sampled and what methodologies were used in testing, the program and the data have no references. While D.A.R.E. is not an official course curriculum recognized by the NEA or affiliated with the federal government, greater than 80% of the publicly funded schools that utilize this program also carry its curriculum into their actual health education courses (Rosenbaum, 2007). This arrangement also presents an additional issue in that all programs are taught by a local law-enforcement agent. The instructors for most K-12 health courses have only had the most basic training in drug prevention education, so they are likely unable to recognize material or strategies used by D.A.R.E. that may be ineffective or even harmful for certain age groups. As one author stated in his study, “the days of Nancy Regan’s ‘Just Say No’ campaign are long behind us and are only shown to be effective for children under 5 years of age” (Rosenbaum, 2007).

Much like the curricula used to address sexual health, many schools have simply thrown up their hands in defeat at the problematic curriculum and training levels of instructors (Rosenbaum, 2007; Wright, 2007). Public schools are often underfunded and do not feel that there is an effective way to precipitate change (National Center for Health Statistics, 2001; Wright, 2007). Also, we should not forget that the D.A.R.E. program has become extremely defensive when under fire (D. Hamilton, 1997). One potential solution could be made by altering the collegiate curriculum so that graduates of both health education and physical education, at the very least, receive one semester of comprehensive drug prevention education.

This course would allow them to be better equipped to develop their own curriculums without affecting the funding of the school district.

This approach is a similar concept to the one referenced above for improving sexual health education. By exposing undergraduates to a more comprehensive curriculum, we will empower them to make critical decisions in the field, which will enable them to better address the most urgent health needs of the communities in which they are working (Centers for Disease Control, 2010a; Snyder, 2005). Health education instructors typically come from one of two backgrounds, either health education or physical education, and as public school budgets continue to shrink, the need for more advanced and comprehensive education at the undergraduate level continues to rise. What needs to be examined is what those undergraduates believe to be the market they are moving into and how prepared or confident they feel disseminating that information across broad age groups.

### **Student Preparedness / Confidence**

In Renn's article (2008), she found that students who were coming directly from undergraduate and graduate programs were ill prepared for work in the private sector. She found that the students felt they were learning all they would need to be successful while in their curricular programs, but upon graduation their employers felt their skills and knowledge were lacking in key areas (Renn & Jessup-Anger, 2008). This led to additional surveys in which recent graduates suggested revisions to the current curriculum to better prepare future graduates. While her study focused on student affairs, its findings parallel with this research project in that current students often do not know the skills that are required while they are still taking courses (Renn & Jessup-Anger, 2008). They rely on their instructors to provide them with that needed

information. In Renn's (2008) case, the students were not prepared for the work asked of them, and the suggestion was made that professional development be a stronger component, as well as increased shadow experience in the field.

Similar to Renn's (2008) findings, Schulte (2008) found that student assessments of program satisfaction are critical for long-term success. As was done with the survey used in this study, he found that using information from multiple organizations of interest to develop questions can provide key indicators of a program's success while also improving readability (Schulte, 2008). By using the studies of Renn (2008) and Schulte (2008), the research undertaken for this paper became clearer. There may potentially be a knowledge disparity between current students and recent graduates, and if examined, with the students help, the program as a whole could potentially benefit.

Along similar lines to this proposal, a dissertation study conducted by Snyder (2005) assessed the satisfaction and effectiveness of current health education programs in the state of Indiana. Dr. Snyder sent a 'sample' created survey to every K-12 health educator in the state of Indiana. With a 25% return rate, she was able to find a statistically significant amount of health educators who felt they were underprepared for the job that lay ahead after graduation (Snyder, 2005). While her study had no questions related to confidence, a feeling of being under prepared is similar. The key areas indicated by researchers as areas of need were professional development, the lack of a support network, and a lack of balance between physical health and health education curricula during training. Snyder's study has been an excellent model for this research, as this study will focus on similar issues of students' perceived levels of preparedness, as well as their working counterparts' assessments of current curriculum standards.



Repeatedly, current health educators from Snyder's (2005) study affirmed that they received little to no professional development, nor did they feel they had a support network upon graduation from their institution. Further, they did not feel they had adequate input when curricular change was needed, and ultimately they felt were ill prepared for the teaching requirements that were before them. Interestingly, these same individuals, as found in longitudinal studies, believed that their current program was adequate to above average in preparation and support while undergraduates (Renn & Jessup-Anger, 2008; Rogers, Finley, & Patterson, 2006; Snyder, 2005; Taylor, 1990). This finding further illustrates the need for studies that examine student preparedness students currently enrolled simply do not know what skills they will need upon graduation. Moreover, while many instructors work tirelessly to see that all emerging trends are being addressed, they are still far removed from the system for which they are preparing graduates (Renn & Jessup-Anger, 2008; Snyder, 2005). The only logical answer that seems present is for curricular expansion so that students can be exposed to more subject matter prior to graduation and stronger ties to institutions or professional societies upon graduation.

One looming issue is the poor likelihood of comprehensive education allowed in K-12 school systems in the first place. In the section below, it will be shown that while there are very few federal policies governing the preparation and standards of health educators, there are several in place that can severely limit the scope of what instructors are allowed to discuss in their classrooms.

## **Federal, State, & Local Standards**

**Federal.** As it currently stands, there are no federal guidelines regarding health education. The Department of Education has yielded to the focused branches to decide what policies and regulations to implement for primary and secondary schools. As an example, the cafeteria offerings in all K-12 schools are set by the United States Department of Agriculture (USDA). What is interesting in regards to health education is that no single entity has sole input into how the curricula are to be run or what material must be covered. In fact, the only finding that was available was found within the Department of Health and Human Services, which states the qualifications for classifying program as *Abstinence-Only* Education:

The purpose of the State Abstinence Education Program Guidelines is to enable States to create or augment existing abstinence education programs and, at the option of the State, provide mentoring, counseling, and adult supervision to promote abstinence from sexual activity with a focus on those groups most likely to bear children out-of-wedlock. Faith-based and community-based organizations can participate in this program by collaborating with States to administer abstinence programs. (ACF, 2007, p. 1)

The site goes on to state that control over federal involvement in health education has moved through the following units in the past five years. Health education has been reassigned from the Health Resources and Services Administration (HRSA) to the Maternal and Child Health Bureau (MCHB) and recently to the Administration for Children and Families (ACF) in conjunction with the Family and Youth Services Bureau (FYSB) (ACF, 2007). Based on this evidence, it is not surprising that there are no direct standards or guidelines for health education. With this many transfers of power, any semblance of a cohesive curriculum would have likely been lost

long ago when the program originated within the Department of Health and Human Services (Guttmacher Institute, 2010).

Based on these findings, it is not surprising that students today struggle to maintain healthy behaviors. While states are more defined in what is expected and what is not allowed within health education curricula, it was disappointing to have the only federal standard to be one regarding abstinence-only programs, especially when so many studies have shown these programs as ineffective (Denny & Young, 2006; Elia & Eliason, 2010; Guttmacher Institute, 2010; Kantor, 2008; Kirby, 2007; National Center for Health Statistics, 2001).

**State.** Attached is a brief synopsis of each state's standards regarding health education; this table can also be found in the Appendix. (See Form 2.1.) As evident from the table, few states have any mandatory drug or nutritional education, and for states that do offer comprehensive education, it is almost strictly in the area of sexual education. All of the following information was collected from each state's respective legislative body, and the comparative data was taken from the 2010 YRBSS (Centers for Disease Control, 2010c).

**Form 2.1. State Policies Regarding Nutrition, Sexuality, and Drug Awareness**

State	State Health Policy Specific Coverage			Federal Std (FED) ; Not Required (NA) ; Abstinence-Only (ABS) ; Comprehensive (COMP) ; Not Required but If Taught Must Be... NA (XXX)
	Nutrition	Sexuality	Drug Abuse	
Alabama	FED	NA (ABS)	FED	
Alaska	FED	NA (ABS)	FED	
Arizona	FED	NA	NA	3rd Highest Teen Pregnancy Rate
Arkansas	FED	NA (ABS)	FED	2nd Highest Teen Obesity Rate
California	FED	NA (COMP)	COMP	
Colorado	FED	NA (COMP)	COMP	
Connecticut	FED	FED	FED	
Delaware	FED	NA (ABS)	NA	
District of Columbia	FED	COMP	FED	
Florida	FED	NA (COMP)	NA	
Georgia	FED	NA (ABS)	FED	3rd Highest Teen Obesity Rate
Hawaii	COMP	COMP	COMP	
Idaho	FED	FED	FED	
Illinois	FED	NA (COMP)	FED	
Indiana	FED	NA (ABS)	FED	2nd Highest in Teen Smoking
Iowa	FED	COMP	FED	
Kansas	FED	COMP	FED	
Kentucky	FED	NA	NA	Highest in Teen Smoking
Louisiana	FED	NA (ABS)	FED	Tied for Highest Teen Alcohol Abuse & 2nd in Drug Abuse
Maine	FED	COMP	COMP	3rd Lowest Teen Pregnancy Rate
Maryland	FED	COMP	FED	
Massachusetts	FED	COMP	COMP	
Michigan	FED	FED (ABS)	FED	
Minnesota	FED	COMP	FED	2nd Lowest Teen Obesity Rate
Mississippi	FED	NA (ABS)	FED	Highest Teen Obesity Rate (44.4%)
Missouri	FED	NA (ABS)	FED	
Montana	FED	NA	NA	
Nebraska	FED	NA	NA	
Nevada	FED	FED	FED	2nd Highest Teen Pregnancy Rate
New Hampshire	FED	COMP	COMP	Lowest Teen Pregnancy Rate (33 / 1000)
New Jersey	FED	COMP	COMP	2nd Highest Teen Alcohol Abuse Rate (67.4%)
New Mexico	FED	NA	NA	Highest Teen Preg (93 / 1000) & Highest Drug Use
New York	FED	NA (COMP)	COMP	
North Carolina	FED	PRT APR	NA	
North Dakota	FED	NA (COMP)	NA	
Ohio	FED	ABS	FED	
Oklahoma	FED	NA (ABS)	NA	
Oregon	FED	NA (COMP)	COMP	3rd Lowest Teen Obesity Rate
Pennsylvania	FED	FED	FED	
Rhode Island	FED	COMP	FED	3rd Highest Teen Alcohol Abuse Rate (66%)
South Carolina	FED	ABS	NA	
South Dakota	FED	NA (FED)	NA	
Tennessee	FED	NA (ABS)	NA	
Texas	FED	NA (ABS)	NA	4th Highest Teen Preg & 3rd Highest Teen Alcohol Abuse
Utah	FED	ABS (REL)	COMP (REL)	Lowest Teen Obesity Rate (23.1%)
Vermont	FED	COMP	COMP	2nd Lowest Teen Pregnancy Rate
Virginia	FED	NA	NA	
Washington	FED	NA (COMP)	COMP	
West Virginia	FED	NA	NA	3rd Highest Teen Smoking
Wisconsin	FED	NA (ABS)	FED	Tied for Highest Teen Alcohol Abuse (67.8%)
Wyoming	FED	NA	NA	

As detailed in the chart, one state lists a comprehensive set of standards for key health issues, Hawaii, and the majority of states, thirty in total, either do not require health education, require only the federal HIV prevention information, or allow only abstinence-only education. The states listed as having comprehensive education on some level are also the states rated the

lowest or best for key indicators in teen pregnancy, drug usage, and obesity. The states that have health education listed as optional or limited in some capacity, however, have consistently rated the highest or worst in those very same indicators.

While health education alone is not the key to solving all of these issues, these findings do support earlier research showing that individuals who are provided accurate age-appropriate information are more likely to engage in healthy behaviors as opposed to those students who must rely entirely on their peers and their families for education (Cawley et al., 2007; Centers for Disease Control, 2010a; Denny & Young, 2006).

**Local.** When examining health education standards at the local level, variations can be noticed from the county level all the way down to a specific school. In several of the states listed above that do not have comprehensive education in a particular discipline, many have left it up to the counties and their citizens to determine what they feel are needed. This theory has its roots in America's healthcare system in that the federal government establishes universal guidelines, the states refine those guidelines for their citizens, and then the counties are in charge of implementation and enforcement. What primarily separates health education standards from that comparison is the fact that when provided with an option, it is easy to have an instance where something is taught in one school and not in the school next door.

A key example of this issue can be found in the state of Wisconsin. In 2010, Wisconsin revised its health education standards to include an option for local counties to determine if they would like condom usage to be discussed in the high-school classroom in the context of abstinence education (T. Richmond, 2010; M. Simon, 2010). The issue rose from the choices that the Wisconsin government made prior to this revision, as their health education guidelines state that health education is optional. However, if schools should choose to teach the course,

they must closely follow the eight guidelines of the federal abstinence program. Yet in looking at the program, there is no mention of contraception usage (ACF, 2007; T. Richmond, 2010; M. Simon, 2010).

Using that information as the background, we can now examine a fairly common issue within these states. The county of Juneau, Wisconsin is located approximately 1.5 hours south of Madison, WI. Juneau is next to Adams County, and in 2010, the citizens of Adams County voted for abstinence-only education and to not allow any discussion of condoms. Conversely, the county of Juneau did pass a vote allowing for the discussion of condoms. Using the above information, the district attorney for Juneau County, Scott Southworth, also a resident of Adams County, sent a letter to all of the schools in Juneau stating that if they went forward with teaching condom usage, they would be guilty of contributing to the delinquency of minors and promptly arrested (ACF, 2007; T. Richmond, 2010; M. Simon, 2010).

The state government quickly became involved and stated, “any county whose citizens voted in a majority favor to teach condom usage will be safe from legal retribution” (T. Richmond, 2010, p 5). While this story may seem extreme or unique, it is quite common in states that believe “abstinence only” education is the best way to protect young adults. The states of Texas, South Carolina, Arkansas, and Louisiana have actually taken the Wisconsin standards one-step further and left the determination of teaching condom usage up to the cities, towns, and villages on nearly a school-by-school basis. The exact literature from the Louisiana code is such: Parental Approval: Code §37-13-173 (1998) requires that schools give at least one week's written notice of an intent to provide any kind of sex education, and to provide parents an opportunity to review all materials. It also states, "Upon the request of any parent, the school

shall excuse the parent's child from such instruction or presentation, without detriment to the students standing (an 'opt-out policy')" (Louisiana Code, §37-13-173, p. 1).

