Relationships of Self-Direction and Attitude toward Continuing Education in Community College Allied Health Programs

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Degree

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Dedication

This dissertation is dedicated to my husband and
best friend, Jeremy, who has always supported me..

In addition, I dedicate this dissertation to my children, Michael and Tyler Hall.

Acknowledgements

I need to thank my family. My husband, Jeremy, who has supported all of my endeavors over the years and helped provide valuable input. My children, Michael and Tyler, have provided a lot of encouragement and support. I am also grateful for my parents, Carl and Linda Henline, for placing a strong importance on the value of education.

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Abstract

Continuing education is a vital component in health care because professionals operate in a complex discipline that is continuously evolving. Ongoing social, technological, and medical changes present many trials and challenges to professionals in health care (Cadorin, Suter, Dante, Williamson, Devetti, & Palese, 2012). Additionally, health care professionals who acknowledge continuing education as a lifelong exercise are well suited to remain well-informed of innovative developments (Cadorin et al., 2012; Evans, Gallatin, Taylor, & Brodnik, 2008; El-Gilany & Abusaad, 2013; Levett-Jones, 2005). In health care, self-directed learning can contribute to increased confidence, independence, inspiration, and growth of skills (O'Shea, 2003; Yuan et al., 2012). Individuals with the capability to be highly self-directed can utilize this to discern any level of personal weakness then work to rectify the deficiency (Avdal, 2013; Yuan et al., 2012).

The study's purpose was to explore relationships among self-directed learning and attitude toward continuing education among students participating in community college Allied Health programs. For this study, 113 students in Allied Health degree programs at a southeastern community college participated. Respondents completed Stockdale's (2003) Personal Responsibility Orientation-Self Directed Learning Scale (PRO-SDLS), Blunt and Yang's (2002) Revised Attitude toward Continuing Education Scale (RAACES), as well as answered two demographic questions (age and class rank).

The results revealed that level of self-direction has a significant relationship between several factors and items related to attitude toward continuing education. One of the strongest findings was that participants with high levels of self-direction viewed adult education as a way to make better use of their lives. The information resulting from this study will enhance the current literature and allow for better understanding of self-directed learning principles and their

relationship with attitude toward continuing education. Applying this information in Allied Health programs may have a substantial effect on how faculty facilitates self-directed learning principles in their area of study (El-Gilnay & Abusaad, 2013). Future recommendations for research comprise of a duplication of the study using a more diverse and increased sample size across multiple community colleges and conducting other studies that would examine introducing self-directed learning principles into Allied Health programs.

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Chapter 1

Introduction

Continuing education is a critical component in health care because professionals work in a complex discipline that is constantly evolving. Furthermore, ongoing social, technological, and medical changes present many trials and challenges to health care workers (Cadorin et al., 2012). Due to the increasing complexity of health care systems, it is critical for health professionals to enhance knowledge and improve clinical practice (Chiu, Tsai, & Chiang, 2013). Most health professionals are required to complete some form of mandated continuing education for licensure in a majority of health care areas in order to ensure high standards and compliance (Asadoorian & Batty, 2005; Cervero & Daley, 2010; Clark, Draper, & Rogers, 2015; Gallaher, 2007; Govranos & Newton, 2014; Henwood & Flinton, 2012; Lazarus, Permaloff, & Dickson, 2002).

Continuing education is described as any activity that facilitates learning within the work environment (Billett, 2004; Osmond, 2003). Health care professionals are also required to maintain the trust and confidence of society in addition to practice in a competent manner (James & Francis, 2011). Additionally, health care workers that participate in continuing education activities enhance the outcome of patient care (Clark et al., 2015; Fox & Bennett, 1998; Gibbs, 2011; Henwood et al., 2004). Thus, regulatory agencies have been pressured by the public to implement policies that promote and ensure competency for safe practices in health care professions (Gallagher 2006; Lazarus et al., 2002). A wide variety of professional organizations accept continuing education credits as a demonstration of professional development and maintenance of competence (Clark et al., 2015; James & Francis, 2011). The benefits of participating in continuing education include improved workforce skills, enhanced career development, motivation, confidence, and personal communication abilities (Avdal, 2013;

Gibbs, 2011; Hewitt-Taylor, 2001; Lunyk-Child et al., 2001; O'Shea, 2003; Yuan, Williams, Fang, & Pang, 2012).

The Institute of Medicine (IOM) published a report in 2010 with the conclusion that the professional health care workforce is ill-prepared to guarantee delivery of the highest quality patient care and safety. Instead, researchers found that health professionals tend to concentrate on fulfilling regulatory requirements instead of diversifying their skills or filling personal knowledge gaps (IOM, 2010). There are differing attitudes about completing continuing education tasks. Attitude toward participation depends on the individual, environment, and a vast number of negative and/or positive factors that influence the process (Henwood & Taket, 2008). Many health care workers are receptive to professional development and feel that it is necessary for their respective careers and patient protection (James & Francis, 2011). Advocates for compulsory continuing education argue that mandating it is intended to protect the populace from health care workers who do not voluntarily participate or practice in the field, while also increasing professionalism and providing public confidence in the profession (Henwood, Yielder, & Flinton, 2004). Some health professionals contest the worth of compulsory continuing education and believe that it takes away personal freedom (Lazarus et al., 2002). Because of constraints such as time, money, and geographic location many health professionals are unable or find it challenging to attend traditional seminars, classes, or other educational methods (Govranos & Newton, 2014; Henwood et al., 2004; Henwood & Flinton, 2012; Lazarus et al., 2002). Despite these obstacles, many health care workers choose to participate in continuing education options that can be defined as self-directed (Karaman, Kucuk, & Aydemir, 2014; Song & Hill, 2007).

Self-directed learning is deemed a manner where individuals establish personal goals, find resources, select the process, and review development through critical reflection (Brookfield, 1995). Self-directed learning examples can be found in history as far back as Socrates in Rome (Merriam & Brockett, 2007). Since its identification, there have been multiple definitions presented by adult education theorists. Caffarella (1993) describes self-directed learning (SDL) as concentrated on individual self-development, while the learner assumes principal responsibility for learning. Health care professionals who accept continuing education as a lifelong practice are well suited to keep abreast of new advancements (Cadorin et al., 2012; Evans, Gallatin, Taylor, & Brodnik, 2008; El-Gilany & Abusaad, 2013; Levett-Jones, 2005). Therefore, there is an association between self-directed learning and continuing education. Individuals that are active, self-directed learners will be better equipped as employees to react to future requirements and obtain the essential skills and knowledge to provide better service (Boyer, Edmondson, Artis, & Fleming, 2014). To summarize, self-directed health care workers can keep up with changing requirements and be more capable of consistently delivering high quality patient care.

In the realm of continuing education, the central theme is that adults need to have better control over their education. According to Knowles (1980), one of the substantial expectations in andragogy is that as individuals develop "their self-concept moves from one of being a dependent personality toward being a self-directed human being…they accumulate a reservoir of experience that become an increasingly rich resource for learning" (p. 44-45). Health care professionals are highly specialized and knowledgeable adults. Thus, some will be receptive to self-directed learning options when completing their continuing education. Self-directed learning is frequently the chosen method that adults use to learn (Merriam & Brockett, 2007).

There are numerous positive features of self-directed learning, especially in health care. Individuals who participate in self-directed learning are in an education mode; "people with this disposition are always striving for improvement themselves…They seize problems, situations, tensions, conflicts, and circumstances as valuable opportunities to learn" (Costa & Kallick, 2004, p. 15). Health professionals must have developed or acquired self-directed learning skills to meet necessary changes in modern health care (O'Shea, 2003). It is not possible for formal education programs to thoroughly prepare graduates for the complex experiences encountered in the professional arena. Health professionals must be self-directed learners in order to gain or advance the skills and information required to succeed. Bonnel and Smith (2010) stated that "faculty can no longer hope to convey all clinical information to students in the classroom. At best, faculty can assist students in learning broad concepts and then prepare them to keep up with the changing details" (p. 15-16). David Sackett has stated "half of what you'll learn in medical school will be shown to be either wrong or out of date within 5 years of graduation; the trouble is that nobody can tell you which half, so the important thing to learn is how to learn on your own" (Daily & Landis, 2014, p. 2066). Because of constantly changing technology, policy, demographics, and illness trends; health care professionals who are self-directed will be better situated to stay current in their field (O'Shea, 2003).

Statement of Problem

This study will further investigate the relationships of self-direction and attitude toward continuing education in community college Allied Health programs. A deficiency in current research exists concerning level of self-direction and attitude toward continuing education focused on students in Allied Health programs. The nursing profession in the past few decades has recognized the need for self-direction and began to incorporate it into their educational

programs (El-Gilnay & Abusaad, 2013). However, in the literature gaps are still present relating to the topic of continuing education (Gallagher, 2007). Students are repeatedly exposed to the premise that teachers are to be viewed as experts who are there to provide their knowledge; "From the first grade on, most students are trained to do what they are told. They are motivated from the outside, managed from the outside, and evaluated from the outside…" (Grow, 1991, p. 58). These recipients of traditional education can acquire patterns of learning and motivation that are extrinsic or in response to simply fulfilling a course objective (Bolhuis, 2003). If self-directed learning techniques are incorporated improperly or at the wrong time, it may create discord and apprehension for the student unless they are prepared (Levett-Jones, 2005; Yuan et al., 2012). Therefore, health educators are challenged to organize and implement strategies that will best accommodate the students, steadily promote autonomy, and self-directed learning principles (Fisher, King, & Tague, 2001).

Attitude toward continuing education activities is also important. There are differing opinions concerning the importance of continuing education, particularly if it is mandated by the profession. Blunt and Yang (2002) found that the intrinsic value of a continuing education activity plays a main role in whether or not an individual actively participates in learning. It would be important for educators to understand relationships between self-direction and attitude toward continuing education while working with students in Allied Health programs. Health care educators have a well-defined role in promoting effective learning, but they also need to understand and merge what techniques will influence student learning and can be adequately transferred to the workplace setting (Clark et al., 2015). Therefore, it is critical to recognize the accountability of students and educators to facilitate essential learning skill development (Cadorin et al., 2012). If level of self-direction does influence attitude toward continuing

education, educators should consider implementing teaching strategies in allied health courses (Yuan et al., 2012). In this study, the problem examined is the lack of information focused on the relationships between level of self-directed learning and attitude toward continuing education in community college Allied Health programs.

Purpose of the Study

Formal health care professional programs strive to increase knowledge and competency of beginning practitioners to ensure that the highest level of patient care is always delivered (El-Gilany & Abusaad, 2013; Horiuchi, Yaju, Koyo, Sakyo, & Nakayama, 2009; Levett-Jones, 2005; Yuan et al., 2012). Another goal is to prepare graduates with developed skills and positive attitudes that will continue to serve them well beyond the requirements of a particular college course or program (El-Gilany & Abusaad, 2013). This study's purpose is to explore relationships between self-directed learning and attitude toward continuing education among students participating in community college Allied Health programs.

The results from this study may expand the amount of information in the literature concerning self-direction and attitude toward continuing education. Greater awareness of the relationships between self-directed learning and attitude toward continuing education could increase the value for Allied Health college personnel, including faculty and administrators. Enhanced understanding could also lead to increased familiarity and consciousness of assessing student self-direction and employing teaching strategies that will best suit students (Cheng, Kuo, Lin, & Lee-Hsieh, 2010; El-Gilany & Abusaad, 2013; Fisher et al., 2001; Yuan et al., 2012).

For this study, a correlational research design is used to investigate relationships between perceived levels of self-direction and attitude toward continuing education in Allied Health programs at a community college. Data was collected from entering freshman, students

transitioning from first to second year (mid-program), and recently graduated second-year students to explore relationships between class rank and self-direction or attitude toward continuing education. Additionally, the demographic, age, was collected to determine the presence of a connection with self-direction or attitude toward continuing education. The subsequent research questions will guide the proposed study:

1. To what degree does a relationship between perceived levels of self-direction and attitude toward continuing education among community college students in Allied Health programs exist?
2. To what degree does perceived levels of self-direction or attitude toward continuing education differ by class rank among community college students in Allied Health programs?
3. To what degree does the relationship between perceived levels of self-direction or attitude toward continuing education and age among community college students in Allied Health programs exist?

Theoretical Framework

The areas of self-directed learning (SDL) and attitude toward continuing education were the focus of this study. The following sections identify the theoretical framework founded on adult learning theories and elements influencing attitude toward continuing education. The framework and associated studies are further reviewed in Chapter Two.

Self-Directed Learning Framework

At one point or another, individuals will undertake learning a new skill or acquire knowledge. These activities may be completed independently and can be focused on personal endeavors or completed in the confine of formal education (Candy, 1991). This scenario of

creating new knowledge can be defined as self-directed learning. In the area of adult education, self-directed learning has been influential for more than three decades (Ellinger, 2004). Adult educators have presented numerous descriptions for self-directed learning, but the common theme encompasses any method that includes individuals taking the initiative and accountability for personal educational activities (Brockett & Hiemstra, 1991; Ellinger, 2004). Readiness for self-directed learning signifies the degree that an individual displays required attitude, skill, and personality traits (Guglielmino, 1977; Yuan et al., 2012). An individual's self-direction exists on a continuum and is existent to some degree in everyone at differing levels (Fisher et al., 2001). People operate in different domains at various times, so their level of self-direction may differ depending upon their confidence in a "particular subject at a particular time" (Jennings, 2007, p. 520).

Personal Responsibility Orientation (PRO) model. The Personal Responsibility (PRO) model is a method to help move beyond the notion that self-direction is strictly an instructional concept and established by Brockett and Hiemstra (1991). It is based upon the belief that self-directed learning has two separate components. The primary part is associated by what many adult educators view as the most common definition found in related literature; "a process in which a learner assumes primary responsibility for planning, implementing, and evaluating the learning process" (Brockett & Hiemstra, 1991, p. 24). The next element of self-directed learning is associated to the individuals wish or inclination for learning while assuming responsibility. The uncertainty of an individual's personality playing a role in educational activity participation is addressed in the second part of the PRO model. Oddi (1986) previously studied the concept of how self-directed learning was connected to an individual's personality through the creation of the Oddi Continuing Learning Inventory (OCLI).