With these variations in guidelines from county to county, the CDC in the YRBSS results have actually been able to see trends of disparity in areas offering condom education with neighbors offering none. While citizens have every right to examine the materials their children are being asked to learn, having a system where hypothetically a school on one side of the street can teach condom usage, nutrition, and drug awareness, and on the other side of the street, a school that does not allow any drug or sexual information to be discussed will naturally create disparity and increase the likelihood of false information between peers and social norming (Castro, 2009).

In the next section, an examination of higher education institutions and the standards that have been implemented will take place. What has been found is that, similar to this section, many universities choose to follow the state standards, and unless the requirements are altered, they rarely implement change at their level.

### **Higher Education Standards and Assessment**

Higher education standards in the United States are far from universal. As it currently stands, any individual working to earn a teaching certificate can also work towards earning what is called an endorsement (I.S.B.E., 2011). An endorsement is different from a certificate in that it designates a specific learning standard not in the student's major. Where a teaching certificate states a competency in a field, an endorsement states the field and the level based on testing or course work. For example, an individual could earn a teaching certificate in physical education and a health endorsement for elementary and middle school, but not high school (I.S.B.E., 2011).

These endorsements allow undergraduates and practicing professionals to focus on key areas of interest within a specific discipline.

Along similar lines, it would also be possible for someone to venture outside of their area of concentration to receive an endorsement. As an example, an instructor in Tuscola, IL has a bachelor's degree in history, but also has a middle school health endorsement. This allows this individual to teach both the history courses as well as the health education courses.

One issue that has been an area of concern amongst education professionals is the variations in the endorsement standards from state to state (Braxton, Bayer, & Finkelstein, 1992). Each college and university that has a 4-year teaching certificate program must meet state guidelines so that upon graduation, the students can practice in K-12 schools. For those same students who wish to earn endorsements, they must also complete state mandated requirements for both a particular field and grade level (I.S.B.E., 2011; R. Moore, 2002).

While most state standards are similar, an issue can arise when one state chooses to raise or lower its standards and then has a graduate who cannot teach in another state without further coursework or testing. While not overly common, due to questions of academic quality and health disparities, some states (Illinois, Florida, and Oregon) choose to raise requirements in an effort to improve both. On the opposite side, states not often seen as appealing relocation points (Alaska, Montana, and Wyoming) are lowering endorsement requirements in an effort to develop and attract more teachers (R. Moore, 2002). While on the surface the increased standards can be seen as a positive, there is the potential of similar problems to the county-by-county choice if these trends continue. If state A were to raise standards for its educators and state B were to lower standards to develop more teachers, it would be expected that the health outcomes for students in state A would be higher than those in state B.



A salient example is the state of Illinois. Since 1992, the state has required that students who wish to earn a health education endorsement complete 24 credit hours of collegiate work in that chosen discipline (Council on Teacher Education., 2010). Using the University of Illinois at Urbana-Champaign as an example, students earning this endorsement would be asked to complete a portion of their hours in the Community Health discipline and the remaining in the physical sciences designated as health related (Kinesiology, Anatomy, Physiology, Nutrition, etc.) (I.S.B.E., 2010a; University of Illinois at Urbana-Champaign, 2011). One issue with this system is that the only requirement is the course type and the total number of hours. The Illinois State Board of Education guidelines do not state that the course must be of a certain level, cover pertinent material, or be of a certain depth. Without that standard, a student earning a health endorsement at UIUC could take all 24 credits in courses designed for freshman and sophomores, essentially general education courses (Council on Teacher Education., 2010; Jones, 2011). Being that these courses are broad in nature, students who successfully complete them would not be considered well-versed in the material (Jones, 2011).

In 2012, the Illinois State Board of Education will implement new standards for all endorsements requiring that 12 of the 24 required hours be in upper-level courses defined as Junior and Senior level course work (I.S.B.E., 2010a). According to Phyllis Jones, in the Department of Educator and School Development at the Illinois State Board of Education, these standards were raised for the following reasons:

- (1) Most of the current research shows that we do not draw from the same professional pool of students as engineering and medicine while in other countries, this is not true hence the C or better and increasing the cut score of the parts of the basic skills test.
- (2) Teachers must know and feel confident teaching their content area.

(3) Teachers must be able to tackle higher level coursework beyond the level of general education courses of the previous decade. Under the old guidelines a math, science, or any other teacher could complete all their content courses at the general education level. We wanted to make sure that the teachers were capable of working at a higher level.

(P. Jones, Personal Communication, May 10, 2011)

This change has the potential to be influential across the state, as most 4-year institutions in the state, Illinois State University, the University of Illinois, and Eastern Illinois University as examples, carry few, if any, health education course work above sophomore standing, in keeping with the previous ISBE standards (Eastern Illinois University, 2011; Illinois State University, 2011; University of Illinois at Urbana-Champaign, 2011). These new requirements from the ISBE will necessitate that these programs undergo some level of revision. These revisions will likely go one of two directions. (1) The courses themselves will be enhanced and raised to junior and senior level standing based on the course work and the depth of the material; or (2) The course catalog could simply be revised to move previously freshman and sophomore level courses to junior and senior level standing with no curricular modifications. The latter is clearly the simpler and less intrusive choice; however, if the institutions choose the former and allow instructors to come together and develop new courses around particular topics the depth of information will greatly improve, and would thus come closer to the recommendations from the CDC and HHS (Centers for Disease Control, 2009, 2010c)

The other side of this endorsement issue resides in states like Montana, where the health curricula are only required to meet the federal standards for HIV awareness education established back in 1988 (Centers for Disease Control, 2007; Kirby, 2007). Due to the small population and the sparse nature of the school districts in states like Montana, the state can retain

standards for over a decade without revision. In reality, these standards are actually very similar to the former standards of Illinois, Florida, and Oregon. States like Montana and Idaho require approximately 20 credit hours in course work determined by the institution to be relevant to that students expected future teaching needs (Idaho State Department of Education, 2011; The Montana Office of Public Instruction, 2011). The question comes up again: are collegiate educators completely up-to-date on the current needs of K-12 educators? While many maintain active roles in professional organizations, as has been shown by Renn (2008), Schulte (2008), and Snyder (2005), sometimes curricula can become stagnant, and the material, while relevant, may not be the most topical for the current needs of the students.

The most pressing need, based on the evidence presented, is that we need a set of uniform standards across all states. However, based on the size of the population and the diverse belief systems throughout, this is highly unlikely. The next best alternative, as shown by the research, is to develop educators from curricula that foster professional development, field mastery, and confidence in dissemination. While this study addresses only one aspect of the potential causes of the health disparities we are facing, it is believed that better educators will allow for a growing population of positively health minded individuals to grow and teach future youth and adolescents positive health behaviors and the benefits of maintaining them throughout one's life.

## **CHAPTER 3**

### **Problem and Purpose**

As noted in the previous chapters, the issue of instructional confidence is a relatively new area of study. While previous studies of confidence by Renn (2008), Schulte (2008), and Snyder (2005) have been conducted, none, as of yet, have examined the confidence levels of health education instructors who were trained as physical educators. Information concerning instructional confidence is critical for health education instructors in determining the effectiveness of current curricula and their relationship to real-world situations experienced by their students. Therefore, the primary goal of this study was to determine the confidence levels of upperclass students in the process of becoming physical educators and comparing them with the confidence levels of recent graduates, of the same institutions, who are currently employed as health and physical educators (HPE). Based on previous research, the assumption for this study was that the two groups will differ in levels of perceived instructional confidence. It should be noted that confidence levels were measured via survey, and that questions assessing this confidence cover broad topic areas familiar to all health educators. Specifically, instructional confidence will be measured on the topics of physical fitness, obesity prevention methods, nutrition, illicit drug use, and human sexuality. These topic areas were chosen based on the yearly YRBSS and CDC health behavior surveys and the Illinois Department of Education health endorsement standards criteria.

### **Research Questions and Hypotheses**

#### **Research Question 1.**

Do those pre-service or in-service instructors primarily trained in physical education feel confident in delivering health information across a broad array of topics?

***Research Hypothesis 1.***

H<sub>0</sub>: Those instructors trained in physical education will express inconsistent levels of confidence in delivering health information across a broad array of topics.

H<sub>a</sub>: Those instructors trained in physical education will express consistent levels of confidence in delivering health information across a broad array of topics.

**Research Question 2.**

Is there a difference in the indicated instructional confidence levels of pre-service physical education instructors and those of in-service physical education instructors?

***Research Hypothesis 2.***

H<sub>0</sub>: There is no statistically significant difference between those pre-service physical education instructors and in-service physical education instructors.

H<sub>a</sub>: There is a statistically significant difference between those pre-service physical education instructors and in-service physical education instructors.

**Research Question 3.**

Does the instructional confidence of current instructors vary depending upon their working counties' guidelines for health education? Do those who work in abstinence-only school districts report lower confidence than those who work in comprehensive health education districts? (This confidence is not from a political perspective, but rather from a knowledge retention perspective.)

### ***Research Hypothesis 3.***

H<sub>0</sub>: There is no statistically significant difference between those working in abstinence-only school districts and those working in progressive or comprehensive health education districts.

H<sub>a</sub>: There is a statistically significant difference between those working in abstinence-only school districts and those working in progressive or comprehensive health education districts.

### **Subjects**

This study was approved by the Institutional Review Board at the University of Illinois. For this study, upperclass adult males and females in KIN 361 and KIN 363 were asked to participate by completing the current student survey (see Form 3.1). Out of a possible 35 students, 33 participated, resulting in a 94.3% return. The course surveyed at Illinois State University was both sections of KNR 341 which comprised 100% of the upperclassmen physical education students, of which 53 or 82.8% participated, and at Eastern Illinois University students were surveyed in KSS 3400, KSS 4320, and KSS 4470, which again allowed for 100% of the upperclassmen physical education students to be surveyed. Following collection, it was found that out of a possible 82 students, 76 (or 92.6%) participated. All data for upperclassmen was collected during class time, and the classes chosen at the three institutions were selected in conjunction with the department heads and faculty members teaching those courses. Ultimately, the decision was made to administer the survey to the students enrolled in courses for students planning to pursue careers in K-12 physical education or courses that assist students in earning the health endorsement from the Illinois State Board of Education. It was initially estimated that

approximately 120 surveys would be collected from upperclassmen. Following completion, a total of 162 surveys from upperclassmen across all three institutions were collected and analyzed, with only 1 requiring removal for failure to respond to multiple questions.

Graduates of the past two years from these institutions were the second group of interest. However, this group provided the added complication of communication and tracking. With the aid of the department heads, an email list for each school was provided for recent graduates who majored in physical education. The initial goal was to have only emails of health endorsement graduates be provided, but due to unforeseen complications with alumni associations, all graduates of the three physical education programs were provided. In order to qualify for participation in this study, all participants were required to be currently employed at a secondary or high school at the time of survey admission and submission and teaching physical education and health education or just health education. Prior to collection, a goal of 150 completed surveys was estimated. Following the completion of data collection, a total of 120 completed surveys were collected and found to be acceptable for this study.

## **Instrument**

In order to determine if there was a difference between current students and recent graduates' confidence levels, the *Health Education Confidence Survey* (HECS) was constructed by the author (see Appendix Form 3.1 & Form 3.2). The HECS was developed using a combination of existing and proven survey instruments from the Illinois State Board of Education (ISBE), the Youth Risk Behavioral Surveillance Survey (YRBSS), surveys constructed by Snyder (2005), and the 35 competencies developed by the National Commission for Health Education Credentialing (NCHEC).

The HECS consists of 18 questions and took no student more than 10 minutes to complete. Questions 1-6 were modified from Snyder's (2005) survey assessing satisfaction and overall confidence regarding current health educators in Indiana, their curricula, and their level of professional support. Questions 7-11 consist of items aimed at assessing the individuals' perceived instructional confidence level for the given topic area. The questions were derived from a combination of the following: (1) the YRBSS and their results indicating the areas of most need for adolescent and young adult issues, (2) the ISBE secondary level health education endorsement standards, and (3) the NCHEC core competencies. Utilizing these three accepted sources, the author hoped to assess the participants' confidence in developing a lecture of the listed topic areas to high school level students. The listed objectives underneath each of the questions were displayed to remind the participants of what was expected under each indicated topic area. Finally, questions 12-18 collect anonymous demographic information.

While studies have demonstrated the reliability and validity of the YRBSS and BRFSS, the HECS is entirely new, and all of the questions have been modified to suit this study (Furlong, 2004; Nelson, Holtzman, Bolen, Stanwyck, & Mack, 2001). Efforts were made to assess the reliability and validity of the HECS. Specifically, the reliability of the HECS was examined through a test – retest analysis. This test – retest took place on 11/11/11 and consisted of eleven individuals from the projected subject pool taking the survey in a timed interval of 5 minutes, waiting approximately 50 minutes, and then taking the survey again. Upon completion, it was found that their answers were statistically consistent ( $R = .896$ ) with their first test and that the survey was deemed reliable for this preliminary study regarding instructional confidence.

In terms of validity, experts in the fields of health education, physical education, and survey methodology were asked to assess the content validity of the HECS. These experts



examined each item on the survey to determine readability, soundness and accuracy of the material, and the appropriateness of scale and scope. All experts consulted stated the HECS was a sound instrument for the proposed study. As indicated above, the HECS contains 18 items in total with 12 using a Likert-type scale (1-5) and the remaining 6 using dichotomous responses or ordinal data (e.g., yes – no).

Q1-Q6 assessed the confidence of each individual that their curricular program was meeting their expectations, as well as the professional standards developed by the state. These measures cover curriculum, content exposure, coursework depth, and job preparation. All questions, except for Q1 (Health Endorsement), used a Likert-type scale ranging from 1 = Strongly Disagree to 5 = Strongly Agree. For Q1 *Are you working towards a health teaching endorsement* the responses choices were Yes - No - Unsure. For the five questions that assessed confidence, a Likert-type scale was used to allow the participant to indicate a range of perceived instructional confidence for the given topic areas. These measures obtained from Q7-Q11 of the HECS covered the following topic areas: Physical Fitness, Obesity Prevention, Nutrition, Licit & Illicit Drug Use, and Human Sexuality. Each confidence question was worded as follows: *Based on training from my Health Endorsement coursework, I would feel confident teaching a lesson (Grades 9-12) regarding (insert specific topic area)*. Participants response choices ranged from 1 = Strongly Disagree to 5 = Strongly Agree, meaning lower values represented a lower feeling/sense of confidence for disseminating information for the given topic area and higher values represented a higher level of perceived confidence regarding the specific topic area. Q12-Q18 collected demographic information regarding the participants' gender, anticipated or achieved graduation date, major, and professional organization involvement. It should be noted

that on the recent graduates survey there was an additional question added to determine if the survey participant was working in an abstinence-only school district (see Form 3.2).