Brockett and Hiemstra's PRO model (1991) takes both of the factors associated with self-directed learning and combines them (instructional process and personality). It allows the complex characteristics of self-directed learning to be addressed when referring to motivation and completion of educational activities. The central concept of the PRO model is that an individual will accept personal responsibility for their learning; "individuals assume ownership for their own thoughts and actions" (Brockett & Hiemstra, 1991, p. 26). This portion is vital because many individuals may not be able to control their environment, but they manage reactions. For example, an individual may be prohibited from being able to afford specialized woodworking or pottery classes, but that does not stop them from researching or trying to create things independently at home. It must be noted that individuals will contain varying degrees of "willingness to accept responsibility for themselves as learners" (Brockett & Hiemstra, 1991, p. 27). Two components or characteristics stem from the central concept of personal responsibility and are connected to self-direction in learning as shown (Figure 1).

Self-directed learning and the teaching-learning transaction is a PRO model component. It includes items that are considered external factors. Some examples would be "needs assessment, evaluation, learning resources, facilitator roles and skills, and independent study" (Brockett & Hiemstra, 1991, p. 28). The additional element is learner self-direction and is related to internal individual factors such as level of self-direction. Self-direction is the link between the external and internal factors as well as level of personal responsibility.

Susan Stockdale (2003) created the Personal Responsibility Orientation to Self-Direction in Learning Scale (PRO-SDLS) with the primary goal of creating an instrument that would accurately measure self-directness of college students focused on the Personal Responsibility



Figure 1. Personal Responsibility Orientation (PRO) model (Brockett & Hiemstra, 1991, p. 25). Reproduced with permission.

(PRO) model. The PRO-SDLS contains 25 items that represent one of four factors, which are initiative, control, self-efficacy, and motivation (Stockdale and Brockett, 2011).

Attitude toward Continuing Education Framework

Attitudes are complex and effect participation in specific continuing education endeavors. Continuing education is identified as actions that enable learning in the workplace (Billett, 2004; Osmond, 2003). It can make a difference whether someone enrolls in an educational activity because it is imposed upon them by a mandate versus the individual being personally interested (Francke, Garssen, & Abu-Saad, 1995). Some health care professionals challenge the value of mandatory continuing education (Lazarus et al., 2002). They argue that any form of compulsory education, particularly for relicensure in the health profession, is not consistent with the nature of both being a professional and an adult (Morrison, 1992). Even though most professions require some form of continuing education to meet licensing requirements, not all health care workers agree with the mandatory requirement. Attitude toward participation depends on the individual, environment, and a vast number of negative or positive factors that influence the process (Henwood & Taket, 2008).

A three-factor model of attitudes was acknowledged by Blunt and Yang (2002) when they developed the Revised Attitude toward Continuing Education Scale (RAACES). This causal model was the product of the revision of Darkenwald and Hayes's (1988) Adult Attitude toward Continuing Education Scale (AACES). The AACES was designed to measure adult attitudes and their relationship to behavior regarding the completion of continuing education activities. Rokeach (1966) suggested a two-attitude theory, which was the basis of the AACES instrument. Rokeach proposed that there are two basic types of attitudes: attitude-toward-object and attitude-toward-situations when the object is met. Attitude is derived as "a relatively enduring

organization of beliefs about an object or situation predisposing one to respond in some preferential manner" (Rokeach, 1966, p. 530). Attitudes toward an object-within-a-situation depend on the specific views activated by the attitude-object and the predisposition stimulated via the situation (Rockeach, 1966). Blunt and Yang (2002) were of the opinion that "a rigorous and independent replication and assessment of the scale's factor structure and psychometric properties" (p. 300) had not been published concerning AACES. It was identified that there were contradictory ideas concerning the scale's factor configuration as seen in the published studies by Darkenwald and Hayes in 1988 and then in 1990.

Therefore, Blunt and Yang (2002) believed that two initial reports on the AACES instrument and its measurement properties did not include "prior empirical work indicating attitude toward continuing education was highly likely to be multifactorial" (p. 302). Therefore, AACES was created upon a two-attitude conceptual framework and confirming this portion was neglected. The RAACES instrument generated a three-factor model of attitude toward continuing education including enjoyment of learning, intrinsic value, and perceived importance (Figure 2).

Enjoyment of learning was "interpreted as primarily an indicator of an affect component of attitude that had direct influence on participation behavior" (Blunt & Yang, 2002, p. 312). The factors of intrinsic value and perceived importance have indirect influences on participation via the affect factor. Blunt and Yang (2002) indicated that intrinsic value plays a critical part in the decision-making process of whether or not an adult participates in continuing education activities.

Significance of the Study

Health care workers that take part in continuing education improve the level of patient care delivery (Clark et al., 2015; Fox & Bennett, 1998; Gibbs, 2011; Govranos & Newton, 2013;

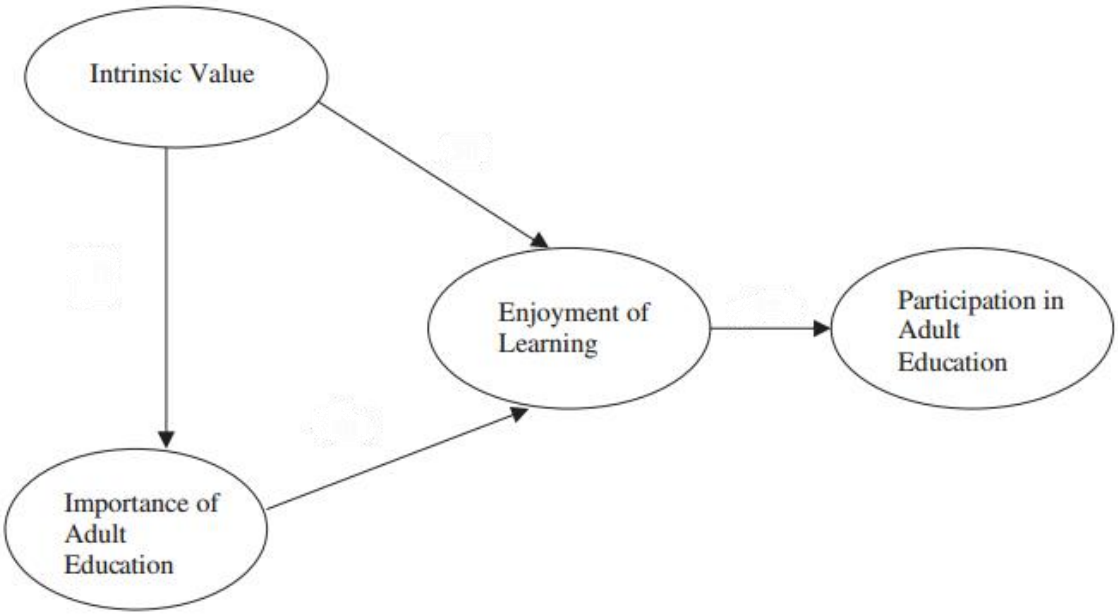


Figure 2. Causal model of adult attitudes toward adult education and participation behavior (Blunt and Yang, 2002, p. 311).

Henwood et al., 2004). Professional health programs also play a large role in "preparing competent graduates who will successfully make the transition to the world of professional practice" (Williams, 2001, p. 85). It is serious for health care workers to be equipped to seek, analyze, and apply new knowledge and skills, as innovative technology or new health issues are introduced into the field of medicine (Avdal, 2013; Francke et al., 1995; O'Shea, 2003). Health professionals that are incapable of controlling their education will not have the skills needed to succeed in health care (O'Shea, 2003).

Govranos and Newton (2014) found that it is crucial for health care workers to be adaptable lifelong learners dedicated to continuing education. Additionally, health care professionals who acknowledge continuing education as a lifelong exercise are suitable to remain up-to-date of innovative developments (Cadorin et al., 2012; Evans, Gallatin, Taylor, & Brodnik, 2008; El-Gilany & Abusaad, 2013; Levett-Jones, 2005). The research indicates that health care workers that complete continuing education and level of self-direction could be related (O'Shea, 2003). However, a research study that implicitly examines the relationships between the two factors of self-direction and attitude toward continuing education in health care was not identified during the literature review.

The study's significance is to enlarge the amount of information available and help fill an opening in the literature regarding level of self-direction and attitude toward continuing education. Obtaining more information about any possible connections might promote the importance of the concept for students and educators in Allied Health programs. Additionally, the information obtained may aid faculty members as they try to incorporate self-directed learning strategies into their courses. It could also lead to increased understanding and awareness of self-direction and approaches that will enhance learning (El-Gilany & Abusaad, 2013; Fisher

et al., 2001; Yuan et al., 2012). O'Shea (2003) states that the absence of mutual understanding of self-directed learning can cause inconsistent implementation and anxiety for students.

Assumption

The following assumption is made in the study:

- Students' record answers on the two instruments and demographic questionnaire that truthfully exhibit their individual viewpoints.

Delimitation

The main delimitation of the study is identified in the next statement:

- The sample was delimited to students Allied Health degree programs from one community college.

Limitations

The study's primary limitations are acknowledged in the subsequent statements:

- All survey items were based on participant interpretation.
- The sample was restricted to participants from one community college and may not be generalizable to other colleges.
- The PRO-SDLS and RAACES both measures a participant's perceptions and not actual behavior.
- RAACES has a Cronbach's alpha of .73, which is a concern regardless of Blunt and Yang's (2002) claim that the congeneric model substantiate reliability results. The lack of other suitable instruments for this study justified using RAACES.

Definitions

Allied Health – Health care workers other than nurses who have special training in medically prescribed health care services. Examples are occupational therapy, dental hygiene, physical therapy, and radiologic technology (Mosby, 2013).

Continuing Education – Educational programs or activities intended to support information and abilities. After completion of an activity or course, a certificate may be granted as well as a specific number of continuing education credits or contact hours (Mosby, 2013).

Self-Directed Learning – Self-directed learning involves "both the external characteristics of the instructional process and the internal characteristics of the learner, where the individual assumes primary responsibility for a learning experience" (Brockett & Hiemstra, 1991, p. 24).

Self-Directed Learning Readiness – A personal level of willingness to be in charge of his or her education, which is described by Guglielmino's (1977) Self-Directed Readiness Scale (SDLRS).

Conclusion

Health care professions are always in a state of change as technology and patient care evolves. These changes present a unique challenge to all health care professionals because the skills to remain current with these modifications are critical. This study will explore the relationships between self-directed learning and attitude toward continuing education among community college students. The goal will be to advance the body of knowledge of self-direction and attitude toward continuing education in health care professions. Chapter Two includes a review of the literature of self-direction and continuing education. The concepts are reviewed by examining definitions, previous research, and a discussion focused on the instruments employed in the study. Chapter Three includes the research design, population, sample, as well as method.

Chapter Four provides data analysis and related results. Chapter Five will offer a conclusion centered on research and offer recommendations for future studies.

Chapter 2

Review of the Literature

Chapter One acknowledged that it is necessary investigate the relationships of self-direction and attitude toward continuing education in community college Allied Health programs. The chapter also presented an introduction, statement of the problem, purpose of the study, and research questions. It also included the study's significance and provided definitions for relevant phrases. A review of current literature is included in Chapter Two. The examination of existent literature focuses on studies related to self-directed learning and attitude toward continuing education. The literature review includes influential work, frequently acknowledged models, and instruments utilized in self-directed learning. The PRO model (Brockett & Hiemstra, 1991) and PRO-SDLS (Stockdale, 2003) instrument is reviewed in detail because they were used in the study. Additionally, there is an examination of relevant research and selected theories surrounding attitude toward continuing education, related instruments, and an in-depth review of RAACES (Blunt & Yang, 2002).

Self-Directed Learning

Evaluation of the literature focused on self-directed learning literature begins with a short deliberation of its history. A wealth of literature exists that focuses on self-directed learning research and concepts. Therefore, this review will be restricted to the most influential pieces and ones that apply to formal higher education settings.

Self-Directed Learning (SDL): Early Literature and Models

Self-directed learning examples can be traced as far back as Socrates in Rome (Merriam & Brockett, 2007). However, it was Houle's publication of *The Inquiring Mind* (1961) that would lay a foundation for the formation of the idea of self-direction. Houle (1961) interviewed

22 adult learning participants where he would derive that there are three categories to explain the reasons that students partake in continuing education: goal-oriented (participate mainly to achieve a goal), activity-oriented (participate for social reasons), and learning-oriented (perceive learning as an end). Houle is commonly attributed to having played a central part in bringing self-directed learning to "the forefront of scholarship in adult education and learning" (Brockett & Donaghy, 2011, p. 1). In 1971, Allen Tough completed research concerning adult learning projects that impacted self-directed learning concepts and adult learning discourse. Merriam (2001) points out that it was Tough who provided the "first comprehensive description of self-directed learning as a form of study" (p. 8). Malcolm Knowles (1975) used self-directed learning as a component of andragogy and considered it one of the key traits of adult learning. One of the major assumptions in andragogy presented by Knowles (1980) is that adults have a reservoir of experience and generally have a need to be self-directing. The research and works of Houle, Tough, and Knowles verified the "widespread presence of self-directed learning among adults" (Merriam, 2001, p. 8).

Self-directed learning as described by both Tough and Knowles can be considered a fundamentally linear, stepwise process (similar to ones seen in formal education), as the adult learner identifies their needs and decides what activities or techniques that they will utilize (Caffarella, 1993). Personal readiness to participate in self-directed learning is described as existing on a continuum and inherent in everyone to some degree (Brockett & Hiemstra, 1991; Fisher et al., 2001; Guglielmino, 1977; Grow, 1991). Merriam (2001) states that models established in the late 1980s and 1990s are "less linear and more interactive" (p. 9), and include the learner as well as the nature of the learning. A definition for self-directed learning can be obscure, with many people encountering trouble characterizing it and recognizing its value

(Murad & Varkey, 2008). Alternate definitions have been developed that expand the term self-directed learning outside the confines of a formal educational setting and includes the individual choosing to undertake responsibility for preparation, conducting, and assessing the experience (Brockett and Hiemstra, 1991; Candy, 1991; Ellinger, 2004; Merriam and Caffarella, 1991).