## **Procedures**

Survey administration took place during the fall semester of 2011, prior to the end of the fall semester. All participants were students either currently enrolled or recently graduated from physical education programs at one of these three institutions: the University of Illinois at Urbana-Champaign, Illinois State University, and Eastern Illinois University. These sites were chosen both for their proximity to one another and for the size of their physical education programs in relation to other nearby institutions.

As required by the University of Illinois Institutional Review Board (IRB) protocol, all participants were provided with a consent form (see Appendix Form 3.3 & Form 3.4), stating that the survey was entirely optional, completely anonymous, and that participation with this study would not affect their educational or professional status at any point. Consultation with the author was also available to all participants should any questions regarding participation have arisen. Those individuals who chose to provide consent were asked to complete the survey instrument.

Since surveys were given firsthand by the author to currently enrolled students, the above methodology was carried out consistently at each testing site. However, for the recent graduates, surveying in person was not possible, so those individuals were contacted via email. The email addresses for recent graduates were obtained from department heads at all three institutions. Again, in keeping with IRB protocol, all potential participants were emailed a consent form explaining the purpose of the study, that they would remain anonymous, and that participation

would in no way affect their professional status or employment either now or in the future. Upon receiving digital confirmation of their consent, the survey instrument was emailed to the participants with the caveat of a 24-hour return time. Ideally, the acceptance and return of the survey instrument would have been the same predetermined time used for the currently enrolled students, but due to varying schedules of professionals, this was not possible. Confidentiality of recent graduates was assured through the deletion of all of the contact information following survey data collection and data analysis.

## **Analyses**

All statistical analyses were performed using *SAS 9.2 Analytics*. All of the analyses were held to a 0.5 alpha level. Demographic variables were summarized using the mean, standard deviation (SD), range for continuous variables, and frequency and percent of the categorical variables. Twelve of the eighteen items on the HECS used a Likert-type response system (1 = Strongly Disagree to 5 = Strongly Agree). These items underwent an unequal sample size – equal variance t-test to determine if the means from the six groups (UIUC upperclassmen, UIUC graduates, ISU upperclassmen, ISU graduates, EIU upperclassmen, EIU graduates) statistically differed. In addition, there were two recognized sets (Upperclassmen & Recent Graduates) that were also analyzed. An ANOVA test was completed to allow for greater comparison of the data between upperclassmen and recent graduates. Finally, a set of descriptive statistics was used to provide frequency and percentiles of responses. The remaining demographic items on the HECS underwent cross tabulation and, where appropriate, bivariate analysis. Those undergoing bivariate examination were gender and graduation date. It was hoped that these particular tests

would illuminate any differences in confidence that may exist between males and females and between those of different graduating classes.

In the next chapter, the analyses of the data and answers to research questions posed in Chapter 1 will be addressed, with Chapter 5 providing a comprehensive summary of the findings and implications of the study results.

## CHAPTER 4

### Overview

The current study was designed to examine the relationship between the training/preparation of physical education teachers and their instructional confidence in delivering health education information to high school students. In order to determine if there is a relationship between training/preparation and perceived instructional confidence, as well as whether there are differences between those who trained at different institutions or those who work in counties that require abstinence-only education, the *Health Education Confidence Survey* (HECS) was constructed by the author. Questions 2-6 were modified from Snyder's (2005) survey and designed to assess satisfaction and overall confidence regarding various aspects of their curriculum and their perceived level of professional support. Questions 7-11 consisted of items aimed at assessing the individual's perceived instructional confidence for the given material. These questions were derived from a combination of the following: (1) the YRBSS and their results indicating the areas of most need for adolescent and young adult issues, (2) the ISBE secondary level health education endorsement standards, and (3) the NCHEC core competencies. Finally, question 1 and questions 12-18 collected anonymous demographic and organizational information. All analyses were conducted using SAS 9.2 and held to .05 as a cutoff for determination of statistical significance.

This chapter is organized into two distinct sections based on the survey's construction. The first section highlights the descriptive characteristics of the study population, the questions focused on assessing curricular satisfaction and student preparedness, and the extended analyses that took place on Q7-Q11, which were designed to assess instructional confidence across the selected topics. Descriptions of the study populations and their mean responses are also shown

to allow for more rapid comparison. This chapter closes with the results of the three Research Questions posed in Chapter 1.

### **Descriptive Characteristics of Respondents**

I will begin the reporting of results in this section by describing the broad descriptive characteristics of the study population by university. Each university's population was examined so that the sample and return rates from these institutions could be better understood.

Current students from the following three institutions were asked to participate: (1.) University of Illinois at Urbana-Champaign, (2.) Illinois State University, and (3.) Eastern Illinois University. Only students who were juniors and seniors in physical education programs were asked to participate by completing the eighteen question survey. The total population from this group was 163 out of a possible 182, resulting in an 89.5% return. All data were collected using a convenience sample.

At the University of Illinois at Urbana-Champaign, the total population of 53 participants consisted of 32 current students and 21 recent graduates out of a potential sample size of 97, resulting in a total 54.6% return. The current student return was 94.2% and the recent graduate return was 33.8%. The current students sample composition was 12 females and 20 males with 23 indicating they were pursuing a health teaching endorsement. In this sample 19 indicated they were majoring in physical education, 11 indicated they were majoring in K-12 education, and 3 were majoring in biomechanics, coaching, or other, with 16 indicating they were members of a professional organization (AAPHPERD, IAPHERD, APHA, or SHES).

At Illinois State University, the total population of 95 participants consisted of 51 current students and 45 recent graduates out of a potential sample size of 143, resulting in a total 66.4% return, respectively. The current student return was 82.8% and the recent graduate return

was 51.9%. The current students sample composition was 19 females and 35 males with 25 indicating they were pursuing a health teaching endorsement. In this sample, 27 indicated they were majoring in physical education, 20 indicated they were majoring in K-12 education, and 7 majoring in biomechanics, coaching, or other, with 34 indicating they were members of a professional organization (AAPHPERD, IAPHERD, APHA, or SHES).

At Eastern Illinois University, the total population of 134 participants consisted of 76 current students and 58 recent graduates out of a potential sample size of 171, resulting in a total 78.4% return. The current student return was 92.6% and the recent graduate return was 64%. The current students sample composition was 17 females and 59 males with 53 indicating they were pursuing a health teaching endorsement. In this sample 26 indicated they were majoring in physical education, 40 indicated they were majoring in K-12 education, and 10 majoring in biomechanics, coaching, or other, with 36 indicating they were members of a professional organization (AAPHPERD, IAPHERD, APHA, or SHES).

Recent graduates from the three institutions were contacted via email, as mentioned previously, asking for their participation in the survey. The total number of graduates who agreed to participate was 120 out of a possible 231 potential contacts, resulting in a 51.9% return.

The University of Illinois' recent graduates sample consisted of 14 females and 7 males, with 13 indicating they held an Illinois health teaching endorsement. In this population, 6 indicated that they majored in physical education, 13 indicated they majored in K-12 education, 2 majored in biomechanics, coaching, or other, with 13 indicating they were members of a professional organization (AAPHPERD, IAPHERD, APHA, or SHES).

When looking at Illinois States University's recent graduates the sample consisted of 20 females and 21 males, with 27 indicating that they held an Illinois health teaching endorsement. In this population 25 indicated that they majored in physical education, 12 indicated majored in K-12 education, and 4 majored in biomechanics, coaching, or other, with 38 indicating they were members of a professional organization (AAPHPERD, IAPHERD, APHA, or SHES).

Finally, looking at Eastern Illinois University's recent graduates, the sample consisted of 20 females and 38 males, with 41 indicating that they held an Illinois health teaching endorsement. In this sample, 27 indicated that they majored in physical education, 21 indicated that they majored in K-12 education, and 10 majored in biomechanics, coaching, or other, with 42 indicating they were members of a professional organization (AAPHPERD, IAPHERD, APHA, or SHES).

In order to further understand the study population, anonymous demographic information was collected in both surveys (i.e. gender, major, proposed or realized graduation year, and enrollment in professional organizations). The total sample population of 283 consisted of 163 currently enrolled students and 120 recent graduates. The total male population sample was 180 with the total female population being 102. The total current student population that indicated they were pursuing an Illinois state health endorsement was 101, with a total of 81 recent graduates indicating they held an Illinois state health endorsement, which resulted in a total of 182, or 64% of the total sample population. The remaining 36% or 101 survey participants that did not have or did not indicate that they were pursuing a health teaching endorsement remained in all analyses. All 120 recent graduates surveyed held state appropriate teacher certifications.

**Analyses of curricular satisfaction and curricular preparedness.** This subsection focused on the analyses of Q2-Q6 and Q12-Q13 to determine if any significant findings exist in



the areas of curricular satisfaction and/or preparedness. An analysis of **Q2** (Overall Curricular Satisfaction) revealed that current students (N=163) had an above average response ( $M = 3.987$ ,  $SD = .947$ ) which was statistically significant ( $p = .0037$ ) when compared to recent graduates (N=120) ( $M = 3.643$ ,  $SD = 1.04$ ), with the greatest university mean separation found between current ISU and EIU students ( $p = .0258$ ). In examining **Q3** (Health Endorsement Satisfaction), no significant difference could be found between current students and recent graduates. **Q4** (Future Employment), however, did result in a statistically significant difference between current students ( $M = 3.653$ ,  $SD = .953$ ) and recent graduates ( $M = 4.042$ ,  $SD = .844$ ), which resulted in ( $p = .0004$ ).

**Q5** (Continuing Education) was found to be statistically different between current students and recent graduates ( $p < .0001$ ). Current students indicated a much higher perceived support level ( $M = 3.809$ ,  $SD = .906$ ), versus recent graduates who indicated a perceived support as ( $M = 2.508$ ,  $SD = .996$ ). In **Q6** (Recommend Program) both current students and recent graduates of their programs indicated above average means of ( $M = 4.18$ ,  $SD = .957$ ) and ( $M = 4.06$ ,  $SD = .807$ ), indicating that the respondents do believe their programs are appropriate for those desiring to teach physical education in addition to health education at the 9-12 level.

For **Q12** (Coursework Depth), it was found that the responses between the two groups was significantly different ( $p = .0065$ ). This finding may be an anomaly when compared to the responses from **Q3**, which asked participants to indicate how well they felt the health education course work they had taken had prepared them for teaching health education at the 9-12 levels. Within this question was an additional significant finding comparing the mean responses of recent UIUC graduates ( $M = 2.619$ ,  $SD = .740$ ) and recent EIU graduates ( $M = 3.621$ ,  $SD = .933$ ,  $p < .0001$ ) which were found to be significantly different. The final topical analysis occurred on

**Q13** (More Coursework Needed), which found that the current students indicated mean of ( $M=3.043$ ,  $SD = 1.09$ ) was significantly higher than the mean of recent graduates ( $M = 2.483$ ,  $SD = 1.21$ ,  $p <.0001$ ), indicating current students believe more course work should be required during undergraduate training.

**Analyses of instructional confidence by university and student status.** In this section, a greater focus is placed on **Q7-Q11**, which were designed to assess instructional confidence. A breakdown of mean responses for each university and their subpopulations (current student / recent graduates) is below, along with a brief descriptive breakdown of the sample populations. The data have been organized in such a way as to allow for a rapid comparison between not only current students and recent graduates, but also between universities. Based on the findings from these questions, the three research hypotheses posed in Chapter 1 can be answered.

***The University of Illinois at Urbana-Champaign.*** The total population of 53 consisted of 32 current students and 21 recent graduates out of a potential sample size of 97, resulting in a total 54.6% return, respectively. The current student return was 94.2%, and the recent graduate return was 33.8%. The average instructional confidence means for the two sample groups can be seen below:

(Note: 1 being strongly disagree and 5 being strongly agree)

*Current Students*

Q7. (Confidence in Physical Education)  $M = 4.18$ ,  $SD = 0.95$

Q8. (Confidence in Obesity Prevention)  $M = 4.03$ ,  $SD = 0.95$

Q9. (Confidence in Nutrition Education)  $M = 3.48$ ,  $SD = 0.87$

Q10. (Confidence in Drug Prevention)  $M = 3.45$ ,  $SD = 0.97$

Q11. (Confidence in Human Sexuality)  $M = 3.30$ ,  $SD = 1.02$

*Recent Graduates*

Q7. (Confidence in Physical Education)  $M = 4.43, SD = 0.60$

Q8. (Confidence in Obesity Prevention)  $M = 3.19, SD = 0.87$

Q9. (Confidence in Nutrition Education)  $M = 2.86, SD = 0.85$

Q10. (Confidence in Drug Prevention)  $M = 2.19, SD = 0.68$

Q11. (Confidence in Human Sexuality)  $M = 2.81, SD = 0.98$

**Illinois State University.** The total population of 95 consisted of 51 current students and 45 recent graduates, out of a potential sample size of 143, resulting in a total 66.4% return. The current student return was 82.8%, and the recent graduate return was 51.9%. The average instructional confidence means for the two sample groups can be seen below:

*Current Students*

Q7. (Confidence in Physical Education)  $M = 4.11, SD = 0.96$

Q8. (Confidence in Obesity Prevention)  $M = 4.15, SD = 0.87$

Q9. (Confidence in Nutrition Education)  $M = 3.76, SD = 0.95$

Q10. (Confidence in Drug Prevention)  $M = 3.76, SD = 0.99$

Q11. (Confidence in Human Sexuality)  $M = 3.74, SD = 1.05$

*Recent Graduates*

Q7. (Confidence in Physical Education)  $M = 3.90, SD = 0.92$

Q8. (Confidence in Obesity Prevention)  $M = 3.76, SD = 0.94$

Q9. (Confidence in Nutrition Education)  $M = 2.73, SD = 0.78$

Q10. (Confidence in Drug Prevention)  $M = 2.85, SD = 0.76$

Q11. (Confidence in Human Sexuality)  $M = 3.73, SD = 1.03$

*Eastern Illinois University.* The total population of 134 consisted of 76 current students and 58 recent graduates out of a potential sample size of 171, resulting in a total 78.4% return, respectively. The current student return was 92.6%, and the recent graduate return was 64%.