Candy's model of SDL. Candy (1991) determined self-directed learning to be a goal and process that includes fundamental items or dimensions that form the foundation for self-directed learning; autonomy as an individual attribute, self-management, and control. Candy's (1991) model included the notion that one's level of self-direction might differ in various content areas, which would be unique to each adult. For example, learners might have increased self-direction with a topic that they have previously encountered.

Garrison's Comprehensive model. A model was developed by Garrison (1997) that includes the cognitive and motivational features of learning. The model integrated three overlying elements: "self-management (task control), self-monitoring (cognitive responsibility), and motivation (entering and task)" (Garrison, 1997, p. 21). Self-management concentrates on the social and behavioral execution, which increases the requirement to make learning more meaningful. Garrison (1997) argues that it is hard to convince learners to take responsibility for "meaningful learning outcomes when they have little control of, and input into, the learning process" (p. 24). The dimension of self-monitoring reflects that brand-new and current knowledge is unified in a substantial way and learning objectives are attained. Garrison (1997) points out that self-monitoring is related to the external managing of educational assignments. The last dimension, motivation, identifies apparent worth and achievement of learning goals. It is influenced by external conditions and intrinsic motivations (e.g., understanding why specific objectives are valuable).

Staged Self-Directed Learning (SSDL) model. The SSDL model recommends student progression through stages that increase self-direction and is defined by phases and activities that educational programs can integrate into their classes (Grow, 1991). Each stage is intended to introduce the student to self-directed learning gradually and serves to ensure that core content and information is delivered. The SSDL also helps the student adapt naturally to different learning options as they progress through a course and items are incrementally added. The overall goal is to facilitate the student's change from being a dependent teacher-oriented learner to being self-directed all in one continuum (Grow, 1991).

Grow (1991) recognizes that there could be a problem resulting from a mismatch between teaching and learning styles in the SSDL model matrix (e.g., a severe mismatch between a stage four self-directed student and a stage one authoritarian teacher). Tennant (1992) published some criticisms of the SSDL model that have valid points. For example, the student moves through different levels of self-direction while progressing throughout the SSDL model. At what exact point should the student be deemed ready to move to the next level? Additionally, who should judge that the student is ready to progress? Tennant (1992) questions whether or not that responsibility should be given to the instructor or does the student need to be accountable for this advancement. Grow (1994) is not convinced that an instructor can ascertain the level of a student's self-directedness constructed on his or her own experience or intuition:

> A recent experience has challenged my initial conviction that teachers can easily arrive at a correct diagnosis on their own. In a class consisting mainly of college seniors, I turned students loose on several projects intended to provide them an opportunity to extend and consolidate….This freedom worked for two-thirds of the class. But before I detected the

> problem, a group of students mismatched to this non-directive approach worked up considerable discontent and suddenly began attacking me for not teaching them. (p. 112)

Grow (1994) clarified that the SSDL model is applicable and valuable for facilitating students toward becoming independent or highly self-directed learners. However, Grow (1994) stressed that it should be used with the practical realization that it will not work for everyone all the time; "there is no one way to teach or learn well. Different styles work for different learners in different situations" (p. 113).

Self-Directed Learning Process (SDLP) model. Pilling-Cormick (1996) recommended the SDLP model as a method where the individual can decide their priorities and select from accessible educational resources. It is these resources that "play an active role in developing a system of meanings for interpreting events, ideas, or circumstances" (Pilling-Cormick & Garrison, 2007, p. 16). The three elements of the model include control factor, interface amongst student and teacher, and issues impacting the interface between educator and student (Pilling-Cormick, 1996). Pilling-Cormick and Garrison (2007) state that the two factors focus on motivational (what is meaningful) and management measures (external versus internal) and one cognitive responsibility (student decides the material or ability needed to achieve it).

Personal Responsibility Orientation (PRO) model. The PRO model by Brockett and Hiemstra (1991) is founded upon the belief that there are separate components of self-directed learning, process and goal. Self-directed learning is "a process in which a learner assumes primary responsibility for planning, implementing, and evaluating the learning process" (Brockett & Hiemstra, 1991, p. 24). The second part, the goal, is associated to the learner's wish to learn while assuming responsibility (Brockett & Hiemstra, 1991). The combined components, instructional process and personal characteristics, comprise the PRO model. It allows the

complex features of self-directed learning to be integrated with motivation and completion of educational activities. The principal notion of the PRO model is that an individual will assume responsibility for their education; "individuals assume ownership for their own thoughts and actions" (Brockett & Hiemstra, 1991, p. 26).

A revised version of the PRO model was presented by Hiemstra and Brockett (2011) to explain and simplify items while including a new understanding of SDL. Hiemstra and Brockett's (2011) Person Process Context (PPC) model includes the basic elements person, process, and context: person includes personal features (e.g., originality, previous education, motivation), the process contains the teaching-learning transaction (e.g., learning styles or skills, preparation), context encompasses sociopolitical and environment (e.g., culture, gender, finances, race, education climate). When person, process, and context are in equilibrium, then there is the possibility of effective self-directed learning in an optimal setting (Figure 3).

Numerous other models describe self-directed learning. The ones listed above are a representative sample of what exists in the literature and inform this study. The proposed study will draw from a population in a community college setting, so not all of the models were appropriate to be included for review. Knowles (1975) realized the importance of the shifting times in which everyone would need to be able to keep up:

> We are entering into a strange new world in which rapid change will be the only stable characteristic…it is no longer realistic to define the purpose of education as transmitting what is known….The main purpose of education must now be to develop the skills of inquire. (p. 15)

This study focuses on self-direction as a competency required to be a successful health care professional. Health care professionals who embrace continuing education as a lifelong process

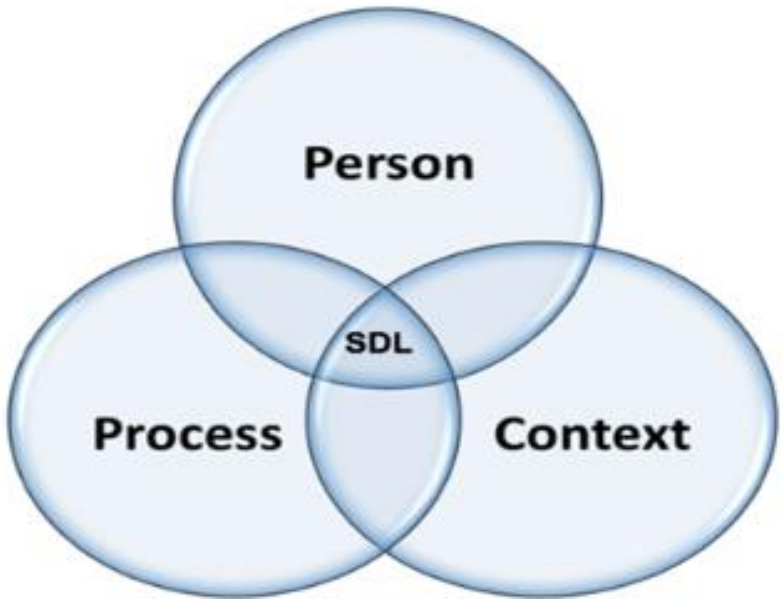


Figure 3. Person Process Context (PPC) model (Hiemstra and Brockett, 2011, p. 158).

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are better able to keep up with technological innovations (Cadorin et al., 2012; Evans, Gallatin, Taylor, & Brodnik, 2008; El-Gilany & Abusaad, 2013; Levett-Jones, 2005).

Self-directed Learning in Formal Education

In formal education, self-directed learning is an important part of the educational process. Lunyck-Child et al. (2001) completed a qualitative study examining perceptions of self-directed learning among faculty and students. This study found that students "undergo a transformation that begins with negative feelings (i.e., confusion, frustration, and dissatisfaction) and ends with confidence and skills for lifelong learning" (p. 116). It is essential to accentuate that previous research supports the notion that health care workers who are incapable to participate in self-directed learning "will not have the skills necessary to meet the changes in modern health care" (O'Shea, 2003, p. 62).

Many health and nursing curriculums continue to focus on content instead of process by utilizing traditional teacher-centered instruction (Kocaman, 2009; O'Shea, 2003). Because most health care programs have restrictions imposed by professional or institutional requirements, it may be hard for faculty members to feel comfortable about integrating new teaching methods into their courses (Levett-Jones, 2005). Faculty members are often negotiating new positions and managing internal conflict as they transition from traditional educational approaches to integrating technology that was not available in their initial training programs (Bonnell & Smith, 2010). The nursing profession is increasingly displaying great effort to incorporate aspects of self-directed learning into its programs (Lunyk-Child et al., 2001; Timmins, 2008; Williams, 2010). Health care professional programs may benefit from adding facilitation of self-directed life-long learning to their goals (Yuan et al., 2012).

Positive aspects of self-directed learning. Self-directed learning has many positive aspects, especially in health care. Individuals that are self-directed are in a learning mode, "people with this disposition are always striving for improvement, always growing, always learning, always modifying and improving themselves. They seize problems, situations, tensions, conflicts, and circumstances as valuable opportunities to learn" (Costa & Kallick, 2004, p. 15). Self-directed learning can contribute to increased self-confidence, independence, motivation, and growth of abilities for a life time of learning (O'Shea, 2003; Yuan et al., 2012). Individuals with the skill to be highly self-directed can utilize this to discern any levels of personal weakness and then work to rectify the deficiency and enhance learning skills (Avdal, 2013; Yuan et al., 2012). Some individuals with a low level of self-directness report enjoyable experiences and appreciation for freedom of personal control while also being challenged by self-directed learning methods (Ausburn, 2002). Therefore, as adults, they are being allowed to make choices for themselves to a certain degree (e.g., they may be able to choose the continuing education topic that they wish to partake in and perhaps what delivery method would work best for their situation). Henwood and Flinton (2012) found in their study that some radiographers favor self-directed learning; "I have found it to be very positive in every respect. I'm all for it. I think because I work as an advanced practitioner there are more opportunities for me to do [continuing education] because my work is self-directed and innovative" (p. 181). In the end, individuals are ultimately in control of how they accept and incorporate knowledge or information into their own experiences (Bonnell & Smith, 2010).

Self-directed learning concerns. Low levels of self-direction can be a disadvantage of employing self-directed learning activities. Mature individuals are usually more self-directed when compared to their younger counterparts (Yuan et al., 2012). A study completed by Ausburn

(2002) found that younger individuals have difficulty maintaining self-motivation and can feel frustrated, secluded, overwhelmed, and "left behind" (p. 232). They have yet to develop as many life experiences and the ability to connect everything in their life together (Ausburn, 2002). Furthermore, younger individuals may still have fresh memories of elementary, middle, and high school teachings where self-directed learning would not have been a priority; "From the first grade on, most students are trained to do what they are told. They are motivated from the outside, managed from the outside, and evaluated from the outside…" (Grow, 1991, p. 58). In those educational settings, students are accustomed to viewing the teacher as an expert who provides knowledge. Unfortunately, this dependent learning style based on early school experience can impact student struggles and resentment when trying to introduce self-directed learning into the classroom (Timmins, 2008). A study conducted by McCauley and McClelland (2004) indicates that prior encounters in education may be at fault for creating dependence amid students. The ones who are attempting to develop self-directed skills can feel lost if they are not given adequate guidance. Instructors have reported that if they immediately introduce a self-directed learning approach into a class of unfamiliar students, there was immediate "apprehension or concern about having to do everything alone" (Thompson & Wulff, 2004, p. 39).

Another factor to consider is the individual's level of comfort with the subject matter. People may function in separate domains at different times, so they may exhibit various levels of self-direction based upon their level of comfort in a "particular subject at a particular time" (Jennings, 2007, p. 520). Therefore, individuals with experience in a particular topic or subject may feel increased comfort and have increased self-direction. In adults, readiness for self-directed learning can be regarded as a range of various levels (Fisher et al., 2001).

Measuring Self-Direction: Instruments and Research

There are many scales comprised of the primary goal to measure self-directed learning. A frequently used scale is Guglielmino' (1977) Self-Directed Learning Readiness Scale (SDLRS). Oddi (1986) studied self-directed learning and its connection to personality through the creation of the Oddi Continuing Learning Inventory (OCLI). There have been multiple additional scales created. In the field of nursing, a few scales have been established to assess self-direction in nursing students (Cheng, et al., 2010; Fisher et al., 2001; Fisher & King, 2010; Williamson, 2007). The following discussion focuses on two of these scales.

SDLRS. The SDLRS created by Guglielmino (1977) served as one of the first instruments to determine level of self-direction. The SDLRS was designed around self-direction factors that include originality, love of learning, self-confidence, acceptance of risk, opinion on lifelong learning, initiative, and responsibility for gaining knowledge (Guglielmino, 1977). Even though the SDLRS instrument has been heavily utilized, it is not without its critics. For example, Bonham (1991) was concerned about the construct validity of the SDLRS (especially concerning low scores). Many researchers believe that additional studies of validation were needed for the SDLRS (Bonham, 1991; Brockett & Hiemstra, 1991; Field, 1989; Hoban, Lawson, Mazmanian, Best, & Seibel, 2005; Long & Agyekum, 1983). There has also been criticism associated with the instrument's utilization with lower levels of education (e.g., items with double-negative wording) (Brockett, 1985; Brookfield, 1985; Field, 1989). The SDLRS has a focus of measuring general levels of self-direction and is not designed to be utilized exclusively in a college setting.