The average instructional confidence means for the two sample groups can be seen below:

*Current Students*

Q7. (Confidence in Physical Education)  $M = 4.32, SD = 0.75$

Q8. (Confidence in Obesity Prevention)  $M = 4.18, SD = 0.74$

Q9. (Confidence in Nutrition Education)  $M = 4.03, SD = 0.80$

Q10. (Confidence in Drug Prevention)  $M = 4.08, SD = 0.86$

Q11. (Confidence in Human Sexuality)  $M = 4.03, SD = 0.91$

*Recent Graduates*

Q7. (Confidence in Physical Education)  $M = 4.14, SD = 0.91$

Q8. (Confidence in Obesity Prevention)  $M = 3.10, SD = 0.95$

Q9. (Confidence in Nutrition Education)  $M = 2.86, SD = 0.96$

Q10. (Confidence in Drug Prevention)  $M = 2.38, SD = 0.93$

Q11. (Confidence in Human Sexuality)  $M = 2.97, SD = 0.82$

In analyzing these data, I also wanted to examine any demographic differences that may exist among the participants. In analyses across classification status (Junior, Senior, and Graduate) no significant differences were found. No significant difference was found between genders (Female and Male). Across all questions, there was no statistically significant interaction found between gender, student classification, or university setting.

## Results with Associated Research Questions

Based on the findings from the above section, the remaining portion of Chapter 4 examines whether the research hypotheses of this study can be accepted, or if the null hypotheses were supported.

**Research question 1.** Do those pre-service or in-service instructors primarily trained in physical education feel confident in delivering health information across a broad array of topics?

**Research hypothesis 1.**  $H_a$ : Those pre-service and in-service instructors trained in physical education will express consistent levels of instructional confidence in delivering health information across a broad array of topics.

To test the consistency of the responses between current students and recent graduates for variance, a Levene's  $t$ -test was conducted on all of the instructional confidence questions. Based on the findings below, the null hypothesis can be rejected that either pre-service or in-service health instructors will indicate inconsistent levels of instructional confidence. However, there is one exception in the case of Q10 (Teaching Drug Prevention), which displayed a statistically significant variation in the study population. Below are the results of the analyses:

Q7. Levene's Test of Homogeneity ( $p = .3021$ )

Q8. Levene's Test of Homogeneity ( $p = .8084$ )

Q9. Levene's Test of Homogeneity ( $p = .3459$ )

Q10. Levene's Test of Homogeneity ( $p = .0192$ )

Q11. Levene's Test of Homogeneity ( $p = .9741$ )

What these data tell us is that those instructors trained in physical education do express consistent levels of instructional confidence in delivering health information across a broad array of topics. The Levene test confirmed that variance is not a significant factor across the tested

sample for the questions designed to assess instructional confidence. Using these results, we can then look to the second research question to ultimately find out if the primary hypothesis of this study was achieved.

**Research question 2.** Is there a difference in the indicated confidence levels of pre-service physical education instructors and those of in-service physical education instructors?

**Research hypothesis 2.**  $H_a$ : There is a statistically significant difference between those pre-service physical education instructors and in-service physical education instructors.

A two-way ANOVA was the primary test conducted due to the variable of interest, which was perceived instructional confidence across the two factors: universities (x3) and student status (x2). In addition, an unequal means – equal variance T-Test was used to support/reject the ANOVA findings, as well as to provide an additional test of the null hypothesis found in research question 1 that states, “Instructors trained in physical education will express inconsistent levels of instructional confidence in delivering health information based on student status.” Based on the above analyses, it was found that pre-service physical educators do have instructional confidence levels that were found to be statistically significant when paired against their in-service physical education counterparts resulting in the rejection of the null ( $p < .0001$ ). What should also be noted is that when examining the two-way ANOVA results below, it can be seen that Q7 (Confidence in P.E. instruction) was found to be not statistically significant between the two groups, while the other instructional confidence questions (Q8-Q11) were all statistically significant with all resulting in  $p$ -values of less than .0001. An elaboration of these findings can be found in Chapter 5. Below are the results of the two-way ANOVA with pre-service/in-service status being tested and a  $t$ -test comparing the means of pre-service and in-service physical educators (see Table 1 – 5 and Table 11-12):

Q7-Q11. ( $F' < .0001$ ) Satterthwaite  $t$ -test ( $p < .0001$ )

Q7. (Confidence in Physical Education) Two-Way ANOVA ( $p = .6788$ )

Q8. (Confidence in Obesity Prevention) Two-Way ANOVA ( $p < .0001$ )

Q9. (Confidence in Nutrition Education) Two-Way ANOVA ( $p < .0001$ )

Q10. (Confidence in Drug Prevention) Two-Way ANOVA ( $p < .0001$ )

Q11. (Confidence in Human Sexuality) Two-Way ANOVA ( $p < .0001$ )

The results of the two-way ANOVA test were found to be consistent when compared with the same data undergoing a standardized  $t$ -test comparing Current Students to Recent Students. In addition, the Folded F Statistic is a label of sample variance used within SAS, meaning if the F statistic ( $F'$ ) is  $> .05$ , then the variance is equal and the Pooled  $t$ -test result is valid. If  $F'$  is  $< .05$ , then the variance is unequal and the Satterthwaite  $t$ -test result is valid. The results of the analyses can be found below (see Table 6-10):

Q7. ( $F' = .8935$ ) Pooled  $t$ -test ( $p = .2842$ )

Q8. ( $F' = .0929$ ) Pooled  $t$ -test ( $p < .0001$ )

Q9. ( $F' = .9334$ ) Pooled  $t$ -test ( $p < .0001$ )

Q10. ( $F' = .2902$ ) Pooled  $t$ -test ( $p < .0001$ )

Q11. ( $F' = .8379$ ) Pooled  $t$ -test ( $p < .0001$ )

Additionally, it can be noted that current students from Eastern Illinois University displayed the highest overall levels of perceived instructional confidence ( $M = 4.128$ ,  $SD = .639$ ), while current students at the University of Illinois at Urbana-Champaign displayed the lowest overall levels of perceived instructional confidence ( $M = 3.689$ ,  $SD = .842$ ) across the selected topics. Finally, those students who listed their major as K-12 education displayed the highest overall levels of instructional confidence across the selected health topics ( $M = 3.863$ ,  $SD$

= 1.02) and those who listed their majors as Coaching Administration displayed the lowest overall levels of instructional confidence across the selected health topics ( $M = 3.167$ ,  $SD = 1.50$ ).

**Research question 3.** Does the instructional confidence of current instructors vary depending upon their working counties' guidelines for health education? Do those who work in abstinence-only school districts report lower confidence than those who work in comprehensive health education districts? (This confidence is not from a political perspective, but rather from a knowledge retention perspective.)

**Research hypothesis 3.**  $H_a$ : There is a statistically significant difference in instructional confidence between those working in abstinence-only school districts and those working in progressive or comprehensive health education districts.

Unfortunately, no statistical tests could be performed due to only 8 participants indicating that they worked in abstinence-only school districts. However, it should be noted that while this research was developed and conducted, the number of school districts in the state of Illinois indicating that they were teaching comprehensive health education programs grew (NCSSE, 2012).



## CHAPTER 5

### Discussion

While the findings of this study cannot be generalized across the entire physical education population, or even the complete physical education population in Illinois, there is sufficient evidence to support the argument that students who are currently enrolled in pre-service physical education courses do have instructional confidence levels that are significantly different than their in-service physical education peers. The findings in this study also support previous studies conducted by Schulte (2008), Snyder (2005), Renn (2008), and Yingling (2000) that currently enrolled students, regardless of discipline, will display higher levels of confidence than their recently graduated peers.

As shown in the analysis of Q2 (Overall Curricular Satisfaction), current students had an above average mean response, which was found to be significantly different when compared to recent graduates responses ( $p = .0037$ ). These findings also support the research of Schulte (2008) and Taylor (1990), who found that currently enrolled students displayed higher levels of satisfaction and confidence than their in-service counterparts. While the case for instructors teaching outside of their chosen discipline is uncommon in most fields, for K-12 physical education instructors it is becoming the norm (Braxton et al., 1992; Sirna, Tinning, & Rossi, 2010; Taylor, 1990). With that knowledge and these preliminary findings, I believe a case can be made for curricular revision that not only addresses the physical education pedagogy aspects, but also emphasizes the health education pedagogy aspects across the most current salient topics.

While the topics chosen for this survey are the broadest and most commonly used in state and federal testing, there are many other areas of health education that were not addressed (bullying, environmental health, etc.), and it is likely that these topics will come to be of greater

interest as the years progress. Instructors entering the classroom with a false sense of confidence in their teaching abilities may also help to explain the rise in social norms as a primary source of information for adolescents and young adults (Centers for Disease Control, 2009; Jones, 2011; Wright, 2007). As indicated in Chapter 2, as non-comprehensive health curricula increased in popularity and health promotion programs grew, several institutional gaps allowed instructors with little to no training to educate K-12 students on health information with a side agenda (D.A.R.E., 2001; Kirby, 2007; Rosenbaum, 2007). Often times, these programs were met with very negative results (Centers for Disease Control, 2010b; D.A.R.E., 2001; D. Hamilton, 1997; Kirby, 2007; Rose & Duer, 1978; Rosenbaum, 2007). However, this study and its findings should not be construed as anything more than preliminary. Studies suggest that if instructors are entering health education classrooms with an overdeveloped sense of confidence, as has been supported by this study, it could lead to the development of negative health behaviors in their students (Clemmens, Engler, & Chinn, 2004; C. Davenport & Brown, 2009; Wright, 2007). This concept was demonstrated in Chapter 2, when it was shown that in both discussions of human sexuality and illicit drug use, instructors provided less than accurate information or engaged in topic avoidance (Centers for Disease Control, 2010a, 2010b; Rosenbaum, 2007; Veselak, 2001). These pedagogical mistakes lead to students who were more likely to engage in risky health behaviors and work solely from the information gathered from peers (C. Davenport & Brown, 2009; Elia & Eliason, 2010; Jones, 2011; Rosenbaum, 2007; Wright, 2007).

**Noteworthy Interpretations.** In further examining the analyses from the Chapter 4 subsection *Curricular Satisfaction and Curricular Preparedness*, several survey questions necessitate attention for their findings. In Q4 (Future Employment), for example, a statistically significant difference was found between current students and recent graduates ( $p = .0004$ ).

Perhaps this can be viewed as expected, as those in the recently graduated group were all currently employed, and the current students were still awaiting graduation. This position is supported by both Renn (2008) and Sirna (2010). Also for Q5 (Continuing Education), a statistically significant difference existed between current students and recent graduates ( $p < .0001$ ) regarding a belief of educational support following graduation. These findings are consistent with research conducted by Renn (2008) and Yingling (2000); while Renn examined students who majored in Human Resource Management and Yingling measured students who majored in Kinesiology, both found that students do expect a support network to exist upon graduation. This network was found to be lacking at all three surveyed institutions in this study. As recognized in Renn's (2008) study, this research showed that current students indicated a much higher perceived support mean versus recent graduates. It is possible that this result can be explained by looking at the three physical education programs designs. It is clear that professional support following graduation has not been developed, nor is it seen as a priority (Eastern Illinois University, 2011; Illinois State University, 2011; University of Illinois at Urbana-Champaign, 2011). This curricular approach can be seen as logistically and financially understandable, but this desire for and expectation of professional support should be taken into account when developing current students. Based on these findings, current students have indicated that they believe their university programs will continue to support them professionally following graduation. While professional support comes from many areas, in the case of this study, as indicated by the survey respondents, support means continuing education opportunities, a willingness to help with job placement, and a continued sense of connection with the program and faculty. While all of these traits are part of the three undergraduate programs in some aspect, it is clearly not the long term mission of these programs to provide such support. I

believe a potential resolution to this issue could be as simple as an announcement or pre-graduation interview to help current students better understand what support, if any, would exist upon graduation.

Related to Q6 (Recommend Program), this study found that both current students and recent graduates of their programs indicated above average means. This result points to the respondents' beliefs that their programs are appropriate for those desiring to study physical education in addition to health education at the 9-12 level. For me, this was somewhat surprising given the above results of Q5 where support was rated poorly. This question requires further examination to better understand why students believe the support, depth, and quality of their curriculum to be below average but is still acceptable for recommendation to peers. One potential explanation that is supported by Yingling's (2000) research is that the surveyed sample did not place a significant value on these program characteristics and feel the core areas emphasized in their programs are of sufficient quality to become a successful instructor. Further testing would need to occur to see if this hypothesis would also apply to this study's sample.

The question of coursework depth was addressed in Q12 where the responses between the two groups were also found to be significantly different. I believe this finding to be intriguing when compared to the responses from Q3, which asked participants to indicate, "How well they felt the health education coursework they had taken had prepared them for teaching health education at the 9-12 levels" and found no significant differences. I believe further investigation of this topic is defensible. What was also unique within Q12 was the stark contrast found between the mean responses of recent UIUC graduates ( $M = 2.619$ ,  $SD = .740$ ) and recent EIU graduates ( $M = 3.621$ ,  $SD = .933$ ,  $p < .0001$ ). I believe this finding also warrants further

investigation into why recent graduates of UIUC felt the course work depth was inadequate when compared to their counterparts at EIU.

One potential explanation for the expressed difference in UIUC and EIU current students could be the amount of time they have spent within their programs. At the University of Illinois at Urbana-Champaign students declare themselves as K-12 physical education majors when they have junior level standing. However, at EIU and ISU, students are able to enter their K-12 physical education programs as incoming freshmen, which could provide a potentially stronger cohort and conversely a higher sense of instructional confidence. Further, this added time within the discipline could potentially provide students with greater exposure to physical education content, which could also likely increase perceived instructional confidence.

Finally, Q13 (More Coursework Needed) resulted in another unanticipated finding. In nearly all previous studies of curriculum improvement, including those conducted by Renn (2008), Schulte (2008), Taylor (1990), Yingling (2000), and Snyder (2005), all found the opposite of this study's result. Based on previous research, one would expect recent graduates to indicate that more coursework should be required to teach health education effectively, while current students would indicate that the current curriculum is more than adequate. This research found the opposite within the tested sample, with current students rather than recent graduates indicating a significantly higher belief that more coursework would be beneficial for meeting the health teaching endorsement standards, and in the notations of one student, "the development of a better health education teacher." There mean comparison ( $p < .0001$ ) goes against all previous research done on similar populations. In terms of an explanation, the only available research information comes from Snyder (2008), who found in her survey that health educators in Indiana did express higher levels of perceived stress when compared to other K-12 disciplines. This

stress could potentially result in the findings found in this research. Additionally, due to this stress, perhaps in-service instructors believe that no additional coursework could have better prepared them for the position, while pre-service instructors may believe that all additional course work would be beneficial. This statement is just a hypothesis and certainly requires greater examination.