PRO-SDLS. Stockdale (2003) created the PRO-SDLS instrument founded upon Brockett and Hiemstra's (1991) PRO model and designed to determine self-direction in college students. Before this instrument, there were few tools for scholars in the area of self-direction to draw

upon (except for the SDLRS and the OCLI). The instrument's creation was completed in three stages. The first stage identified accurate and reliable scale items constructed around the PRO model. The second stage was model validation through confirmatory analyses. The final phase was composed of validation of the established scale among some other associated processes of self-direction.

Stockdale & Brockett (2011) stated that the final 25-item scale had a Cronbach's alpha of .9 and internal consistency values were assessed for the subsequent components: initiative (α = .81), self-efficacy (α = .78), motivation (α = .82), and control (α = .78). A strength of this instrument is that a panel of six experts helped evaluate its "representativeness of the items to the domain, appropriateness of the items' content, and appropriateness of the item format" (Stockdale, 2003, p. 74).

Sampling, data collection, and analysis. A convenience sample was used to survey college students from an undergraduate educational psychology class, which was a requirement for a teaching certificate, so the students had various academic interests (Stockdale, 2003). Three separate studies were conducted with the first two serving as pilots. The researcher utilized Guglielmino's (1977) SDLRS as one instrument and three questionnaires. These surveys were "used to (a) gather demographic information, (b) solicit professor ratings of students' self-directedness, and (c) survey expert opinion as to the appropriateness of the newly developed" (Stockdale, 2003, p. 72). Perceived levels of student self-directedness were obtained via a college professor and a ten-point Likert scale. Initially, there were 35 items on the PRO-SDLS. Because of the first two pilot tests, items were deleted or revised in order to achieve increased reliability. In the end, there were 25 items included on the PRO-SDLS instrument.

Reliability and validity. Cronbach's alpha provided an evaluation of each study's internal reliability. Cronbach alpha coefficients can range from 0.00 (an indication of no consistency or reliability) to 1.00 which would infer that the reliability is flawless (Groves, Burns, & Gray, 2013; Tavakol & Dennick, 2011). The first two pilot studies were completed in order to add, delete, or revise particular items that were not reliable enough or did not address the desired research goal. Ultimately, the PRO-SDLS was developed to comprise 25 items representing one of the four factors motivation, initiative, control, and self-efficacy (Stockdale & Brockett, 2011). The reliability for the final 25-item scale was above acceptable values ($\alpha = .90$).

Content validity. The PRO-SDLS was closely examined regarding its content validity. This process was completed through the utilization of six PRO model experts. The items were scored separately on a 5-point Likert scale. These actions were completed anonymously and independently by each expert for percentage of the author and inter-item agreement (Stockdale, 2003).

Congruent validity. Congruent validity refers to compatibility between a new instrument's scores versus ones obtained from additional known instruments that measure a similar trait (Flippo & Schumm, 2009). This process was completed by utilizing the SDLRS along with the PRO-SDLS during the third and final study. Pearson product-moment correlations (r) established the presence of any statistically significant relationships. These are often employed to describe the strength of a relationship between two variables (Warner, 2013). The Pearson product-moment correlation coefficient (r) can take a range of values from +1 to -1; with zero being no association (Suter, 2012). The reported r-value from each individual "who completed both instruments was .76 [$p < .001$] [r-squared] of 58%" (Stockdale, 2003, p. 122).

Construct validity. Construct validity was explored by inspecting the relationship between self-direction scores and associated measures, including "optional website use of supplementary materials, age, gender, GPA, course performance, and previously completed semester hours" (Stockdale, 2003, p. 123). Pearson correlation coefficients (*r*), significances (*p*), and variance (r^2) were obtained between the PRO-SDLS and other items such as GPA, ACT, education level, and course performance. To assess the connection between age and self-direction, a Spearman's rho was used. In summary, there was significance between PRO-SDLS scores and age, self-reported GPA, class performance and finished semester hours (Stockdale, 2003).

Convergent validity. Convergent validity was investigated by professors completing ratings focused on each student's self-direction level and comparing the scores to the PRO-SDLS. The association between variables were examined via Spearman's rho correlations. However, out of the 19 students that were rated by their instructor concerning self-direction, there was nothing of significance identified; "convergent validity between professor ratings and scores from the PRO-SDLS was not established" (Stockdale, 2003, p. 126).

Studies using the PRO-SDLS. Since the creation of the PRO-SDLS, additional studies either used the instrument or aimed to validate the instrument in another language such as Portuguese or Chinese (Beard, 2016; Carlisle & Fishback, 2015; Chou, P., 2012; Conner, 2012; Durate, 2014; Gaspar, Langevin, Boyer, & Armitage, 2009; Fogerson, 2005; Hall, 2011; Holt, 2011). The data from the studies using the PRO-SDLS and associated results have been reliable and consistent (Table 1).

Fogerson (2005) utilized the PRO-SDLS to study self-directed readiness and enjoyment completing online classes. The sample consisted of 317 respondents who were completing online

classes in a university setting. A total of ten items developed by the researcher, the PRO-SDLS, and 11 demographic questions composed the survey (Fogerson, 2005). The results included a significant correlation between age and self-direction as well as three of the readiness factors (computer-related, online collaborative environment, and online course experiences). Fogerson (2005) also established that familiarity concerning "online classes and experience with computers were predictive of confidence levels in an online learning environment" (p. v). Reliability was consistent with previous studies ($\alpha = .91$).

Gasper et al. (2009) investigated self-direction and constructivism in computer programming programs with the PRO-SDLS. The instrument was completed during both pre- and post-surveys during an online asynchronous programming course. Due to the lack of traditional in-class meetings, activities "rely on the ability of the students to take control of their learning process" (Gasper et al., 2009, p. 243). The researchers used peer learning forums to help students better arrange assigned work and engage actively with the material; "after using the peer learning forums for an entire semester, the self-perception of our over-committed online adult learners' ability for self-directed learning has evolved to realign itself with more observable manifestations of their self-direction" (Gasper et al., 2009, p. 233).

Hall (2011) studied self-directed learning characteristics of first-year, first-generation college students partaking in a summer bridge program. The sample consisted of 110 first-generation students located in a large university summer bridge program. The results indicated that there were significant relationships between academic success after one semester and PRO-SDLS (this included admissions and university GPA). Compared to previous research, the reliability was comparable for both the pre-test ($\alpha = .84$) and post-test ($\alpha = .90$).

Holt (2011) sought to exposure relationships among familiarity with technology and self-directed learning for individuals going into the work environment. A large university setting was used, which had a sample of 572 students. The study's PRO-SDLS reliability was consistent (α = .88). Holt (2011) found noteworthy correlations between level of self-direction as well as confidence using computers, opinion of technology, and apprehension using computers.

Chou (2012) developed a Chinese version of the PRO-SDLS by using 270 engineering students as research subjects. The goal was to study engineering students and their self-directed learning abilities when encountering new technology. Upon completion of the tool's translation, a reliability check showed a Cronbach's alpha of .90. Additionally, the correlations between the subcategories in the PRO-SDLS were positive and ranged from .34 to .67 (Chou, 2012).

Conner (2012) investigated self-directed learning and information literacy, while determining that there was no significance using the PRO-SDLS. A university setting was used with a sample consisting of 137 students. Additionally, there were no major findings in the scores between the various types of class ranks of bachelors, masters, or doctoral level (Conner, 2012).

Durate (2014) completed a study to provide the first stage in creating and validating a version of PRO-SDLS in Portuguese. The sample included 162 students and had a Cronbach's alpha of .78. Pearson's product-moment correlation (r) was utilized to verify a moderate association between control, initiative, self-efficacy, and motivation (Durate, 2014). The GFI was .933 and CFI was .946.

Carlisle and Fishback (2015) used the PRO-SDLS to study growth of self-direction in mid-level Army officers. The researchers used a combination of a pre- and post-test for individuals attending the U.S. Army's Command and General Staff Officer's Course. The overall

scores amongst the pre- and post-surveys increased above four points with the increases occurring in the area of motivation which rose over two points (Carlisle and Fishback, 2015). Beard (2016) utilized the PRO-SDLS to inspect self-direction and confidence incorporating technology into education between preservice educators. The study included 102 students completing two required courses for a teacher education program. The study established that self-direction had "both a significant relationship with and is a predictor of technology integration confidence" (Beard, 2016, p. vi). The PRO-SDLS reliability in the study was consistent with previous values ($\alpha = .90$).

Strengths and weakness of PRO-SDLS. Stockdale (2003) created an instrument that was focused on measuring self-direction among college students (based upon the PRO model). There were other tools or instruments created before this, but they all suffered criticisms in different areas. The most popular instrument for measuring self-direction is Guglielmino's (1977) SDLRS. Stockdale (2003) created a new instrument but did draw upon the SDLRS as a way of determining convergent validity.

Strengths. An advantage to the creation of the PRO-SDLS instrument is that a panel of six experts was employed to help calculate its "representativeness of the items to the domain, appropriateness of the items' content, and appropriateness of the item format" (Stockdale, 2003, p. 74). It is important to note that two of those experts, Brockett and Hiemstra (1991), established the PRO model. Five of the original six study objectives were successful (only the convergent validity did not pass). The two pilot studies refined the instrument before completing the final study and ultimately creating a tool with strong reliability ($\alpha = .90$). The PRO-SDLS is beneficial because, before its creation, there were very few instruments to measure levels of self-direction

Table 1

Selected Research for PRO-SDLS Studies

	n	*M*	*SD*	Cronbach's Alpha
Stockdale (2003)	194	84.05	12.47	.90
Fogerson (2005)	317	96.91	11.82	.91
Gaspar, Langevin, Boyer, & Armitage (2009) Sample 1	14	90.60	12.3	.89
Gaspar, Langevin, Boyer, & Armitage (2009) Sample 2 (pre-test)	5	91.60	13.35	.89
Gaspar, Langevin, Boyer, & Armitage (2009) Sample 2 (post-test)	5	84.00	4.74	.89
Stockdale & Brockett (2010)	195	80.5	12.47	.91
Hall (2011) (pre-test)	110	89.62	10.03	.84
Hall (2011) (post-test)	110	91.17	10.92	.87
Holt (2011)	572	89.13	11.54	.88
Chou (2012)	270	NR	NR	.90
Conner (2012)	202	92.87	13.45	.90
Durate (2014)	162	40.44	0.45	.78
Carlisle and Fishback (2015) (pre-test)	11	97.55	11.25	NR
Carlisle and Fishback (2015) (post-test)	11	101.82	11.18	NR
Beard (2016)	102	91.47	12.92	.90

(all with its critics). Additionally, none of the other survey instruments had utilized the PRO model as its basic framework.

Weaknesses. A weakness of the PRO-SDLS is that the participants used for its original development were enrolled in an undergraduate class at the same university. During the development of the instrument, a convenience sample was used to elicit volunteers for the study. The student volunteers were all in a required teaching certification course. Even though there were many different academic teaching interests in these courses, the underlying career goal was the same, to be a teacher. This fact could limit the generalizability of the PRO-SDLS to other courses or majors. Stockdale (2003) self-reports that due to using students at one university, the sample will not be very diverse concerning gender, ethnicity, and cultural demographics. During the instrument development, the students self-reported their information through the utilization of the SDLRS and PRO-SDLS. It is assumed that the students responded truthfully and placed effort into each survey's completion. Hendry and Ginns (2009) pointed out that self-reporting may reflect overconfidence and there is the possibility that individuals may not be completely truthful (they do not want to be reflected on poorly and aim to please).

Attitude toward Continuing Education

This discussion will begin with health care professionals who are already practicing in the field, and the next section will focus on student participation in various programs. Health professionals work in complex areas that encompass constant social, technological, and medical changes (Cadorin et al., 2012). Most health professionals are required to complete particular methods of mandated continuing education for licensure to ensure high standards and compliance (Asadoorian & Batty, 2005; Cervero & Daley, 2010; Evans et al., 2008; Gallaher, 2007; Govranos & Newton, 2014; Henwood & Flinton, 2012; Lazarus, et al., 2002). However,

the Institute of Medicine (IOM) distributed a report in 2010 concluded that the professional health care workforce is ill-equipped to guarantee the highest quality of patient care and safety. Researchers found that health professionals tend to focus on meeting regulatory requirements rather than diversifying their skills or filling personal knowledge gaps (IOM, 2010).

Patients want reassurance that they are being handled and cared for by competent health care workers when they require any medical service (Lazarus et al., 2002). Thus, regulatory agencies have been pressured by the public to implement policies that promote and ensure competency for safe practices in the health care professions (Lazarus et al., 2002). A wide variety of professional organizations accept continuing education credits as the demonstration of professional development and maintenance of competence (Clark et al., 2015). Attitudes are complex regarding their impact on involvement in certain continuing education endeavors.

Continuing Education in Health Care: Background

Continuing education is described as undertakings that assist with learning in the workplace (Billett, 2004; Osmond, 2003). The necessity of continuing education can be mapped to the time of Florence Nightingale; as evident in her writings encouraging other nurses to continue learning (Gallagher, 2007). Currently, the definition of continuing education according to Mosby's Medical, Nursing, and Allied Health dictionary (2013) is:

> Formal educational programs designed to promote knowledge, skills, and professional attitudes. The programs are usually short-term and specific. A certificate may be awarded for completion of a course, and many continuing education units or contact hours may be conferred. Continuing education is required for relicensure in many states. It is not to be confused with academic degree-granting programs, such as advanced education or graduate education. (p. 429)

There are many reasons continuing education in various health care fields is critical and necessary to complete. There is a necessity for professionals to keep up-to-date of new knowledge or practice standards because of the rapidly changing developments in technology and the belief that skills decay over time (Asadoorian & Batty, 2005; Evans et al., 2008; Lorenzo & Abbot, 2007; Yuan et al., 2012).

Continuing education in health care and patient outcomes. Health care professionals who participate in continuing education activities improve the results of patient care by improving practice (Fox & Bennett, 1998; Gibbs, 2011). Patients receive a valid diagnosis, treatment, and care based on sound up-to-date evidence (Henwood et al., 2004). When health care workers are not able to successfully act in response to the needs of the patients and broader public, there is a devastating impact on patient care (Clark et al., 2014; Taylor, Irvine, Bradbury-Jones, & McKenna, 2010). Other benefits of continuing education include enhanced career development, improved morale, compliance with accreditation standards, as well as an informed and educated workforce (Gibbs, 2011; O'Sullivan, 2003).

Health care providers are facing increasing challenges associated with caring for individuals who are low socioeconomic status, exhibit complex health needs, and display diversity throughout the multicultural spectrum (Betancourt, Green, Carrillo, & Park, 2005; Delphin & Rowe, 2008; Horvat & Romios, 2011; Shaya & Gbarayor, 2006). The objective of cultural competence is to "create a health care system and workforce that are capable of delivering the highest quality care to every patient, regardless of race, ethnicity, culture, or language proficiency" (Betancourt et al., 2005, p. 499). As demographics of patients change, health care workers must to be equipped to encounter particular challenges (e.g., language barriers) and how to manage those situations (Delphin & Rowe, 2008). Participating in

continuing education activities helps health professionals to continually work on their level of cultural competence to ensure that "all people receive equitable, effective, and culturally- and linguistically-appropriate health care" (Horvat & Romios, 2011, p. 2). Cultural competence is one component of a complex problem that can help eliminate health disparities (Betancourt et al., 2005). Shaya and Gbarayor (2006) identified that some disparities might result from health care workers inability to provide appropriate care due to cultural and linguistic barriers. Therefore, health professionals that are up-to-date and completing continuing education activities aimed at improving cultural competence are able to increase aid to patients and improve health outcomes (Hovat & Romios, 2011).

Attitudes toward mandated continuing education. Advocates for mandatory continuing education argue that it protects the populace from professionals who chose not to voluntarily participate and eliminate health care workers that quit practicing in the field while building professionalism and providing public confidence in the profession (Henwood et al., 2004). There is a mixture of mindsets toward compulsory continuing education. Some professionals challenge the value of mandatory continuing education (Lazarus et al., 2002). They argue that any method of enforced education, predominantly for licensure in health care, is not consistent with the description of a specialized mature adult (Morrison, 1992). Even though most health professions require some form of continuing education to meet licensing requirements, not all health care workers agree on the requirement. Attitude toward participation depends on the individual, environment, and a vast number of negative or positive factors that influence the process (Henwood & Taket, 2008). Lee, Reed, and Poulos (2010) found that 65% of Australian radiographers believe that continuing education should be voluntary.

Factors that deter participation in continuing education. It can make a difference whether someone enrolls in a continuing education program because it is mandatory or because he or she is interested in the topic (Francke et al., 1995). Some researchers believe that the most powerful incentives are internal instead of external (Daily & Landis, 2014). According to Knowles (1989), most adults are receptive to extrinsic stimuluses (i.e., better jobs or salary increases), but intrinsic motivators are much more powerful (i.e., the desired for increased self-confidence, quality of life, accountability, or job contentment).

Many studies focus on barriers or negative attitudes toward continuing education. Henwood and Flinton (2012) surveyed imaging technologists and found; "I do believe… (continuing education)…is a good thing if done because the radiographer WANTS to, only then will it benefit and progress. Forced…achieves nothing" (p. 182). Many health professionals state that time, money, attitude of employer, geography, and feelings of value have massive influence related to the belief that continuing education is significant to a career (Cervero & Daley, 2010; Clark et al., 2014; Furze & Pearcey, 1999, Henwood et al., 2004; Henwood & Flinton, 2012).

Time. The main barrier or deterring factor related to participating in continuing education is time (Govranos & Newton, 2014; Henwood et al., 2004; Henwood & Flinton, 2012). Lack of time could be broken down into personal and work-related. Many health care workers believe that inadequate staffing and high workloads contribute to increased levels of stress (Clark et al., 2014). Henwood et al. (2004) found during a study that many health care professionals tend to think that they do not have the liberty to participate; "We are too tired, busy, during the day to being short staffed to attend any [continuing education] activities. We are always filling in due to sickness/holidays..." (p. 254). There is abundant pressure within the health care setting to care

for patients in a particular timeframe; “time is our biggest enemy” (Govranos & Newton, 2014, p. 657).

Because of the additional pressures at work, many health professionals are finding personal time at home and with family valuable and necessary to relax (Chiu et al., 2013). Many health care professionals are feeling overwhelmed with their jobs, so they do not wish to go home and then be accountable for more work-related activities (Clark et al., 2014). Some find it quite difficult to differentiate that continuing education is not a punishment; “I resent doing [continuing education]. I feel very pressured to give up my time to do it” (Henwood et al., 2004, p. 255). A study completed by Henwood and Flinton (2012) in radiology indicates that health professionals want time to be provided during the work day. The researchers examined responses from an imaging department that allowed for continuing education activities to be completed during assigned work hours. They found that even though time was offered during the work day, the employees felt that they “rarely have time to take it due to the pressures of work” (Henwood and Flinton, 2012, p. 182).

Attitude of management/employers. A limiting factor of completing continuing education activities is the attitude of management or employers. Researchers have found that health care workers feel that their employers do not care about professional development or continuing education due to workplace demands, jealousy, or resentment (Clark et al, 2014; Gould, Drey, Berridge, 2007; Govranos, & Newton, 2014; Henwood et al., 2004; Henwood & Flinton, 2012; Tame, 2011). For traditional methods of continuing education such as conferences, there is an issue of allowing time off and covering necessary shifts. Employers may think that there is no direct, tangible benefit to their bottom line for allowing continuing education, so they tend to avoid promoting participation in these sorts of activities; “management

do not want to recognize it, especially if extra money is involved" (Henwood et al., 2004, p. 256).

Attitude of the health care professional. Attitudes that health care workers maintain toward any continuing education can be heavily influenced by their mentors, teachers, and where they were formally trained (Clark et al., 2014). It is imperative for educators to explain and stress the importance of lifelong learning (Yuan et al., 2012). Henwood et al. (2004) found that any negative comments associated with mandatory continuing education were generally related to the ability of recognizing its value; "I am very competent at the job that I do, [continuing education] would not affect or enhance my competency in any way" (p. 257).

Factors that promote participation in continuing education. Personal gain is a strong motivator for health care workers to complete continuing education (Henwood & Tacket, 2008). There is an intrinsic desire for some health care workers to participate in furthering their education (Francke et al., 1995). A research study conducted by Govranos and Newton (2014) concerning opinions of continuing education found that many health care professionals enjoy it because it "maintains your skills…your professionalism…your confidence…it keeps your registration as well" (p. 658).

Adult education principles have dramatically influenced continuing education in health care. Since the 1980s, the approach to continuing education has shifted from more traditional educational events such as classes or seminars toward facilitation of self-directed learning (Fox & Bennett, 1998). There has been an increase in self-directed web-based learning programs that have been able to fulfill some continuing education requirements successfully (Cobb, 2004; Evans et al., 2008; Horiuchi et al., 2009; Song & Hill, 2007).

Attitude toward Continuing Education and Self-directed Learning in Formal Education

Continuing education is an integral part of working in a health profession. Additionally, self-directed learning in health professional programs is essential for preparing students for intense and complex curriculums. It also focuses on increasing the necessary skills for adjusting to constantly shifting work situations (O'Shea, 2003). Self-directed learning is an essential element of the education process in formal education. Lunyck-Child et al. (2001) found that sustained involvement and the chance to take part in self-directed activities improve student confidence and they become progressively engaged in shared goal setting. Students encountering a new educational event "begin with dependent behaviors and, as they advance through the program, develop interdependent behaviors" (Lunyck-Child et al, 2001, p. 122). The developmental process through the program culminates at the end when students demonstrate "confidence in their SDL skills and value their ability to be life-long learners" (Lunyck-Child et al., 2001, p. 122). Blunt and Yang (2002) found that the intrinsic importance of a continuing education activity plays a major role in whether or not an individual actively participates in learning.

Measuring Attitude toward Continuing Education: Instruments and Research

Several scales exist with the goal of measuring attitudes toward adult and continuing education. Darkenwald & Hayes (1988) created one of the first scales, Adult Attitudes toward Continuing Education Scale (AACES), to measure attitude toward continuing education. Blunt and Yang (2002) revised this scale and developed the Revised Adult Attitudes toward Continuing Education Scale (RAACES). In the field of nursing, a few different approaches have been utilized to measure attitudes toward continuing education. The use of qualitative research and case studies to draw a thematic analysis of attitude is one such method (Eslamian, Moeini, &

Soleimani, 2015; Govranos, & Newton, 2014). Additionally, Hisar, Karadağ, and Kan (2010) developed the Instrument of Professional Attitude for Student Nurses, which includes a subsection focused on continuing education.

AACES. Attitudes are complex and have an impact on participation in certain educational endeavors such as continuing education. In 1988, Darkenwald and Hayes observed that few measurement techniques or attempts had been made to measure adult attitudes toward continuing education. They identified a few previous studies and instruments, but there was little to no evidence of reliability or validity of techniques. An example of a reviewed instrument was the Thurston scale, which was created to measure attitudes toward adult education. However, it had only been administered to adult education participants (which resulted in favorable results because of participant bias) and had a small sample size (Thurstone, 1934; Darkenwald & Hayes, 1988). Hence, Darkenwald and Hayes (1988) set out to construct a reliable and valid instrument to measure attitudes and their relationship to behavior.

The two-attitude theory advocated by Rokeach (1966) was the foundation of their instrument creation. The two-attitude theory addresses attitude and behavior change. The theory utilizes the basic meaning of attitude as a "relatively enduring organization of beliefs about an object or situation predisposing one to respond in some professional manner" (Rokeach, 1966, p. 530). Attitude change is defined as an alteration of predisposition or structure of beliefs (Rokeach, 1966). The causal model proposed that there are two basic types of attitudes: attitude-toward-object and attitude-toward-situations when the object is met. Attitude toward object could be solid or theoretical and involve a person, group, or institution (Rokeach, 1966). Attitudes toward a situation depend on the specific principles initiated by the attitude-object and the predisposition stimulated via the situation (Rokeach, 1966).

Darkenwald and Hayes (1988) stated that the intentions of the study were: create an assessment tool for adult attitudes towards continuing education, determine the connection between attitudes and involvement in adult education, and to identify variances between the attitudes of subsections in the adult populace. AACES was designed to measure adult attitudes and their relationship to behavior in terms of completing continuing educational activities.

Instrument development. A Likert scale was utilized in the development of AACES, which provides a survey method that is easily understood by participants and allows them to respond in different levels of agreement. Furthermore, a Likert scale is easy to utilize in data collection and assessment as well as distribute to participants (e.g., mail, in person, or online; Brace, 2008). An item pool was created by utilizing some objects from previously developed scales to measure adult attitudes toward continuing education. Darkenwald and Hayes (1988) then used a panel of 11 doctoral students and adult education faculty members to create a total pool of 88 items. The items that were unsuccessful were either edited or deleted. In the end, 30 items remained for the pilot (it was ensured that attitude-to-object and attitude-to-method ones were both present). An index was also included with the goal of collecting information about behavior and education (e.g., intentions or encouragement of others).

Sampling, data collection, and analysis. Darkenwald and Hayes (1988) distributed the pilot instrument to 93 adults with various sociodemographic characteristics. The pilot results were evaluated with two item analysis procedures, which included correlational analyses such as reliability and *t*-tests of the differences. After this step was completed, eight items were removed from the scale and one from the behavioral index. AACES was finalized to contain 22 items on a Likert scale: 7 addressing attitude-to-situation and 15 focused on attitude-to-situation. The pilot instrument was administered to a total of 275 adults, and selective sampling was utilized. The

researchers wished to have a sample that was typical of the general populace. However, the majority (85%) of the respondents were Caucasian (Darkenwald & Hayes, 1988). All of the collected data allowed Darkenwald and Hayes (1988) to compute a composite attitude score for each person utilizing the individual items on the survey. A correlational analysis was completed between the scores from the items on AACES, behavioral index, and sociodemographic data.

Scheffé's test. For the data obtained between the items on AACES and the sociodemographic data, a one-way analysis of variance was utilized with the Scheffé test to identify significant differences between sample subgroups (e.g., age, income, and education level). The Scheffé test is very general and "all possible contrasts can be tested for statistical significance and in that confidence intervals can be constructed for the corresponding linear functions of parameters" (Liao, 2002, p. 29). This particular statistical test has the advantage of being utilized with sample sizes that are unequal; unlike similar tests such as the Tukey method which requires an equal sample size (Liao, 2002; Sahai & Ageel, 2000). The Scheffé test is a conservative approach that is only useful when pairwise comparisons are desired. For the development of AACES, the researchers desired a general contrast between the items and subgroups (e.g., age or educational attainment). Thus, the Scheffé test provides an increased powerful significance. It is because the test tends to provide narrower confidence intervals in the case of comparisons involving general contrasts (Sahai & Ageel, 2000).

Stepwise regression equation. For data obtained between behavioral index scores and sociodemographic variables, a stepwise regression equation was used with attitude score as the dependent variable and sociodemographic variables as the independent variables (Darkenwald and Hayes, 1988). This particular test is driven by the fact that the researcher can choose the variables in a hierarchical order based on a sequence of F-tests and r^2 (Warner, 2013). The

researchers did not include information concerning whether the stepwise regression equation was backward or forwards. Darkenwald and Hayes (1988) found in the study that "three variables emerged as significant predictors ($p < .05$) of attitude: behavioral index score, sex, and educational attainment" (p. 8).