### **Study Implications**

Health education instructors in the United States are most commonly trained as physical education instructors (Doolittle et al., 2009; Jones, 2011; Manross, 2009; Rossi, Sirna, & Tinning, 2008). This indicates that these instructors are expected to have a mastery of both physical education pedagogy as well as health education pedagogy. The level of training currently required for physical education instructors in the area of health education by the state of Illinois and most states in the U.S. is significantly lacking in depth (Jones, 2011; O'Flynn, 2010). This lack of training could lead to the deficiencies found when I tested for instructional confidence. While instructional confidence develops from far more than a singular factor, in all likelihood, those individuals who would rightly indicate strong instructional confidence would have a proficient understanding of their discipline across multiple topic areas. With insufficient training and significantly different instructional confidence means between the two sample groups, those claims can be supported by the findings of this study.

While many states, Illinois included, are working to revise these standards, the fact remains that many schools working to develop well-rounded physical education instructors are missing a significant portion of the work that lies ahead for their graduates. A greater relationship needs to be present between physical education programs and health education

programs, so that these students can maximize their time in undergraduate work and be better prepared for the public and private sectors that lay ahead. This conclusion may indicate that combining the two programs is yet to be tested or shown to be effective, but based on the findings from this study, it is clear that physical education students need more significant exposure to health education topic areas to feel confident in disseminating health information.

More closely examining the results from Research Hypothesis 2 may help to shed light on the areas of most need. Results indicated that current students and recent graduates expressed high levels of instructional confidence in physical education. It is possible that the lack of significance found in Q7 (Confidence Physical Education) ( $M = 4.22, SD = .868$  v.  $M = 4.11, SD = .877, p = .6788$ ) should not be seen as unusual when compared to the other instructional confidence questions (Q8-Q11), but quite the opposite, as both the pre-service and in-service instructors surveyed were enrolled in physical education programs either currently or recently. While their majors may have varied within, the training they received regarding physical education instruction will have remained consistent with state standards.

The reason this result may be of interest is that all of the questions showing a strong significant difference between the groups were instructional confidence questions that focused strictly on health education topics, which are only found outside of the participants' primary major(s), but which are required for a health teaching endorsement. With the above information in mind, the results of Q7 can be seen as positive for all three programs tested and should be read as such. However, when asked to indicate instructional confidence levels in the selected health education topics, the response rates were less than confident and significantly different between current students and recent graduates. This result should be read as an opportunity for these three institutions to take a greater interest in these programs and reorganize them so that their

graduates are better prepared for the job market that lies ahead. Previous studies' findings, supported by this research, suggest the first step in improving instructional confidence between current students and recent graduates lies within the curriculum.

**Proposed Curricular Revisions.** As it currently stands at all three institutions surveyed, all physical education majors are required to only take between one and three health education courses to satisfy prerequisite standards (Eastern Illinois University, 2011; Illinois State University, 2011; University of Illinois at Urbana-Champaign, 2011). What I propose, based on the findings from this study and previous works, is that the curricula expand to require specific health education courses that are required by the state for the health teaching endorsement. I believe these should be required regardless of the student's future employment goals. As has been shown in other research and surveys, students may go into a K-12 system with only an interest in teaching physical education, but more than likely, they will be asked to teach health education as well (Manross, 2009). If this requirement means reducing the amount of prerequisite courses, so be it. All of the topics that the students were surveyed across (nutrition, drug use, human sexuality, etc.) are courses that are offered at these same institutions and have been for many years. Students primarily only take those courses, however, that are required to graduate as quickly as possible. This creates a void in their educational preparation, because these surveyed institutions, like many throughout the United States, do not see health education as being of equal importance to course work in one's own major of physical education. While it is true that students majoring in physical education should have extensive course work in that field, it is also apparent that these programs were not taking the potential social responsibilities into account when they developed these curricula.



What I propose is as follows. I will use the curriculum from the University of Illinois at Urbana-Champaign as the example. Currently students are required to take the following courses to meet the 128 credit hours required to graduate with a B.S. in Kinesiology and a focus on K-12 Physical Education (University of Illinois at Urbana-Champaign, 2011):

**Form 5.1.** Requirements for both Kinesiology and Teacher Certification

Hours	Kinesiology Core Requirements
3	KIN 122 - Physical Activity and Health
1	KIN 125 - Introduction to Kinesiology
2	KIN 130 - Analysis of Basic Movement
3	CHLH 101 - Intro to Public Health
3	KIN 140 - Social Science of Human Movement
<b>3</b>	<b>KIN 150 - Bioscience of Human Movement</b>
3	KIN 240 - Soc & Psych of Phys Activity
3	KIN 257 - Coordination, Control, & Skill
3	KIN 262 - Motor Develop, Growth & Form
<b>3</b>	<b>KIN 352 - Bioenergetics of Movement</b>
<b>3</b>	<b>KIN 355 - Biomechanics of Human Movement</b>
<hr/>	
30 Hours	
	<i>Requirements for Teaching Certification</i>
Hours	Required Electives and Correlate Area Studies
3	KIN 360 - Adapted Physical Education
3	KIN 361 - Curriculum in Grades K-6
3	KIN 362 - Curriculum in Grades 7-12
3	KIN 363 - Instructional Strategies in PE
3	KIN 364 - Exper in the Common School
3	KIN 401 - Measure & Eval in Kinesiology
3	KIN 460 - Technology & Pedagogical KINES
5	KIN 131-136 Teacher certification students need a total of 5 courses from this sequence. (See undergraduate academic advisor)
1	CI 473 - Literacy in Content Areas
3	EPS 201 - Foundations of Education
3	EPSY 201 - Educational Psychology
8	EDPR 438 - Ed Prac in Sp Fields in Ele Ed
8	EDPR 442 - Ed Prac in Secondary Ed
<hr/>	
49 Hours	

These bolded courses are suggested for removal for those students who have an indicated focus of Physical Education, as opposed to Kinesiology or other biomechanically focused disciplines.

With these courses removed, 9 credit hours open up under the ‘required courses’ where health

education courses can be added. Again, using the University of Illinois at Urbana-Champaign as the example, the replacement health education courses would be as follows (University of Illinois at Urbana-Champaign, 2011):

**Form 5.2. Recommended Health Education Course Work**

Hours	<i>Health Education Courses</i>
2	CHLH 206 - Human Sexuality
2	CHLH 243 - Drug Use and Abuse
3	FSHN 120 - Contemporary Nutrition
<hr/>	
7 Hours	

These courses were chosen because they can be found at all three tested institutions, and while many current physical education students do take these courses, they are not required courses.

What additionally adds benefit to these proposed changes are the pending Illinois State Board of Education changes regarding the Health Education Teaching Endorsement Standards (I.S.B.E., 2010a). The changes, as explained in Chapter 2, require students pursuing a teaching endorsement to take more junior and senior level course work in health and nutrition (I.S.B.E., 2011; Jones, 2011). My proposed changes, based on these findings, along with the ISBE's pending changes, create an opportunity for the University of Illinois and other institutions to overhaul these entry level courses to ensure that the material is of sufficient depth for students to meet the new guidelines and feel comfortable teaching the material at all K-12 levels.

It is recommended that these changes also include allowing only properly trained and prepared instructors to teach these courses. Currently these three proposed courses are taught entirely by graduate students working as teaching assistants. As a former course coordinator, I can speak to the minimal oversight that takes place in these courses. While the lectures for these entry level courses are typically doctoral students near graduation and focused in these areas of study, the discussion sections and some off-shoot lectures can be taught by any graduate student

who has undergone basic training and is enrolled in the college. This minimal training and the assumptions of teaching skill are very similar to the problems found within the D.A.R.E. program (D.A.R.E., 2001). In Chapter 2, it was shown that the police officers who become instructors for the D.A.R.E. program had limited education training, but expressed high confidence regarding the subject matter because of their training in law enforcement. However, when we looked at the success of the D.A.R.E. program, it has been shown to be well below average. I believe the struggles of the D.A.R.E. program parallel what can be seen in health education today. There is a group of motivated instructors, in this case undergraduate students and in-service physical education instructors, with limited training in health education who express high levels of confidence in material that is technically outside of their specialty.

Beyond course work, another potential method for elevating the level of health educators' involvement and knowledge could be through the use of after school programs developed by the HPE's themselves. Most coordinated school health programs use them in conjunction with existing health education courses and have seen amazing results (Lytle et al., 2003; Osganian et al., 2003; Parcel et al., 2003). The CATCH program in particular has been shown to have tremendous results when implemented in a comprehensive manner (Parcel et al., 2003). Students not only receive positive health behavior reinforcement in the classroom, but also throughout the school network and in various after school programs. While this will likely have a greater impact on the students rather than the instructors, the ultimate goal is to have healthier adolescents and young adults through any means necessary.

An additional benefit to after school programs is that they are typically active participation programs that require students to move and maintain an elevated heart rate, which has been shown repeatedly to reduce the likelihood of obesity (Stubbs & Lee, 2004; Varela-

Moreiras, 2006). Further, it has been shown that students coming from a lower socioeconomic background are less likely to engage in negative health behaviors when their schools offer after school programming (Vieweg et al., 2007). Since this group is the most at risk for the three main issues discussed (obesity, illicit drug use, and risky sexual behavior), it only makes sense to have after school programs be an integral part of a health education reform plan. Students in physical education already have coursework dedicated to activity programming, and with the addition of the suggested course work in health, it would make the programs all the more beneficial.

**Prospective measures of competency.** While the above changes would have a potential impact on future students, I believe one of the most straightforward ways of ensuring that graduating students have a basic health competency is through a required certification exam. Competency examinations are nothing new to the professional world, and most every industry understands their purpose and value in helping to assure the quality of practicing professionals (Goodman, Arbona, & De Rameriz, 2008; J. E. Smith & Merchant, 1990). While there is a nationally recognized health education assessment known as the Certified Health Education Specialist (CHES) exam, it is entirely optional, geared towards collegiate educators, and is often never obtained (NCHEC, 2008). What I propose is an examination given by colleges and universities that occurs prior to graduation and/or prior to earning a state teaching endorsement for health education. Like the CHES and the ISBE's health endorsement exam, it would stress the core competencies in health education and ensure that an individual was able to demonstrate a broad understanding of several key health education topic areas relevant across all age ranges and societal backgrounds.

A legitimate question could then be asked, "why not simply ask the CHES or ISBE exam be required prior to certification status?" My concern with recommending one of these existing

exams is that the CHES is a for-profit company with a questionable track record in terms of validity (Butler, 1997; McKenzie & Seabert, 2009). The ISBE exam is too specific to the health issues of the state of Illinois to be used nationwide (I.S.B.E., 2010a). While state specific exams could serve as good measure of minimum competency, several states have minimal standards and no exam (see Form 2.1).

For this certification exam, I would propose that teachers at the K-12 level and professors at the college level work together to establish the core health competencies for a nationwide examination. While the existing CHES does have an impressive list of competencies, this exam was created solely by collegiate health educators and has not been shown to be an effective measurement tool of a K-12 health educator's effectiveness in the classroom (Davidson, 2008; DeGroft, 1998; McKenzie & Seabert, 2009; NCHEC, 2008). In addition, I believe that the proposed national certification exam should stress a broad general understanding of health behavior and health education topic areas, something current state exams cannot offer. Because this exam would be used for all potential health educators spanning grades K-12, the appropriate understanding of child, adolescent, and young adult behavior would be critical for success in the classroom (Osganian et al., 2003; Parcel et al., 2003). If my suggested preparations are met and agreed upon, the national core health competency examination could occur during the student's senior year while they are completing other requirements for K-12 teacher certification. If it were a concern, current health educators could be grandfathered in under the new guidelines assuming they engage in the changes recommended below.

An additional area where health educators could benefit would be with continuing education (Bradley, Drapeau, & DeStefano, 2012; Campbell, Silver, Sherbino, Cate, & Holmboe, 2010; Davidson, 2008). Like all teaching professions, physical educators are required

by the state to have a certain number of continuing education hours in their discipline. Similar to the proposed curricular revisions mentioned earlier in the chapter, the continuing education requirements could be revised to include health education if that physical educator is teaching a health education course. This proposed change would not impose upon the existing system and would help to ensure that current health educators are keeping up with relevant health information and trends. In a study conducted by Davidson (2008), most current health educators surveyed were in favor of continuing education with the majority (67%) preferring to receive professional development at national meetings or with home study courses. While Davidson's study was aimed at college health educators, it was found to be consistent with the continuing education desires of high school level health educators who participated in Snyder's study in 2005 (Davidson, 2008; Snyder, 2005).

Continuing education has been a part of professional development for decades with proven success (Houle, 1980; Renn & Jessup-Anger, 2008; S. Richmond, 2009). With the current state of the health education, not many health education instructors are actually trained in health education (Jones, 2011; Manross, 2009). Consequently, the number of physical educators who actually complete continuing education credits in health education is very small in proportion to their representation as health educators (Jones, 2011; Manross, 2009; Porter et al., 2008; Renn & Jessup-Anger, 2008; S. Richmond, 2009). Requiring that some portion of the continuing education standards for physical education instructors be in health only makes sense. Unfortunately as they currently exist, continuing education hours in health are entirely optional to physical educators (Campbell et al., 2010; Jones, 2011; Snyder, 2005).

While a complete overhaul of the physical education system is unlikely and unneeded, the hope with this research and these proposed changes is that universities and colleges will

better understand the needs of current physical education students and professionals and work with them to make their transition to the private sector as smooth as possible.

## **Limitations**

I believe the results of this study should be viewed with prudence due to a number of limitations. First, the sample population utilized in this study was a convenience sample on several levels. While the three schools tested do have some of the largest and most respected physical education teaching programs in the state, there are still several other large colleges and universities that could have been included had time permitted. Further, while the current students surveyed were random within the courses recommended, the surveys were conducted in courses designed by the instructors to prepare students to become K-12 physical education instructors. Because of this convenience sample, the results of this study could be seen as not being completely representative of the broader physical education student and graduate population.