***Reliability and validity*.** Two fundamental elements of creating a measurement instrument are determining its reliability and validity. Reliability is related to the capability of an instrument to measure consistently (Warner, 2013). Cronbach's alpha coefficients can range from 0.00 (an indication of no consistency or reliability) to 1.00 which would infer that the reliability is flawless (Groves et al., 2013; Tavakol & Dennick, 2011). The final form of AACES contained alpha reliability of .86 (Darkenwald and Hayes, 1988). The item portion of the instrument scored very well. There are different stances on what is considered good alpha reliability, but by most accounts, the acceptable values range from .7 and above (Groves et al., 2013; Tavakol & Dennick, 2011; Warner, 2013). The reported alpha reliability for the behavioral index was .63 (Darkenwald and Hayes, 1988). The behavioral index area did not score as well in the area of reliability. However, it must be noted that the behavioral index area of AACES contained only four questions. The portion of the instrument that had a .86 Cronbach's alpha reliability and contained 22 questions. This fact is important because alpha can be influenced by the length of a survey. If the instrument is too small, then the value of the alpha is diminshed (Groves et al., 2013; Warner, 2013). Instruments with 20 or more items have stronger internal consistency than the ones with less than 10 to 15 (Groves et al., 2013). Tavakol and Dennick (2011) point out that a "low value of alpha could be due to a low number of questions, poor interrelatedness between items or heterogeneous constructs" (p. 54).

Validity refers to if an instrument measures what it is designed to compute (Kirk, 2008). Content validity pertains to "whether test items represent all theoretical dimensions or content areas" (Warner, 2013, p. 939). Darkenwald and Hayes (1988) report that evidence of AACES content validity was acquired from an evaluation of the items on the measurement tool by a research panel. There is no other information about the validity of the instrument provided by the researchers. In a follow-up study completed by Hayes and Darkenwald (1990) they state that the scale's predictive validity was established with a significant correlation (r = .39) among the AACES score and participant behavior index.

***Strengths and weaknesses of AACES*.** Darkenwald and Hayes (1988) created an instrument that was focused on measuring adult attitude toward partaking in continuing education activities. There had been other tools or instruments created prior to this, but they all suffered forms of criticism.

Advantages. Darkenwald and Hayes (1988) considered their study to be favorable. They observed significant connections between attitudes and gender, education, and income. It is noted that these outcomes coincided with the literature review, which helped to support the validity of the instrument. A significant correlation between attitude and specific sociodemographic characteristics (e.g., positive attitudes, education, and income) are supported by theory. This information lends support to the credibility of the AACES instrument. The reliability of AACES items which represented attitude-to-object and attitude-to-situation was strong (α = .90) which is an advantage for the instrument (Darkenwald & Hayes, 1988).

Disadvantages. Darkenwald and Hayes (1988) self-identified that were some weaknesses related to the creation of their instrument. The population used during the study was from the area of New Jersey with varying sociodemographic information. The study needed to be

administered to a broader geographic area (e.g., more areas in the United States) and among more minorities or disadvantaged adults. Darkenwald and Hayes (1988) also stated at the time of the AACES creation that the relationship between continuing education activities and actual participation (versus self-reporting) should be explored in more detail. Additionally, more knowledge about the determination of the instrument's validity would have made the study stronger.

RAACES. Blunt and Yang (2002) realized that "a rigorous and independent replication and assessment of the scale's factor structure and psychometric properties" (p. 300) concerning the AACES instrument had not been published. They realized that many researchers tend to utilize whatever instruments are available to them, sometimes before evidence of reliability and validity have been created for the tools (Blunt & Yang, 2002). It was identified that there were contradictory deductions concerning the scale's factor structure as seen in the published studies by Darkenwald and Hayes in 1988 and then in 1990. Blunt and Yang (2002) believed that the original researchers discounted previous information demonstrating that attitudes toward adult education were probably multifactorial and chose to focus on a two-factor model. Therefore, Blunt and Yang (2002) felt that:

> The two initial reports on the measurement properties of AACES (a) did not build on prior empirical work indicating attitude toward continuing education was highly likely to be multifactorial; (b) failed to confirm the conceptual framework on which the instrument was constructed, that is, a two-attitude structure; (c) reported contradictory factor structure interpretations; and (d) offered only modest evidence of construct validity. (p. 302)

They argued that the AACES should not be utilized because of insufficient evidence indicating its value and effectiveness. Thus, the primary objective of Blunt and Yang's (2002) research study was to reaffirm the usefulness of AACES.

Sampling, data collection, and analysis. A western Canadian university was utilized to provide 458 adult participants. The sample was entirely different from the one used by Darkenwald and Hayes (1988). Blunt and Yang (2002) utilized a sample of 240 males and 218 females, with a mean age of 35 years (middle-class and well-educated students). It is important to reiterate that the sample used for AACES had an increasingly diverse set of sociodemographics. Blunt and Yang (2002) used a five-item participation behavior index (with yes-no responses) in contrast to the one utilized by Darkenwald and Hayes (1988) that was only four. Since the sample was large (n = 458) and the items on the survey amounted to 22, the researchers chose to draw two independent samples to offer a way of cross-validating the results. Cross-validation is a method used to help reduce Type I error related to replication (Warner, 2013). According to Warner (2013), a large sample is used at the beginning, and then random data sampling occurs. The first set of data is subjected to exploratory analyses, followed by a selection of particular analyses that can be run on the second half of the data (this assesses whether correlations can be replicated with the new data).

Blunt and Yang (2002) completed the data analysis in three separate stages. This manner allowed the researchers to complete analyses for both exploratory and confirmatory samples. Stage one was focused on exploratory factor analyses "to test whether the latent factor structures held for the current data set" (Blunt & Yang, 2002, p. 303). Stage two entailed measuring attitudes of the participants toward adult and continuing education by polishing the instrument through the methodical removal of items. The results from these analyses indicated that the basis

of the AACES instrument on the work of the two-attitude theory (i.e., attitude-toward-object and attitude-toward situations) was not valid. Blunt and Yang (2002) found in their analyses that a three-factor model was appropriate. After noting this specific information, the researchers began to focus on adapting things because of "double and triple loading for some items" (Blunt & Yang, 2002, p. 305). Items were deleted from the group one at a time until there was an acceptable fit for each factor while maintaining a balance. Even though the item pool was reduced from 22 to 9, the researchers made a point to ensure that there were three items per factor on the survey. This fact was to ensure that there were "no identification and convergence problems" (Blunt & Yang, 2002, p. 306). In the final phase, the focus was on creating a measurement model integrating participation behavior and attitude within the items on AACES. Items were removed from the group separately until there was an acceptable fit for each factor while maintaining a balance.

***Reliability and validity*.** The original Cronbach's alpha from AACES was .90 (Darkenwald and Hayes, 1988). Blunt and Yang (2002) assessed the results from the confirmatory factor analyses for AACES and the Participation Behavior Index (PBI) with a Cronbach's alpha of .90. Both sets of researchers achieved a similar measurement of reliability for the AACES instrument. The original alpha reliability on the behavioral index area of AACES was .63 while the newer study achieved a score of .52. After revising AACES, the final product was a nine-item measurement tool created from the exploratory sample and verified with confirmatory samples from stage two. Blunt and Yang's (2002) revised AACES fit the exploratory model (GFI = .94, CFI = .92) as did the confirmatory sample (GFI = .93, CFI = .87). After finalization of the new RAACES, reliability was tested and achieved with Cronbach's alpha and a congeneric model.

Blunt and Yang (2002) argued that using Cronbach's alpha, they might not receive the most accurate reliability assessment. Cronbach's alpha coefficient is capable of being impacted by the length of a survey, and in the event of a survey that is too short, then value of the reliability may be diminished (Warner, 2013). Because of this, surveys are sometimes created with too many items than necessary (Blunt & Yang, 2002). In RAACES, there were only nine items (versus 22 on the AACES), which could cause issues of consistency in the research community. Therefore, they followed the initial test of the reliability of RAACES and PBI with the congeneric model. For RAACES, the Cronbach's alpha was .73, which was decreased from the .90 that was obtained for the 22 item AACES; "likely attributable to measurement distortion contributed by the large number of items" (Blunt & Yang, 2002, p. 309). The researchers argue that RAACES is a more reliable instrument because Cronbach's alpha ($\alpha = .73$) was identical to the outcome of the congeneric model that allowed the results to be substantiated. Additionally, the five-items on the PBI yielded a higher number on the congeneric model (.75) versus the Cronbach's alpha ($\alpha = .52$). This increase in value can also be attributed to the weakness of the Cronbach's alpha to accurately measure reliability on surveys with minimal item numbers (Groves et al., 2013).

To evaluate the predictive validity of the three-attitudinal constructs of the RAACES, Blunt and Yang (2002) employed structural equation modeling to evaluate the association among attitudes and participation behavior. This endeavor was completed by assessing a causal model of attitudinal concepts and behavior built on previous literature (Blunt & Yang, 2002). The conclusion indicated for the three attitude factors that enjoyment of learning reveals an affect element, while perceived importance and intrinsic value of adult education reveal principles as well as beliefs maintained concerning adult education (Hayes & Darkenwald, 1990). Blunt and

Yang (2002) deduced "enjoyment of learning was a function of perceived importance and intrinsic value, and the latter two variables had an indirect influence on behavior as they represent the cognitive component of attitude" (p. 309-310). The causal model of attitude and participation behavior structural coefficients were statistically significant ($p < .05$), and the fit of the model to the data was satisfactory, $\chi 2\ (69) = 592.39$, $p < .01$; GFI = .86, CFI = .71. Blunt and Yang (2002) observed that the model described approximately "90% of the variance and covariance of the measures on attitude and participation" (pg. 310).

Strengths. Blunt and Yang (2002) made sure to evaluate the original AACES for its reliability rigorously. After evaluating the initial results in phase one, the instrument was revised. This was due to the fact that many of the original 22 items from AACES "did not adequately reflect the constructs they were intended to measure, suggesting low content validity; the factors were poorly identified, and the scale's reliability was too dependent on its large number of items" (Blunt & Yang, 2002, p. 311). Ultimately, both instruments (AACES and RAACES) obtained results that indicate adult attitudes make a difference in their decision to participate in adult or continuing education activities. Another advantage of RAACES is that the smaller size allows participants to provide information without becoming too tired during the survey.

Since the creation of RAACES, additional studies have been identified that either used or aimed to validate the instrument (Paloş & Gunaru, 2017; Lau, 2012; Stamouli, 2010). Table 2 provides the RAACES scores from those studies. Stamouli, Valkanos, and Economou (2010) used RAACES to explore the attitudes of approximately 200 adults in Vocational Training Centers in Greece. The goal of the study was to "confirm the scale-measuring attitudes of adults resulting from the adoption of the RAACES model" (Stamouli, Valkanos, & Economou, 2010, p.

Table 2

Comparison of statistics for selected RAACES Studies

	n	Coefficient Alpha
Blunt and Yang (2002)	452	.73
Stamouli, Valkanos, & Economou (2010)	200	.73
Lau (2012)	752	.78
Paloş and Gunaru (2017)	142	.76

80). The complete survey's Cronbach's alpha was .73 (coincidentally the same value as the original study).

Lau (2012) used RAACES to examine in what manner attitudes and subjective norms can be utilized to calculate intent of participation among adults in continuing education. The setting for the research study was in Hong Kong, China with 752 participants. Cronbach's alpha for all factors was .78. The CFI was .958, and the GFI was .941; the closer to one the better the model fit (Lau, 2012).

Paloş and Gunaru (2017) utilized RAACES to explore the possibility that "personal factors are more important than contextual factors in explaining teachers' behaviors in relation to learning participation" (p. 458). The study investigated the relationship between two personal factors of dispositional opposition to change and teachers' attitude toward continuing education. The Cronbach's alpha was .76 for the complete survey and had 142 participants. In each of the reviewed studies utilizing the RAACES instrument, the reliability remained consistent. Each of

the researchers stated that they found RAACES to be a moderately reliable instrument (Blunt & Yang; 2002; Paloş & Gunaru, 2017; Lau, 2012; Stamouli, Valkanos, & Economou, 2010).

Weaknesses. Blunt and Yang (2002) stated that even though RAACES can be considered a reliable instrument, it is not conclusive of other factors that can influence attitude toward continuing education. It was confirmed with RAACES that attitude toward adult and continuing education is multifactorial. The reliability of the PBI portion of the survey was lower than what is usually considered as acceptable in the research community ($\alpha = .52$ and congeneric model = .75). It must be noted that the population utilized for the development of the RAACES was not very diverse in regards to sociodemographics, which could be considered a limitation.

Conclusion

The main objective for this review of literature was to examine self-directed learning and attitudes toward continuing education as well as identify suggestions for preparing new health care professionals with the necessary skills to succeed. Based upon the information reviewed, the PRO model (Brockett & Hiemstra, 1991) was chosen to be used in the study. The PRO-SDLS (Stockdale, 2003) was selected as the instrument to measure level of self-direction because it has shown sound reliability and validity, plus it is designed for utilization in an educational environment.

This literature review identified and focused on attitudinal variables of motivation (intrinsic and extrinsic), time, and attitude of the health care professional as well as their manager/employer. Blunt and Yang (2002) found that the intrinsic value of a continuing education activity plays a major role in whether or not an individual actively participates in learning. The RAACES instrument (Blunt & Yang, 2002) was chosen to measure attitude toward continuing education despite some concerns about the reliability because there are limited other

options. The results from this study will improve the amount of information available regarding RAACES because it has been used in limited research studies since development. The literature review supports that there may be relationships between level of self-direction and positive feelings concerning continuing education activities.

Chapter 3

Method

The literature in the preceding chapter illustrated previous information and research related to self-direction and attitude toward continuing education in health care. The study's purpose is to investigate the relationships between self-directed learning and attitude toward continuing education among students participating in community college Allied Health programs. The findings may add to the current literature and enhance knowledge regarding the possibility that higher levels of self-direction can impact attitude toward continuing education. Increased understanding of self-direction can lead to its promotion within courses or programs and may help develop independent learning skills, which are essential abilities for health care workers (El-Gilany & Abusaad, 2013).

Continuing education credits are accepted by a wide variety of professional organizations as a demonstration of professional development and maintenance of competence (James & Francis, 2011). Health professionals must have developed or acquired self-directed learning skills to meet necessary changes in modern health care (O'Shea, 2003). It is not possible for formal education programs to completely prepare graduates for the complex experiences encountered in the professional arena. Health professionals need to be self-directed learners in order to acquire the information and skills required to succeed (Bonnel & Smith, 2010). Information is missing in the literature concerning self-direction and attitude toward continuing education focused on students in Allied Health programs. The following research questions guided the proposed study (at a significance level of .05):

1. To what degree does a relationship between perceived levels of self-direction and attitude toward continuing education among community college students in Allied Health programs exist?
2. To what degree does perceived levels of self-direction or attitude toward continuing education differ by class rank among community college students in Allied Health programs?
3. To what degree does the relationship between perceived levels of self-direction or attitude toward continuing education and age among community college students in Allied Health programs exist?

Population and Sample

Roane State Community College (RSCC), which is located in the southeastern United States with many rural campuses, provided the study's population. The sample consisted of allied health students. RSCC provides higher education opportunities for an assorted eight-county service area including Roane, Anderson, Loudon, Campbell, Scott, Cumberland, Morgan, and Fentress counties plus enlarges to include Knox and Blount counties for the supply of health training (Roane State Community College, 2017a). Classes in the various Allied Health programs are offered on three different campuses located in Anderson, Roane, and Knox counties. Students from other rural counties will travel to those three allied health based campuses to take courses for their respective degree programs.

RSCC has the third highest rate of Pell grant participants in the state and Morgan, Fentress, Campbell, and Scott counties have the highest adult population with no college degree (2017b). According to the US Census Bureau, the description of an urbanized zone contains over 50,000 residents, whereas the term "rural" includes all inhabitants and housing excluded from an

urban area (2018). After obtaining information from the 2010 US Census for Tennessee concerning population delineation of residents in urban versus rural areas, it was determined that 1,850 of the 3,213 students that registered for fall 2016 classes were considered to be from rural areas of East Tennessee (Roane State Community College, 2017b; US Census Bureau, 2010). Data from the fall 2018 semester indicated that total college enrollment was 5,911 and the number of self-reported first-generation students was 2,525 (J. Tinley, personal communication, October 9, 2018). RSCC has six Allied Health degree programs that include: dental hygiene, occupational therapy, opticianry, physical therapy assistant, radiologic technology, and respiratory therapy (Roane State Community College, 2017a). The nursing program was excluded from the sample because they are not included in the definition of allied health. Allied health includes health care workers other than nurses (Mosby, 2013).

Each student in degree-seeking programs was included as part of the population utilized for the study. There were 388 email invitations distributed with reminder emails sent every three to four days for two weeks. The total sample response rate was calculated to be 29.38% (n = 113). For correlational studies in educational research, the usual sample size per group in many areas of research often hover around 30 to 60 (Suter, 2012). This number allows statistics such as the mean to be consistent from sample to sample. Suter (2012) also states that correlational studies tend to have sample sizes that range from around 50 to several hundred. For this study, the responses to the PRO-SDLS and RAACES instruments (n = 113) were correlated to inspect the coefficients and examine if a variable was related to another.

Variables and Instrumentation

The variables in this study were self-direction and attitude toward continuing education. In addition to the two main variables, age and class rank were used for the study based upon

information in previous literature that has identified them as influencing factors for level of self-direction. Class rank was utilized because it has been revealed that an individual's level of comfort with subject matter can influence level of self-direction (Jennings, 2007). Additionally, the demographic variable, age, was collected because of the argument that aging is not only a process of chronological accumulation, but also an accrual of wisdom, which can impact level of self-direction (Hargreaves, 2005). As discussed, in Chapters One and Two, the instruments used in the study were Blunt and Yang's (2002) Revised Adult Attitude toward Continuing Education Scale (RAACES) and Stockdale's (2003) Personal Responsibility Orientation to Self-Direction in Learning Scale (PRO-SDLS). Permission was obtained and documented separately for the instruments before dispensing the survey.

Revised Adult Attitude toward Continuing Education Scale (RAACES)

The RAACES instrument by Blunt and Yang (2002) is a revision of Darkenwald and Hayes's (1988) Adult Attitude toward Continuing Education Scale (AACES). Blunt and Yang's main objective was to reaffirm the usefulness of AACES and to ensure its value and effectiveness via retesting reliability and validity. They believed that the original AACES disregarded previous evidence representing that attitudes toward adult education were probably multifactorial and solely focused on a two-factor model. After finalization of the new RAACES, reliability was tested and achieved with Cronbach's alpha and a congeneric model on the final nine-item scale with an identical value of .73 and allows the results to be substantiated (Blunt and Yang, 2002). The attitude scale factor along with the retested Cronbach's alpha for AACES, RAACES, and the congeneric model are as displayed in Table 3. Blunt and Yang (2002) tested for validity and observed that approximately "90% of the variance and covariance of the

Table 3

Comparison of AACES and RAACES

	AACES Cronbach's Alpha	RAACES Cronbach's Alpha	RAACES Congeneric Model
Enjoyment of learning activities	.69	.56	.71
Importance of adult education	.76	.59	.80
Intrinsic value of adult education	.66	.51	.65
Total scale score	.86	.73	.73

measures on attitude and participation" (pg. 310) were described by the model. After revising the original AACES, the final product was a nine-item measurement tool created from the exploratory sample and tested with confirmatory samples from phase two. The Cronbach's alpha on the attitude scale factors is below the usually acceptable range of .70. However, the congeneric model in the confirmatory analysis is not underestimated by the small number of scale items (Blunt and Yang, 2002; Graham, 2006). Blunt and Yang's (2002) RAACES fit the exploratory model to the data very well (GFI = .94, CFI = .92). The fit of the exploratory model to the data in the RAACES is good as well as the confirmatory sample (GFI = .93, CFI = .87). Based upon examination of previous research using the RAACES instrument, this study was the second time the instrument has been utilized in the United States and the first study at a community college level.

Personal Responsibility Orientation to Self-Direction in Learning Scale (PRO-SDLS)

The PRO-SDLS contains 25 items that represent the four factors initiative, control, self-efficacy, and motivation (Stockdale and Brockett, 2011). The overall reliability for the final 25-item scale was acceptable (α = .90). The reliability for each of the subscales are as follows:

- Control (α = .78)
- Initiative (α = .81)
- Motivation (α = .82)
- Self-efficacy (α = .78)

For the PRO-SDLS, all the Cronbach's alpha coefficients are larger than .70, which is deemed satisfactory (Lowenthal, 2001). Two pilot studies were utilized to improve the instrument before completing the concluding study and ultimately created a tool with a strong reliability (α = .90).

The Demographic Questionnaire

The demographic variables collected for the study was class rank and age. Class rank includes beginning or entering student, current student transitioning from first to second year (mid-program), and recently graduated second-year students. The reason for choosing age and class rank was derived from previous research as specified in the literature review, which indicates students encountering new educational techniques "begin with dependent behaviors and, as they advance through the program, develop interdependent behaviors" (Lunyck-Child et al., 2001, p. 122). It is essential to reiterate that Lunyck-Child et al. (2001) found that the developmental process through a program culminates at the end when students demonstrate "confidence in their SDL skills and value their ability to be life-long learners" (p. 122). Adult education researchers support the fact that when adults grow or mature, they become

increasingly more self-directed (Brocket & Hiemstra, 1991; Caffarella, 1993). Additionally, attitudes that health care workers maintain toward any continuing education can be heavily influenced by their mentors, teachers, and where they were formally trained (Clark et al., 2014). The demographic variables selected for this study provide a summary of the sample, but are also associated with prior literature and will be used to examine relationships between self-direction and attitude toward continuing education.

Data Collection

Approval from the Institutional Review Board (IRB) at Roane State Community College and the University of Tennessee was obtained prior to sharing the survey with the Allied Health Admissions Coordinator. To avoid coercion, only the Allied Health Admissions Coordinator had access to student emails for initial recruitment and reminders. A request for participation via an electronic correspondence was sent to 388 Allied Health degree students along with consent and a link to both survey instruments. Students were guaranteed that completing the survey was voluntary and they could end participation in the study at any time. Participants accessed a survey link that was anonymous and prevented the gathering of individual identifiers (e.g., address, name, email, or IP address). Reminders were sent via email three to four days after the initial correspondence for two weeks.

The combination of the PRO-SDLS, RAACES, and demographic section culminated into a 36-item survey. The expected time to complete was approximately 15 to 20 minutes. All ethical guidelines submitted and approved by the IRB were followed. Data is stored in a password protected computer and will be destroyed in three years. The Qualtrics survey software collected data and then SPSS was used to conduct statistical analyses.

Research Design and Data Analysis

A correlational research design was utilized to explore the relationships between perceived levels of self-direction and attitude toward continuing education in Allied Health programs at a community college. A Pearson product-moment correlation coefficient (*r*) was employed to examine the relationships between self-direction and attitude toward continuing education. Each dataset was examined for completeness and entries with missing data from both instruments were excluded from the analysis. A *p*-value of .05 was used for all analyses, which indicates a "probability of only 5 out of 100 times that the findings are due to chance alone" (Keele, 2011, p. 27).

Research Questions

Three major research questions were evaluated. The PRO-SDLS and RAACES were used along with descriptive statistics (numeric age and class rank). Class rank included three levels: beginning, mid-program, and recently graduated second-year students. The first research question explored relationships between perceived level of self-direction and attitude toward continuing education. Pearson product-moment correlations (*r)* were utilized to ascertain strength and direction between any items on RAACES and the PRO-SDLS. Correlational relationships can be observed as positive, negative, none, or curvilinear (Jackson, 2008). Relationships can vary between -1.00 and +1.00 with the weakest correlation being closer to 0.00 (Jackson, 2008).

The second major research question determined the presence of a relationship between perceived levels of self-direction or attitude toward continuing education and class rank (i.e., entering freshman, mid-program, and recent graduates) among community college students in Allied Health programs. A descriptive statistic (class rank), along with a one-way ANOVA, was

used to examine the relationship between class rank and self-direction using the PRO-SDLS. Class rank and a one-way MANOVA was used to investigate the relationship between class rank and attitude toward continuing education using individual items on RAACES. The level of significance for all analyses was .05.

The third research question evaluated if there was a relationship between perceived levels of self-direction or attitude toward continuing education and age. Descriptive statistics such as range and mean for the variable, age, were identified from participant responses. A Spearman rho (ρ) rank correlation at a .05 level of significance was used to analyze the data for research question three.

Conclusion

The sample for the study composed of Allied Health degree students at Roane State Community College (n = 113). The participants in the sample were requested to finish a survey containing the instruments RAACES and PRO-SDLS as well as a demographic questionnaire. The software package SPSS Statistics was employed to evaluate the data. The study used a correlational design to inspect the relationships between level of perceived self-direction and attitude toward continuing education. It was not possible to establish causal relationships in this study even when there was a significant finding between level of self-direction and attitude toward continuing education. The resulting information from the study is still valuable because it enhances the amount of material available concerning relationships between self-direction and attitude toward continuing education. The findings will establish a baseline for future studies to further evaluate self-directed learning and its connection with continuing education in the area of allied health.

Chapter 4

Results

The study's purpose was to explore the relationships between self-directed learning and attitude toward continuing education among students participating in community college Allied Health programs. A sample was obtained from entering freshman, students transitioning from first to second year (mid-program), and recently graduated second-year students enrolled in an Allied Health degree program at a southeastern community college. From the 388 email invitations distributed, 125 students responded. Upon initial examination of the data sample, it was observed that a small amount of replies were missing information and were subsequently omitted because they were incomplete (11 responses). The total sample response rate was calculated to be 29.38% (n = 113). This chapter incorporates the results from investigating the relationships between perceived levels of self-direction and attitude toward continuing education. The results include participant demographics, reliability of the instruments, as well as findings for the three research questions described in Chapters One and Three.

Demographics

The study included two demographic characteristics: class rank (i.e., beginning, mid-program, or recently graduated students) and age. As discussed in Chapters One and Two, the acquired sample was from students admitted into degree based Allied Health programs at a southeastern community college. Participants reported an age range from 18 to 54 years old with M = 27.42, Mdn = 25, and mode = 19. The descriptive statistics of the sample is presented in Table 4. Respondents' class rank classified as beginning or recently admitted student was 46.02% (n = 52) of the sample, 27.43% (n = 31) were mid-program students, and 26.55% (n = 30) was defined as recently graduated students as seen in Table 5.

Table 4

Age - Descriptive Statistics

	Descriptive Statistics					
	N	*Range*	*Min*	*Max*	*M*	*SD*
Age (years)	106	36	18	54	27.42	8.10

Table 5

Class Rank - Descriptive Statistics

	N	Percentage
Beginning or recently admitted students	52	46.02
Mid-program students	31	27.43
Recently graduated students	30	26.55

Instrumentation

This study included two instruments, which were the PRO-SDLS (Stockdale, 2003) and RAACES (Blunt & Yang, 2002). The reliability of an instrument indicates the consistency of the measures obtained and increased reliability indicates a less random error in the measurement method (Groves, Burns, & Gray, 2013). After determining the reliability of each of the scales, the scores were compared to previous studies using the same instruments.

PRO-SDLS

Perceived levels of self-direction among participants was measured with the PRO-SDLS instrument created by Stockdale (2003). For this study, the Cronbach's alpha was .89 as demonstrated in Table 6. The reliability of the PRO-SDLS instrument ($\alpha = .89$) in this study was similar to the original value ($\alpha = .90$) obtained by Stockdale (2003) during the instruments creation.

Cronbach's alpha for each PRO-SDLS factor or subscale was tested for reliability and the results can be seen in Table 7; control ($\alpha = .72$), initiative ($\alpha = .75$), motivation ($\alpha = .64$), and self-efficacy ($\alpha = .76$). The reliability on each the PRO-SDLS subscale factors was consistent except for motivation. The Cronbach's alpha results connected to item-deletion for the PRO-SDLS motivation subscale was examined (Appendix A). Removal of any item did not raise the Cronbach's alpha to an acceptable level. It is possible that the motivation factor for this study may exhibit less variation and should be interpreted with care.