The second limitation involves the first time use of the HECS instrument and its application to the physical education community. The HECS was constructed by the author, as a modified compilation of questions from multiple existing and proven survey instruments from the Illinois State Board of Education (ISBE), the Youth Risk Behavioral Surveillance Survey (YRBSS), and surveys constructed by Snyder (2005), Yingling (2000) and the 35 competencies developed by the National Commission for Health Education Credentialing (NCHEC). Since the HECS is using modified versions of questions from the above surveys, it has not been extensively proven to be a reliable and valid instrument for the physical education population or the accurate assessment of instructional confidence. While it did work successfully in a test-

retest and was determined to be a valid instrument by experts across the three disciplines affected (health education, physical education, and survey methodology), it still will require additional testing. While every effort was made to make the most reliable and accurate instrument possible for this research study, it would be arrogant on the part of the author to assume that no improvements could be made to the instrument in future testing.

Third, this was a preliminary study. The population and the instrument used in combination require that the results of this study be used with caution. For instance, it would be presumptuous to take the results of this work without careful judgment and imply grand implications. Along similar lines, it would be shortsighted to assume that the HECS measured all aspects of instructional confidence or a student's preparedness to teach a health education course effectively.

Fourth, the research design required recently graduated students to use retrospective recall when determining how much their course work assisted them in preparing to become health educators. The same point could be made for current students. While it is more common for physical education students to take health education courses throughout their undergraduate work, it is possible that narrowing the focus of this study to junior and senior level students forced them to retrospectively recall their health education course work and then make a judgment based on a career they do not yet possess.

The final limitation of note revolves around the concept of life and career stage transitioning. This concept could certainly be a contributing factor to the results found in this research. All individuals will most always demonstrate more confidence in an environment and lifestyle in which they have grown accustomed as opposed to a new job and new environment (Campbell et al., 2010; Newton & McKenna, 2007). While the concept of transitioning could



and likely is a contributing factor to this study, I do not believe that it diminishes the results of this study, nor is it an easy factor to control. Students, like all individuals, will go through transitory phases throughout their lifetimes (Bell & Lee, 2006). This study attempted to assess whether or not current students' confidence levels differed from recently graduated physical education teachers; if yes, what measures could be taken to minimize any transitory affects.

Ultimately, the results of this study do demonstrate that a significant instructional confidence difference does exist between those students who are currently enrolled and those individuals who recently graduated and are working as both physical education and health education instructors. These findings could be seen as especially important due to the fact that this type of assessment has never taken place within the discipline of physical education. While it is clear from the results that certain institutions are more successful at student preparation, it must also be recalled that the students surveyed were all from a four year academic span at these institutions. The limited time span of four years may not adequately represent the views of the entire sample population.

### **Future Research**

It is hoped that this study will serve as a springboard for future research into instructional confidence and the overall improvement of health education in the United States. The results of this study found that current students do in fact have higher instructional confidence levels not only in their overall curriculum, but also in their beliefs that their health education curricula is of sufficient depth for them to teach successfully at the (9-12) high school level.

Duplication of this study with methods that address the aforementioned limitations is highly recommended. Additionally, as mentioned above, it would be ideal to conduct this study

with a larger sample population by including more institutions. Moreover, it would be advisable to expand the sample population to include all student classifications and recent graduates beyond the two year requirement set by this study. While this study was designed to focus on those individuals most nearly removed from their health education course work, it would be beneficial to see how the results would vary should the sample population not only increase in size but diversity. All of the above suggestions could be potentially helpful in terms of policy development or institutional reorganization.

This research study utilized a self-report measure to assess instructional confidence across selected health topics. The benefit of this approach is that individuals are typically more forthcoming with their feelings of strength or inadequacies in regards to the chosen topics. However, in future research, follow-up interviews with random study participants could prove useful in better identifying areas of the instructional processes that can be improved upon at the undergraduate level. While students and instructors are typically comfortable with completing surveys, it would be shortsighted to believe that a richer and more complete picture of the health education landscape could not be formed by conducting a mixed methods research study including a stronger qualitative portion.

## **Summary**

Overall, the results of this study support the existence of a significant difference in perceived instructional confidence levels between current students (pre-service) and recent graduates (in-service). These findings support the previous work of Schulte (2008) and Yingling (2000) who found that current students do have differing perceptions than their recently graduated counterparts. Furthermore, the findings from this study support the claim that

curricular revision, as asserted by Snyder (2005) and Taylor (1990), may be in order for all levels of physical and health education programs.

Based on findings from this and previous research, students who are currently enrolled do appear to have a distorted sense of their health education skill set, and once out in the working world they consistently find that several aspects of their training were lacking (Braxton et al., 1992; Renn & Jessup-Anger, 2008; Yingling, 2000). What this study hopes to demonstrate is that further work not only needs to be done in assessing instructional confidence in health education, but across other disciplines as well. As found by Renn (2008), Schulte (2008), and Yingling (2000), students appear to not be receiving adequate real-world training. In this case, real-world training is a stronger acknowledgement of the importance health education pedagogy plays in the life of a physical education instructor (O'Flynn, 2010; Sirna et al., 2010; Snyder, 2005; Yingling, 2000). In addition, it could also be stated from these findings that the curricula at all three of the testing institutions are in need of revision.

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## APPENDIX A: FORMS

Form 2.1

### *State Policies Regarding Nutrition, Sexuality, and Drug Awareness*

State	State Health Policy Specific Coverage			Federal Std (FED) ; Not Required (NA) ; Abstinence-Only (ABS) ; Comprehensive (COMP) ; Not Required but If Taught Must Be... NA (XXX)
	Nutrition	Sexuality	Drug Abuse	
Alabama	FED	NA (ABS)	FED	
Alaska	FED	NA (ABS)	FED	
Arizona	FED	NA	NA	3rd Highest Teen Pregnancy Rate
Arkansas	FED	NA (ABS)	FED	2nd Highest Teen Obesity Rate
California	FED	NA (COMP)	COMP	
Colorado	FED	NA (COMP)	COMP	
Connecticut	FED	FED	FED	
Delaware	FED	NA (ABS)	NA	
District of Columbia	FED	COMP	FED	
Florida	FED	NA (COMP)	NA	
Georgia	FED	NA (ABS)	FED	3rd Highest Teen Obesity Rate
Hawaii	COMP	COMP	COMP	
Idaho	FED	FED	FED	
Illinois	FED	NA (COMP)	FED	
Indiana	FED	NA (ABS)	FED	2nd Highest in Teen Smoking
Iowa	FED	COMP	FED	
Kansas	FED	COMP	FED	
Kentucky	FED	NA	NA	Highest in Teen Smoking
Louisiana	FED	NA (ABS)	FED	Tied for Highest Teen Alcohol Abuse & 2nd in Drug Abuse
Maine	FED	COMP	COMP	3rd Lowest Teen Pregnancy Rate
Maryland	FED	COMP	FED	
Massachusetts	FED	COMP	COMP	
Michigan	FED	FED (ABS)	FED	
Minnesota	FED	COMP	FED	2nd Lowest Teen Obesity Rate
Mississippi	FED	NA (ABS)	FED	Highest Teen Obesity Rate (44.4%)
Missouri	FED	NA (ABS)	FED	
Montana	FED	NA	NA	
Nebraska	FED	NA	NA	
Nevada	FED	FED	FED	2nd Highest Teen Pregnancy Rate
New Hampshire	FED	COMP	COMP	Lowest Teen Pregnancy Rate (33 / 1000)
New Jersey	FED	COMP	COMP	2nd Highest Teen Alcohol Abuse Rate (67.4%)
New Mexico	FED	NA	NA	Highest Teen Preg (93 / 1000) & Highest Drug Use
New York	FED	NA (COMP)	COMP	
North Carolina	FED	PRT APR	NA	
North Dakota	FED	NA (COMP)	NA	
Ohio	FED	ABS	FED	
Oklahoma	FED	NA (ABS)	NA	
Oregon	FED	NA (COMP)	COMP	3rd Lowest Teen Obesity Rate
Pennsylvania	FED	FED	FED	
Rhode Island	FED	COMP	FED	3rd Highest Teen Alcohol Abuse Rate (66%)
South Carolina	FED	ABS	NA	
South Dakota	FED	NA (FED)	NA	
Tennessee	FED	NA (ABS)	NA	
Texas	FED	NA (ABS)	NA	4th Highest Teen Preg & 3rd Highest Teen Alcohol Abuse
Utah	FED	ABS (REL)	COMP (REL)	Lowest Teen Obesity Rate (23.1%)
Vermont	FED	COMP	COMP	2nd Lowest Teen Pregnancy Rate
Virginia	FED	NA	NA	
Washington	FED	NA (COMP)	COMP	
West Virginia	FED	NA	NA	3rd Highest Teen Smoking
Wisconsin	FED	NA (ABS)	FED	Tied for Highest Teen Alcohol Abuse (67.8%)
Wyoming	FED	NA	NA	

\* All information in this table was collected from each states respective legislative body and from the 2010 YRBSS (Centers for Disease Control, 2010a)



# University of Illinois at Urbana- Champaign

## Confidence Survey

**Directions:**

This survey is entirely optional. I would like your feedback on how well you believe your Kinesiology/Physical Education and/or Health Endorsement curriculum has prepared you for your work as a health educator. Please review and answer the following questions to the best of your ability.

**Please rate your agreement with the following statements about your Kinesiology & Physical Education program and/or Health Endorsement coursework on a scale of 1 to 5 with 1 being strongly disagree and 5 being strongly agree:**

STATEMENT
<p><b>(Q1) Are you working towards a health education teaching endorsement</b>  <small>(Illinois State Board of Education Health Endorsement: A health endorsement is a statement appearing on a certificate that identifies the specific subject (in this case Health Education) and/or grade level that the certificate holder is authorized to teach based on specific health education coursework completed.)</small></p> <p style="text-align: center;">Yes — No — Not Sure</p>
<p><b>(Q2) My curriculum will expose me to all of the content (Physical Fitness, Obesity Prevention, Nutrition, Illicit Drug Use, Human Sexuality) I will need to teach health education effectively in grades 9-12</b></p> <p style="text-align: center;">1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree</p>
<p><b>(Q3) I feel confident that my Health Endorsement coursework will prepare me to teach health education (9-12) effectively</b></p> <p style="text-align: center;">1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree</p>
<p><b>(Q4) I have a good idea of what health education jobs I might be able to obtain when I complete the Kinesiology/Physical Education program</b></p> <p style="text-align: center;">1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree</p>
<p><b>(Q5) My undergraduate Kinesiology/Physical Education program has provided continuing education to me as a health educator</b></p> <p style="text-align: center;">1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree</p>
<p><b>(Q6) For those interested in teaching school (K-12) health education, I would recommend my Kinesiology/Physical Education program</b></p> <p style="text-align: center;">1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree</p>
<p><b>(Q7) Based on training from my Health Endorsement coursework, I would feel confident teaching a lesson (Grades 9-12) regarding physical fitness</b>  <small>(Expected Learning Objectives: Apply Concepts Related To Moving, Physical Fitness, and Foster Lifelong Physical Fitness Aspirations, etc.)                      Pangrazi, R. (2009). <i>Dynamic Physical Education for Elementary School Children (16<sup>th</sup> Edition)</i>.</small></p> <p style="text-align: center;">1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree</p>



Form 3.1 Cont.

**(Q8) Based on training from my Health Endorsement coursework,  
I would feel confident teaching a lesson (Grades 9-12) regarding obesity prevention**

(Expected Learning Objectives: Understanding the Health Outcomes of Overweight/Obesity at all Ages,  
Explaining Safe Methods of Weight Management, etc.)  
McKenzie, J. (2007). An Introduction to Community Health (6<sup>th</sup> Edition).

1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree

**(Q9) Based on training from my Health Endorsement coursework,  
I would feel confident teaching a lesson (Grades 9-12) regarding nutrition**

(Expected Learning Objectives: Explain Benefits of Healthy Foods vs. Less Healthy,  
Develop Skills Needed For Informed Nutritional Choices, etc.)  
Wardlaw, G. (2010). Contemporary Nutrition (7<sup>th</sup> Edition).

1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree

**(Q10) Based on training from my Health Endorsement coursework,  
I would feel confident teaching a lesson (Grades 9-12) regarding the dangers of illicit drug use**

(Expected Learning Objectives: Current Levels of Licit & Illicit Drug Use, Development of Peer-Refusal Skills,  
Consequences of Drug Use Licit or Illicit, etc.)  
Levinthal, C. (2010) Drugs, Behavior, and Modern Society (7<sup>th</sup> Edition).

1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree

**(Q11) Based on training from my Health Endorsement coursework,  
I would feel confident teaching a lesson (Grades 9-12) regarding human sexuality**

(Expected Learning Objectives: Explain how HIV and other STDs are Transmitted, Develop Peer-Refusal Skills, Explain Proper  
Contraception Usage, etc.)  
Rathus, S. (2010). Human Sexuality in a World of Diversity (8<sup>th</sup> Edition).

1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree

**(Q12) I feel that the health topics covered in my health education courses are presented in  
sufficient depth and detail to adequately prepare me to teach health education in (Grades 9-12)  
school settings**

(See Above For Examples of Learning Objectives)

1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree

**(Q13) I feel more health education courses should be required to earn a health teaching  
endorsement**

1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree

**(Q14) Are you a member of one or more of the following organizations (SHES, APHA, AAHPERD,  
IAHPERD)**

Yes -- No – Other (Please List → )

**(Q15) Your Gender**

Female – Male

**(Q16) As a Kinesiology/Physical Education major, my primary focus is...**

K-12 Teaching – Physical Education – Health Education – Biomechanics – Coaching/Administration –  
Undecided – Other

**(Q17) What year do you plan to graduate**

2012 – 2013 – 2014 – 2015 – 2016

Form 3.1 Cont.

**(Q18) Do you feel there should be more health education topic areas discussed than just Q7 – Q11?**

(Physical Fitness, Obesity Prevention, Nutrition, Illicit Drug Use, Human Sexuality)

Yes – No

**If You Answered Yes to the Last Question (Q18),  
Please Elaborate Which Topics You Believe Should Be Included In Health Education Curricula**

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*Thank you for completing this survey!*

*\*\* If you would like a copy of this survey or would like to express any feelings regarding this survey please contact:*

**Charles Holmes, MSPH  
129 Huff Hall, MC-588  
1206 South 4<sup>th</sup> Street  
Champaign, Illinois 61820 USA  
(217)649-9988 – fax (217) 333-0404**



# University of Illinois at Urbana- Champaign

## Confidence Survey

**Directions:**

This survey is entirely optional. I would like your feedback on how well you believe your Kinesiology/Physical Education and/or Health Endorsement curriculum has prepared you for your work as a health educator. Please review and answer the following questions to the best of your ability.

**Please rate your agreement with the following statements about your Kinesiology & Physical Education program and/or Health Endorsement coursework on a scale of 1 to 5 with 1 being strongly disagree and 5 being strongly agree:**

STATEMENT
<p><b>(Q1) Do you currently hold a health education teaching endorsement</b>  <small>(Illinois State Board of Education Health Endorsement: A health endorsement is a statement appearing on a certificate that identifies the specific subject (in this case Health Education) and/or grade level that the certificate holder is authorized to teach based on specific health education coursework completed.)</small></p> <p style="text-align: center;">Yes — No – Not Sure</p>
<p><b>(Q2) My curriculum exposed me to all of the content (Physical Fitness, Obesity Prevention, Nutrition, Illicit Drug Use, Human Sexuality) I needed to teach health education effectively in grades 9-12</b></p> <p style="text-align: center;">1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree</p>
<p><b>(Q3) I feel confident that my Health Endorsement coursework prepared me to teach health education (9-12) effectively</b></p> <p style="text-align: center;">1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree</p>
<p><b>(Q4) I had a good idea of what health education jobs I might be able to obtain when I complete the Kinesiology/Physical Education program</b></p> <p style="text-align: center;">1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree</p>
<p><b>(Q5) My undergraduate Kinesiology/Physical Education program has provided continuing education to me as a health educator</b></p> <p style="text-align: center;">1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree</p>
<p><b>(Q6) For those interested in teaching school health education, I would recommend my Kinesiology/Physical Education program</b></p> <p style="text-align: center;">1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree</p>

Form 3.2 Cont.

**(Q7) Based on training from my Health Endorsement coursework, I feel confident teaching a lesson (9-12) regarding physical fitness**

(Expected Learning Objectives: Apply Concepts Related To Moving, Physical Fitness, and Foster Lifelong Physical Fitness Aspirations, etc.)

Pangrazi, R. (2009). *Dynamic Physical Education for Elementary School Children* (16<sup>th</sup> Edition).

1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree

**(Q8) Based on training from my Health Endorsement coursework, I feel confident teaching a lesson (9-12) regarding obesity prevention**

(Expected Learning Objectives: Understanding the Health Outcomes of Overweight/Obesity at all Ages, Explaining Safe Methods of Weight Management, etc.)

McKenzie, J. (2007). *An Introduction to Community Health* (6<sup>th</sup> Edition).

1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree

**(Q9) Based on training from my Health Endorsement coursework, I feel confident teaching a lesson (9-12) regarding nutrition**

(Expected Learning Objectives: Explain Benefits of Healthy Foods vs. Less Healthy, Develop Skills Needed For Informed Nutritional Choices, etc.)

Wardlaw, G. (2010). *Contemporary Nutrition* (7<sup>th</sup> Edition).

1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree

**(Q10) Based on training from my Health Endorsement coursework, I feel confident teaching a lesson (9-12) regarding the dangers of illicit drug use**

(Expected Learning Objectives: Current Levels of Licit & Illicit Drug Use, Development of Peer-Refusal Skills, Consequences of Drug Use Licit or Illicit, etc.)

Levinthal, C. (2010) *Drugs, Behavior, and Modern Society* (7<sup>th</sup> Edition).

1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree

**(Q11) Based on training from my Health Endorsement coursework, I feel confident teaching a lesson (9-12) regarding human sexuality**

(Expected Learning Objectives: Explain how HIV and other STDs are Transmitted, Develop Peer-Refusal Skills, Explain Proper Contraception Usage, etc.)

Rathus, S. (2010). *Human Sexuality in a World of Diversity* (8<sup>th</sup> Edition).

1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree

**(Q12) I feel that the health topics covered in my health courses were presented in sufficient depth and detail to adequately prepare me to teach health education in (9-12) school settings**

(See Above For Examples of Learning Objectives)

1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree

**(Q13) I feel more health education courses should be required to earn the health endorsement**

1 – Strongly Disagree 2 – Disagree 3 – Neutral 4 – Agree 5 – Strongly Agree

**(Q14) Are you a member of one or more of the following organizations (SHES, APHA, AAHPERD, IAHPERD)**

Yes – No – Other (Please List)

**(Q15) Your Gender**

Female – Male

**(Q16) As a Kinesiology/Physical Education major, my primary focus was in...**

K-12 Teaching – Physical Education – Health Education – Biomechanics – Coaching/Administration – Undecided – Other

Form 3.2 Cont.

**(Q17) What year did you graduate**

2005 – 2006 – 2007 – 2008 – 2009 – 2010 – 2011

**(Q18) Does your current employer require you teach Abstinence-Only sexual education?**

Yes – No – Uncertain

**(Q19) Do you feel there should be more health education topic areas discussed than just Q7 – Q11?**

(Physical Fitness, Obesity Prevention, Nutrition, Illicit Drug Use, Human Sexuality)

Yes – No

**If You Answered Yes to the Last Question (Q18),  
Please Elaborate Which Topics You Believe Should Be Included In Health Education Curricula**

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*Thank you for completing this survey!*

*\*\* If you would like a copy of this survey or would like to express any feelings regarding this survey please contact:*

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(217)649-9988 – fax (217) 333-0404**

UNIVERSITY OF ILLINOIS  
AT URBANA-CHAMPAIGN



Survey Informed Consent – Current Students

**Description and Purpose of Research**

You are being invited to participate in a research study conducted by Charles Holmes under the supervision of Dr. Reginald Alston, professor of Kinesiology and Community Health at the University of Illinois at Urbana-Champaign.

The purpose of this research is to assess student and graduate confidence in the departments of kinesiology and community health. The primary focus is centered on instructional confidence and how that may impact future health educators. If you decide to participate, you will be asked to read and sign this document.

Your involvement in this project would require the completion of a brief eighteen question survey. Your total time commitment to this project will not exceed fifteen minutes. The survey will be distributed following the collection of the informed consent forms.

**Voluntary Nature of Participation**

Participation in this research is completely voluntary. As a UIUC student, you may participate, decline, or withdraw from participation without any effect on your grades at, status at, or future relations with this institution or the University of Illinois. To withdraw at any time, contact either Charles Holmes: cholmes1@illinois.edu or 217-649-9988 or Dr. Reginald Alston: alston@illinois.edu or 217-333-2307. You must be at least 18 years of age to participate in this study.

### **Confidentiality**

In this study, every effort will be made not to reveal personally identifiable information in publications based on this research. To accomplish this, no records will be created or retained that could link you to personally identifiable descriptions, paraphrases, or quotations. Statements you make may be presented without specific reference to you, referenced only by pseudonym, or combined anonymously with the actions and words of other participants.

### **Risks and Benefits**

Your participation in this project should not involve risks beyond those of ordinary life. You will not be paid for your participation in this research project, nor is it expected that your participation will bring you any tangible benefits. It is hoped that upon completion of this research, that the data collected will be disseminated to health and education communities via journal publications and conferences that will benefit from a greater understanding of how college-level health courses and curriculums impact others.

### **Contact Information**

If you have any questions, concerns, or complaints about this research project, please contact the Responsible Project Investigator (RPI) or Project Investigator (PI):

Reginald Alston, Community Health: Rehabilitation, 217-333-2307  
or alston@illinois.edu (RPI)

Charles Holmes, Community Health: Education, 217-649-9988  
or cholmes1@illinois.edu (PI)

If you have any questions about your rights as a participant in this study, please contact the University of Illinois Institutional Review Board at Suite 203, 528 East Green Street Champaign, IL 61820, 217-333-2670 (You may call collect if you identify yourself as a research subject) or via email at irb@illinois.edu.

### **Consent Statement**

*Please read carefully and initial your chosen response.*

I have read and understand the forgoing description of this research project, including information about the risks and benefits of my voluntary participation.

I give my permission to be surveyed \_\_\_\_\_ (Please Initial to Grant Consent)

Form 3.3 Cont.

I do not wish to participate in this research \_\_\_\_\_ (Please Initial to Deny Consent)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Print Name

*There are two copies of this form. Please sign both. Return one in the survey administrator and keep one for your records.*



UNIVERSITY OF ILLINOIS  
AT URBANA-CHAMPAIGN



Survey Informed Consent – Recent Graduates

**Description and Purpose of Research**

You are being invited to participate in a research study conducted by Charles Holmes under the supervision of Dr. Reginald Alston, professor of Kinesiology and Community Health at the University of Illinois at Urbana-Champaign.

The purpose of this research is to assess student and graduate confidence in the departments of kinesiology and community health. The primary focus is centered on instructional confidence and how that may impact future health educators. If you decide to participate, you will be asked to respond to this email with this form attached.

Your involvement in this project would involve the completion of a brief eighteen question survey. If you agree to participate an email with the survey attached will follow within the next 24 hours. It is requested that you complete and return the survey within 24 hours of receipt. Your total estimated time commitment for the survey is approximately fifteen minutes.

While electronic communication is preferred for timeliness of data collection, please be aware that all materials are available via standard mail. Simply respond to this email with your full

### Form 3.4 Cont.

name and mailing address and your preference for standard mail communication and the documents will be sent directly to you with a stamped return envelope included.

#### **Voluntary Nature of Participation**

Participation in this research is completely voluntary. As a recent graduate of UIUC, you may withdraw from this study at any time with no effect on your relationship with any parties associated with this research or the University of Illinois. To withdraw at any time, contact either Charles Holmes: cholmes1@illinois.edu or 217-649-9988 or Dr. Reginald Alston: alston@illinois.edu or 217-333-2307. You must be at least 18 years of age to participate in this study.

#### **Confidentiality**

In this study, every effort will be made not to reveal personally identifiable information in publications based on this research. To accomplish this, no records will be created or retained that could link you to personally identifiable descriptions, paraphrases, or quotations. Statements you make may be presented without specific reference to you, referenced only by pseudonym, or combined anonymously with the actions and words of other participants.

#### **Risks and Benefits**

Your participation in this project should not involve risks beyond those of ordinary life. Although the researchers will protect the confidentiality of your responses to the greatest extent possible, please be aware all electronic surveys and interviews collected will be printed and stored in a file cabinet, followed by the original email with identifiable information being deleted/destroyed. You will not be paid for your participation in this research project, nor is it expected that your participation will bring you any tangible benefits. It is hoped that upon completion of this research, that the data collected will be disseminated to health and education communities via journal publications and conferences that will benefit from a greater understanding of how college-level health courses and curriculums impact others.

Form 3.4 Cont.

**Contact Information**

If you have any questions, concerns, or complaints about this research project, please contact the Responsible Project Investigator (RPI) or Project Investigator (PI):

Reginald Alston, Community Health: Rehabilitation, 217-333-2307  
or alston@illinois.edu (RPI)

Charles Holmes, Community Health: Education, 217-649-9988  
or cholmes1@illinois.edu (PI)

If you have any questions about your rights as a participant in this study, please contact the University of Illinois Institutional Review Board at Suite 203, 528 East Green Street Champaign, IL 61820, 217-333-2670 (You may call collect if you identify yourself as a research subject) or via email at irb@illinois.edu.

**Consent Statement**

Please recall that standard mail is available if you are uncomfortable using electronic media.

If you choose not to participate please simply reply with 'Not Interested' and you will receive no further contact from the RPI or PI.

If you agree to be surveyed, please return this email consent form with your name typed in the **RED** text below. By typing your name in the box below it will be seen as an electronic signature.

I, [ **Please Type Name Here** ] have read and understood this consent document and agree to be surveyed via email.

Form 5.1

*Requirements for both Kinesiology and Teacher Certification*

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Hours	Kinesiology Core Requirements
3	KIN 122 - Physical Activity and Health
1	KIN 125 - Introduction to Kinesiology
2	KIN 130 - Analysis of Basic Movement
3	CHLH 101 - Intro to Public Health
3	KIN 140 - Social Science of Human Movement
<b>3</b>	<b>KIN 150 - Bioscience of Human Movement</b>
3	KIN 240 - Soc & Psych of Phys Activity
3	KIN 257 - Coordination, Control, & Skill
3	KIN 262 - Motor Develop, Growth & Form
<b>3</b>	<b>KIN 352 - Bioenergetics of Movement</b>
<b>3</b>	<b>KIN 355 - Biomechanics of Human Movement</b>

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30 Hours

*Requirements for Teaching Certification*

Hours	Required Electives and Correlate Area Studies
3	KIN 360 - Adapted Physical Education
3	KIN 361 - Curriculum in Grades K-6
3	KIN 362 - Curriculum in Grades 7-12
3	KIN 363 - Instructional Strategies in PE
3	KIN 364 - Exper in the Common School
3	KIN 401 - Measure & Eval in Kinesiology
3	KIN 460 - Technology & Pedagogical KINES
5	KIN 131-136 Teacher certification students need a total of 5 courses from this sequence. (See undergraduate academic advisor)
1	CI 473 - Literacy in Content Areas
3	EPS 201 - Foundations of Education
3	EPSY 201 - Educational Psychology
8	EDPR 438 - Ed Prac in Sp Fields in Ele Ed
8	EDPR 442 - Ed Prac in Secondary Ed

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49 Hours

\* Information collected from (University of Illinois at Urbana-Champaign, 2011)

Form 5.2

*Recommended Health Education Course Work*

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Hours	<i>Health Education Courses</i>
2	CHLH 206 - Human Sexuality
2	CHLH 243 - Drug Use and Abuse
3	FSHN 120 - Contemporary Nutrition

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7 Hours

\* Information collected from (University of Illinois at Urbana-Champaign, 2011)

**APPENDIX B: TABLES**

Table 1

Two-Way ANOVA with Interaction for University and Student Status

*Dependent Variable Question 7: Confidence Teaching Physical Fitness*

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	6.2032592	1.2406518	1.65	0.1470
Error	277	208.3126418	0.7520312		
Corrected Total	282	214.5159011			

R-Square	Coeff Var	Root MSE	Question 7 Mean
0.028917	20.78043	0.867197	4.173145

Source	DF	Type I SS	Mean Square	F Value	Pr > F
University	2	3.36646403	1.68323202	2.24	0.1086
Student Status	1	0.82511075	0.82511075	1.10	0.2958
Universit^Student Status	2	2.01168443	1.00584222	1.34	0.2642

Source	DF	Type III SS	Mean Square	F Value	Pr > F
University	2	3.84501480	1.92250740	2.56	0.0794
Student Status	1	0.12919178	0.12919178	0.17	0.6788
Universit^Student Status	2	2.01168443	1.00584222	1.34	0.2642

Notes:

\* University = University of Illinois + Illinois State University + Eastern Illinois University

\*\* Students Status = Current Students + Recent Graduates

\*\*\* Universit^Student\_St = University + Student Status

Table 2

Two-Way ANOVA with Interaction for University and Student Status

*Dependent Variable Question 8: Confidence Teaching Obesity Prevention*

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	55.5347823	11.1069565	14.15	<.0001
Error	277	217.3839456	0.7847796		
Corrected Total	282	272.9187279			

R-Square	Coeff Var	Root MSE	Question 8 Mean
0.203485	23.29958	0.885878	3.802120

Source	DF	Type I SS	Mean Square	F Value	Pr > F
University	2	4.47769332	2.23884666	2.85	0.0594
Student Status	1	44.56596916	44.56596916	56.79	<.0001
Universit^Student Status	2	6.49111983	3.24555991	4.14	0.0170

Source	DF	Type III SS	Mean Square	F Value	Pr > F
University	2	6.27311116	3.13655558	4.00	0.0194
Student Status	1	35.36532588	35.36532588	45.06	<.0001
Universit^Student Status	2	6.49111983	3.24555991	4.14	0.0170

Notes:

\* University = University of Illinois + Illinois State University + Eastern Illinois University

\*\* Students Status = Current Students + Recent Graduates

\*\*\* Universit^Student\_St = University + Student Status

Table 3

Two-Way ANOVA with Interaction for University and Student Status

*Dependent Variable Question 9: Confidence Teaching Nutrition Information*

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	78.3029348	15.6605870	20.50	<.0001
Error	277	211.5769238	0.7638156		
Corrected Total	282	289.8798587			

R-Square	Coeff Var	Root MSE	Question 9 Mean
0.270122	25.71021	0.873965	3.399293

Source	DF	Type I SS	Mean Square	F Value	Pr > F
University	2	4.05033668	2.02516834	2.65	0.0723
Student Status	1	71.59200903	71.59200903	93.73	<.0001
Universit^Student Status	2	2.66058913	1.33029457	1.74	0.1771

Source	DF	Type III SS	Mean Square	F Value	Pr > F
University	2	3.67579780	1.83789890	2.41	0.0920
Student Status	1	52.56628324	52.56628324	68.82	<.0001
Universit^Student Status	2	2.66058913	1.33029457	1.74	0.1771

Notes:

\* University = University of Illinois + Illinois State University + Eastern Illinois University

\*\* Students Status = Current Students + Recent Graduates

\*\*\* Universit^Student\_St = University + Student Status



Table 4

Two-Way ANOVA with Interaction for University and Student Status

*Dependent Variable Question 10: Confidence Teaching Drug Prevention*

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	141.3532733	28.2706547	35.66	<.0001
Error	277	219.5937232	0.7927571		
Corrected Total	282	360.9469965			

  

R-Square	Coeff Var	Root MSE	Question 10 Mean
0.391618	27.15242	0.890369	3.279152

  

Source	DF	Type I SS	Mean Square	F Value	Pr > F
University	2	6.7068522	3.3534261	4.23	0.0155
Student Status	1	125.9277632	125.9277632	158.85	<.0001
Universit^Student Status	2	8.7186579	4.3593289	5.50	0.0046

  

Source	DF	Type III SS	Mean Square	F Value	Pr > F
University	2	8.36865859	4.18432929	5.28	0.0056
Student Status	1	98.99838270	98.99838270	124.88	<.0001
Universit^Student Status	2	8.71865787	4.35932894	5.50	0.0046

Notes:

\* University = University of Illinois + Illinois State University + Eastern Illinois University

\*\* Students Status = Current Students + Recent Graduates

\*\*\* Universit^Student\_St = University + Student Status

Table 5

Two-Way ANOVA with Interaction for University and Student Status

*Dependent Variable Question 11: Confidence Teaching Human Sexuality*

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	5	53.8550781	10.7710156	11.82	<.0001
Error	277	252.5053460	0.9115716		
Corrected Total	282	306.3604240			

R-Square	Coeff Var	Root MSE	Question 11 Mean
0.175790	26.99279	0.954763	3.537102

Source	DF	Type I SS	Mean Square	F Value	Pr > F
University	2	13.71051568	6.85525784	7.52	0.0007
Student Status	1	24.87498083	24.87498083	27.29	<.0001
Universit^Student Status	2	15.26958155	7.63479078	8.38	0.0003

Source	DF	Type III SS	Mean Square	F Value	Pr > F
University	2	15.30505433	7.65252717	8.39	0.0003
Student Status	1	16.16098200	16.16098200	17.73	<.0001
Universit^Student Status	2	15.26958155	7.63479078	8.38	0.0003

Notes:

\* University = University of Illinois + Illinois State University + Eastern Illinois University

\*\* Students Status = Current Students + Recent Graduates

\*\*\* Universit^Student\_St = University + Student Status

Table 6

## Testing the Equality of Means for Current Students and Recent Graduates

*Question 7: (Confidence Teaching Physical Fitness)*

Student Status	N	Mean	Std Dev	Std Err	Minimum	Maximum
Current	163	4.2209	0.8680	0.0680	1.0000	5.0000
Recent	120	4.1083	0.8773	0.0801	2.0000	5.0000
Diff (1-2)		0.1125	0.8719	0.1049		

  

Student Status	Method	Mean	95% CL Mean	Std Dev	95% CL Std Dev
Current		4.2209	4.0866 4.3551	0.8680	0.7829 0.9740
Recent		4.1083	3.9498 4.2669	0.8773	0.7786 1.0049
Diff (1-2)	Pooled	0.1125	-0.0939 0.3190	0.8719	0.8054 0.9505
Diff (1-2)	Satterthwaite	0.1125	-0.0944 0.3194		

  

Method	Variances	DF	t Value	Pr >  t
Pooled	Equal	281	1.07	0.2842
Satterthwaite	Unequal	255.02	1.07	0.2851

  

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folded F	119	162	1.02	0.8935

Notes:

\* If Folded F P-Value &gt;.05 then must use Pooled or Equal Variance

\*\* If Folded F P-Value &lt;.05 then must use Satterthwaite or Unequal

Table 7

## Testing the Equality of Means for Current Students and Recent Graduates

*Question 8: (Confidence Teaching Obesity Prevention)*

Student Status	N	Mean	Std Dev	Std Err	Minimum	Maximum
Current	163	4.1411	0.8453	0.0662	1.0000	5.0000
Recent	120	3.3417	0.9744	0.0890	1.0000	5.0000
Diff (1-2)		0.7994	0.9022	0.1085		

  

Student Status	Method	Mean	95% CL Mean	Std Dev	95% CL Std Dev
Current		4.1411	4.0104 4.2718	0.8453	0.7624 0.9486
Recent		3.3417	3.1655 3.5178	0.9744	0.8648 1.1161
Diff (1-2)	Pooled	0.7994	0.5858 1.0131	0.9022	0.8334 0.9836
Diff (1-2)	Satterthwaite	0.7994	0.5810 1.0179		

  

Method	Variances	DF	t Value	Pr >  t
Pooled	Equal	281	7.37	<.0001
Satterthwaite	Unequal	234.51	7.21	<.0001

  

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folded F	119	162	1.33	0.0929

Notes:

\* If Folded F P-Value &gt;.05 then must use Pooled or Equal Variance

\*\* If Folded F P-Value &lt;.05 then must use Satterthwaite or Unequal

Table 8

## Testing the Equality of Means for Current Students and Recent Graduates

*Question 9: (Confidence Teaching Nutrition Information)*

Student Status	N	Mean	Std Dev	Std Err	Minimum	Maximum
Current	163	3.8282	0.8861	0.0694	1.0000	5.0000
Recent	120	2.8167	0.8791	0.0803	1.0000	5.0000
Diff (1-2)		1.0116	0.8831	0.1062		

  

Student Status	Method	Mean	95% CL Mean	Std Dev	95% CL Std Dev
Current		3.8282	3.6912 3.9653	0.8861	0.7992 0.9943
Recent		2.8167	2.6578 2.9756	0.8791	0.7802 1.0070
Diff (1-2)	Pooled	1.0116	0.8025 1.2207	0.8831	0.8158 0.9627
Diff (1-2)	Satterthwaite	1.0116	0.8026 1.2205		

  

Method	Variances	DF	t Value	Pr >  t
Pooled	Equal	281	9.52	<.0001
Satterthwaite	Unequal	257.69	9.53	<.0001

  

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folded F	162	119	1.02	0.9334

Notes:

\* If Folded F P-Value &gt;.05 then must use Pooled or Equal Variance

\*\* If Folded F P-Value &lt;.05 then must use Satterthwaite or Unequal

Table 9

## Testing the Equality of Means for Current Students and Recent Graduates

*Question 10: (Confidence Teaching Drug Prevention)*

Student Status	N	Mean	Std Dev	Std Err	Minimum	Maximum
Current	163	3.8466	0.9531	0.0747	1.0000	5.0000
Recent	120	2.5083	0.8696	0.0794	1.0000	5.0000
Diff (1-2)		1.3383	0.9187	0.1105		

  

Student Status	Method	Mean	95% CL Mean	Std Dev	95% CL Std Dev
Current		3.8466	3.6992 3.9940	0.9531	0.8597 1.0695
Recent		2.5083	2.3511 2.6655	0.8696	0.7718 0.9961
Diff (1-2)	Pooled	1.3383	1.1208 1.5558	0.9187	0.8486 1.0015
Diff (1-2)	Satterthwaite	1.3383	1.1237 1.5528		

  

Method	Variances	DF	t Value	Pr >  t
Pooled	Equal	281	12.11	<.0001
Satterthwaite	Unequal	268.37	12.28	<.0001

  

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folded F	162	119	1.20	0.2902

Notes:

\* If Folded F P-Value &gt;.05 then must use Pooled or Equal Variance

\*\* If Folded F P-Value &lt;.05 then must use Satterthwaite or Unequal

Table 10

## Testing the Equality of Means for Current Students and Recent Graduates

*Question 11: (Confidence Teaching Human Sexuality)*

Student Status	N	Mean	Std Dev	Std Err	Minimum	Maximum
Current	163	3.7853	1.0107	0.0792	1.0000	5.0000
Recent	120	3.2000	0.9924	0.0906	1.0000	5.0000
Diff (1-2)		0.5853	1.0030	0.1206		

  

Student Status	Method	Mean	95% CL Mean	Std Dev	95% CL Std Dev
Current		3.7853	3.6289 3.9416	1.0107	0.9116 1.1342
Recent		3.2000	3.0206 3.3794	0.9924	0.8808 1.1367
Diff (1-2)	Pooled	0.5853	0.3478 0.8228	1.0030	0.9265 1.0934
Diff (1-2)	Satterthwaite	0.5853	0.3484 0.8222		

  

Method	Variances	DF	t Value	Pr >  t
Pooled	Equal	281	4.85	<.0001
Satterthwaite	Unequal	259.13	4.86	<.0001

  

Equality of Variances				
Method	Num DF	Den DF	F Value	Pr > F
Folded F	162	119	1.04	0.8379

Notes:

\* If Folded F P-Value &gt;.05 then must use Pooled or Equal Variance

\*\* If Folded F P-Value &lt;.05 then must use Satterthwaite or Unequal

Table 11

## Scale Reliability for Question 7 – Question 11

*Cronbach Coefficient Test*

Variable	N	Mean	Std Dev	Sum	Minimum	Maximum
Question_7	283	4.17314	0.87218	1181	1.00000	5.00000
Question_8	283	3.80212	0.98377	1076	1.00000	5.00000
Question_9	283	3.39929	1.01388	962.00000	1.00000	5.00000
Question_10	283	3.27915	1.13135	928.00000	1.00000	5.00000
Question_11	283	3.53710	1.04230	1001	1.00000	5.00000

## Cronbach Coefficient Alpha

Variables	Alpha
Raw	0.783113
Standardized	0.779602

## Cronbach Coefficient Alpha with Deleted Variable

Deleted Variable	Raw Variables		Standardized Variables	
	Correlation with Total	Alpha	Correlation with Total	Alpha
Question_7	0.372234	0.795743	0.374781	0.795979
Question_8	0.596666	0.730429	0.596292	0.724325
Question_9	0.633975	0.717150	0.626620	0.713855
Question_10	0.624753	0.719733	0.617056	0.717174
Question_11	0.570711	0.738645	0.565186	0.734896

Notes:

\*  $\geq .70$  considered acceptable

\*\* Raw = Based upon item correlation. The stronger the items are inter-related, the more likely the test is consistent

\*\*\* Standardized = Based upon item covariance. The higher the correlation coefficient the higher the covariance.



Table 12

*Testing the Equality of Instructional Confidence Means for Current Students and Recent Graduates*

Student Status	N	Mean	Std Dev	Std Err	Minimum	Maximum
Current	163	3.9644	0.7490	0.0587	1.0000	5.0000
Recent	120	3.1950	0.4388	0.0401	2.2000	4.2000
Diff (1-2)		0.7694	0.6364	0.0765		

  

Student Status	Method	Mean	95% CL Mean	Std Dev	95% CL Std Dev
Current		3.9644	3.8486 4.0803	0.7490	0.6755 0.8404
Recent		3.1950	3.1157 3.2743	0.4388	0.3895 0.5027
Diff (1-2)	Pooled	0.7694	0.6187 0.9201	0.6364	0.5878 0.6937
Diff (1-2)	Satterthwaite	0.7694	0.6296 0.9093		

  

Method	Variances	DF	t Value	Pr >  t
Pooled	Equal	281	10.05	<.0001
Satterthwaite	Unequal	268.76	10.83	<.0001

  

Equality of Variances

Method	Num DF	Den DF	F Value	Pr > F
Folded F	162	119	2.91	<.0001

Notes:

\* If Folded F P-Value >.05 then must use Pooled or Equal Variance

\*\* If Folded F P-Value <.05 then must use Satterthwaite or Unequal