On a 5-point Likert scale, the PRO-SDLS instrument has a range of 25-125 through the utilization of 25 questions. Prior results in previous studies have displayed ranges from 80.05

Table 6

PRO-SDLS Reliability

Reliability Statistics	
Cronbach's Alpha	*N* of Items
.89	25

Table 7

PRO-SDLS Subscales Reliability

Reliability Statistics			
	Stockdale (2003) Cronbach's Alpha	Current Cronbach's Alpha	*N* of Items
Control	.78	.72	6
Initiative	.81	.75	6
Motivation	.82	.64	7
Self-efficacy	.78	.76	6
Overall	.90	.89	25

(Stockdale & Brockett, 2010) to 96.21 (Fogerson, 2005). For this group of allied health students, the PRO-SDLS mean is 81.39 (*SD* = 5.81; *n* = 113). The mean for overall self-direction for the PRO-SDLS is observed in Table 8, along with Stockdale and Brockett's (2010) comparison scores. In summary, the reliability for the PRO-SDLS and results from this study is consistent from previous research, except for the motivation subscale. The overall reliability for this study was above an acceptable level (α = .89).

RAACES

As mentioned in Chapter Two, RAACES (Blunt & Yang, 2002) is a revision of the original AACES scale (Darkenwald & Hayes, 1988). Data and research in existing literature for RAACES is limited. The only subscale reliability scores found for the 9-item RAACES (Blunt & Yang, 2002) were from the scale's initial creation. The researchers Blunt and Yang (2002) argue that RAACES is a reliable instrument because the Cronbach's alpha (α = .73), was identical to the outcome of the congeneric model that allowed the results to be substantiated.

When comparing the reliability of the RAACES instrument in this study (α = .67) to the one by Blunt and Yang (2002), it is considerably lower than the original Cronbach's alpha of .73 (Table 9). When comparing the reliability of RAACES to previous literature, it is noted that the reliability of this study (α = .67) was lower than previously documented studies. The internal consistency of each RAACES subscale was also verified for reliability. The Cronbach's alpha results for each subscale can be seen on Table 10; enjoyment of Learning (α = .47), importance of adult education (α = .44), and intrinsic Value (α = .65).

After examining the item-total statistics, it was observed that if question number three on the RAACES the instrument was deleted then the Cronbach's alpha would be raised to a more acceptable level of .70 (Appendix B). Additionally, the corrected item-total for RAACES was

Table 8

PRO-SDLS Score Comparisons

	Stockdale & Brockett (2010)			Current		
	M	*SD*	*N*	*M*	*SD*	*N*
SDL – Total	80.05	12.47	195	81.39	5.81	113

Table 9

RAACES Reliability

Reliability Statistics	
Cronbach's Alpha	*N* of Items
.67	9

Table 10

Subscales: RAACES Reliability

Reliability Statistics			
	Blunt and Yang (2002) Cronbach's Alpha	Current Cronbach's Alpha	*N* of Items
Enjoyment of Learning	.56	.47	3
Importance of Adult Education	.51	.44	3
Intrinsic Value	.73	.65	3
Overall	.73	.67	9

evaluated to determine the correlation for the element selected with the sum of the other items (Gilem, J. & Gilem, R., 2003). It was noted that the corrected item-total correlation was below the usually accepted value of .4 on seven out of the nine items (Appendix B). The low corrected item-total correlation indicated that overall, the items on RAACES did not correlate well with the overall instrument or fit well with each other. After examining data from both instruments (PRO-SDLS and RAACES), it was decided to keep each of them as a whole without deletion of any items for consistency. This decision was because a portion of the PRO-SDLS subscale, motivation ($\alpha = .64$), had lower reliability than the overall Cronbach's alpha of .67 for RAACES. There were no items eligible for deletion from the PRO-SDLS subscale, motivation, which would have increased the Cronbach's alpha if removed. Furthermore, due to the low Cronbach's alpha of each RAACES subscale, the decision was made to use the instrument as nine individual items instead of as a whole.

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Analysis of the Research Questions

The results from the three research questions are displayed in this segment. Data analyzed by using SPSS is reported below. Participants submitted a survey evaluating the extent to which a statement applies to them with the scores presented on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). The negative items on the PRO-SDLS and RAACES were reverse coded. Prior to evaluating the research questions, data was inspected for normality.

Question 1

To what degree does a relationship between perceived levels of self-direction and attitude toward continuing education among community college students in Allied Health programs exist?

The relationships between the variables of self-direction and attitude toward continuing education was examined by investigating correlations. Pearson product-moment correlations (*r*) were utilized to determine if any statistically significant relationships were present. These are often employed to describe the strength and direction of a relationship between two variables (Warner, 2013). The correlation coefficient examines the amount that one variable is related to another. Evans (1996) suggested that the strength of a correlation could be evaluated through the use of the following categories: .00 - .19 = very weak, .20 - .39 = weak, .40 - .59 = moderate, .60 - .79 = strong, and .8 - 1.0 = very strong. Some assumptions exist for the Pearson product-moment correlations (*r*), which include the two variables having a linear relationship and normal

distribution (Morgan, Leech, Gloeckner, & Barrett, 2013). Additionally, any outliers can drastically change a correlation coefficient and influence the magnitude of the correlation (Bordens & Abbott, 2011). Due to the reliability of the RAACES and its subscales, the Pearson's product-moment correlation coefficient (r) was examined individually versus utilizing its subscales or as a whole. In summary, the correlation coefficient (r) for the items in RAACES was processed individually as seen in Table 11.

A moderate significant positive relationship was found between overall self-direction and a component of attitude associated with intrinsic value; "adult education is an important way to help people cope with changes in their lives" ($r = .465$, $p < .01$). There was also a weak significant positive relationship between overall self-direction and attitude with an item associated with intrinsic value; "adult education helps people make better use of their lives" ($r = .223$, $p = .018$). Therefore, there is a low to moderate positive relationship, which reveals that as overall self-direction increases, participants view adult education as an important coping mechanism as well as a way to make better use of their lives.

There were some significant correlations between specific items related to enjoyment of learning and components of the PRO-SDLS. Weak significant negative correlations were found between a dislike of studying and self-efficacy ($r = -.195$, $p = .038$), initiative ($r = -.257$, $p < .01$), and motivation ($r = -.373$, $p < .01$). In summary, there were weak negative correlations that indicate as self-efficacy, initiative, and motivation decrease than the dislike of studying increases. There was also a weak to moderate significant negative correlation between being fed up with teachers and classes as well as components of self-efficacy ($r = -.306$, $p < .01$), motivation ($r = -.445$, $p < .01$) and control ($r = -.245$, $p < .01$). As self-efficacy, motivation, and

Table 11

Pearson Correlation Coefficient (r) between PRO-SDLS and RAACES

Correlations						
		Self-Efficacy	Initiative	Motivation	Control	Overall
1. I dislike studying	Pearson Correlation	-.195*	-.257**	-.373**	-.110	-0.14
	Sig. (2-tailed)	.038	.006	.000	.247	.882
2. I'm fed up with teachers and classes	Pearson Correlation	-.306**	-.119	-.445**	-.245**	.153
	Sig. (2-tailed)	.001	.207	.000	.009	.106
3. I enjoy education activities that allow me to learn with others	Pearson Correlation	-.072	-.020	.065	-.021	.099
	Sig. (2-tailed)	.454	.834	.496	.823	.301
4. Successful people do not need adult education	Pearson Correlation	-.101	-.148	-.343**	-.088	.071
	Sig. (2-tailed)	.289	.118	.000	.354	.453
5. Adult education is mostly for people with little else to do	Pearson Correlation	-.261**	-.115	-.274**	-.180	.058
	Sig. (2-tailed)	.006	.228	.004	.059	.547
6. Money employers spend on education/ training is well spent	Pearson Correlation	.208*	.063	.198*	.073	.031
	Sig. (2-tailed)	.027	.510	.035	.441	.747
7. Adult education helps people make better use of their lives	Pearson Correlation	.388**	.242*	.199*	.290**	.223*
	Sig. (2-tailed)	.000	.010	.036	.002	.018
8. Continuing my education would make me feel better about myself	Pearson Correlation	.254**	.274**	.284**	.209*	.112
	Sig. (2-tailed)	.007	.004	.002	.027	.241
9. Adult education is an important way to help people cope with changes in their lives	Pearson Correlation	.199*	.290**	.136	.065	.465**
	Sig. (2-tailed)	.034	.002	.151	.495	.000

* Correlation is significant at the 0.05 level (2-tailed).
** Correlation is significant at the 0.01 level (2-tailed).

control decrease than there was a weak to moderate increase of feeling fed up with classes and teachers.

Additional significant correlations exist between items related to the importance of adult education and components of the PRO-SDLS. Motivation had a weak significant negative correlation with the belief that successful people do not need adult education (r = -.343, p < .01). As motivation decreases, the attitude that an adult does not require adult education increases. There was also a weak significant negative correlation concerning self-efficacy (r = -.261, p < .01) and motivation (r = -.274, p < .01) with the attitude that adult education is mostly for "people with little else to do". As self-efficacy and motivation decrease, the attitude that adult education is mostly for people with little else to do increases. There was a weak positive significant correlation between self-efficacy (r = .208, p = .027) and motivation (r = .198, p = .035) concerning money that employers spend on education/training is well spent.

There were further significant correlations between items related to intrinsic value and components of the PRO-SDLS. Self-efficacy (r = .199, p = .034) and control (r = .290, p < .01) had a weak significant positive correlation with adult education being an important way for people to cope with changes in their lives. All four subscales of the PRO-SDLS had a weak to moderate positive significant correlation with adult education helping "people make better use of their lives"; self-efficacy (r = .388, p < .01), initiative (r = .242, p = .010), control (r = .199, p = .036), and motivation (r = .290, p < .01). Additionally, the item concerning continuing education making an individual feel better had a weak significant positive correlation with all four PRO-SDLS subscales: self-efficacy (r = .254, p < .01), initiative (r = .274, p < .01), control (r = .284, p < .01), and motivation (r = .209, p = .027).

Research question one focuses on the degree to which there are relationships between perceived levels of self-direction and attitude toward continuing education among community college students in Allied Health programs. There were multiple weak significant positive correlations between overall self-direction and two items related to intrinsic value of adult education, which was helping people cope with change and making better use of their time. There were also weak to moderate significant negative and positive correlations between many of the other individual items of RAACES and subscales of PRO-SDLS. A summary of significant findings can be seen in Appendix C. In Chapter Five, there is additional discussion and implications for practice based upon the results.

Question 2

To what degree does perceived levels of self-direction or attitude toward continuing education differ by class rank among community college students in Allied Health programs?

The degree to which perceived levels of self-direction differ by class rank was inspected by utilizing a one-way analysis of variance (ANOVA) for overall self-direction at a .05 level of significance. The one-way ANOVA is useful in determining if there are statistical differences between the means of two or more independent groups (Groves, Burns, & Gray, 2013; Tavakol & Dennick, 2011). An assumption for the one-way ANOVA includes values in each group follow a normal curve, homogeneity of variances, and there are no significant outliers (Morgan et al., 2013). A multivariate analysis of variance (MANOVA) was used for class rank and PRO-SDLS subscales. The one-way MANOVA examines one or more independent variables and the effect on a set of two or more dependent variables (Warner, 2013). The assumptions include two or more dependent and independent variables, independence of observations, presence of no outliers, and normality (Bordens & Abbott, 2011; Morgan et al., 2013). The degree to which

attitude toward continuing education differ by class rank was examined by utilizing a one-way MANOVA at a .05 level of significance.

Differences between class rank and self-direction. The first element examined was how self-direction differs by the three types of class rank (beginning, mid-program, and recently graduated second-year students). There was a statistical significance of .016 (Table 12). The statistical significance of the one-way ANOVA (p = .016) indicated that there was an overall difference between the groups on self-direction. In order to determine which specific groups differed, a Tukey post hoc test was used. There was a statistical significance between mid-program and recently graduated students, which indicates that there is a difference amid those two class ranks (Table 13).

The Tukey post hoc test revealed that there was a significant mean difference at the .05 level between the mid-program class rank and the recently graduated second-year students. The homogenous subsets were evaluated, which also illustrate the mid-program and recent graduate student subsets were significantly different. The means were 3.0230 (mid-program) and 3.1823 (recently graduated students); therefore it is not a large difference even though it was recognized as significant (Table 14).

A one-way MANOVA was used to examine the subscale factors of the PRO-SDLS along with class rank to determine if there was a statistical significance between them. The descriptive statistics can be seen in Table 15. Participants were asked to score on a five-point rating scale the extent to which a statement applies to them. The Wilks' lambda, p = .324, as seen in Table 16 was not significant, so there are no differences between class rank and the PRO-SDLS subscales (self-efficacy, initiative, motivation, and control).

Table 12

One-way ANOVA between Class Rank and Self-Direction

	SS	*df*	*MS*	*F*	*Sig.*
Between Groups	.401	2	.201	4.286	.016*
Within Groups	5.148	110	.047		
Total	5.550	112			

*Difference is significant at the 0.05 level (2-tailed).

Table 13

Post Hoc Tukey Test between Class Rank and Self-Direction

					95% Confidence Interval	
Class Rank	Class Rank	Mean Difference	*SE*	Sig.	Lower Bound	Upper Bound
Beginning student	Mid-program Student	.10083	.04909	.104	-.0158	.2175
Beginning student	Recently graduated student	-.05849	.04960	.468	-.1763	.0593
Mid-program Student	Recently graduated student	-.15932*	.05541	.013	-.0593	.1783

* The mean difference is significant at the .05 level.

Table 14

Homogenous Subsets between Class Rank and Self-Direction

Class Rank	*N*	Subset for alpha = .05	
		1	2
Mid-program student (between first and second year)	31	3.0230	
Beginning student (recently admitted into an allied health program)	52	3.1238	3.1238
Recently graduated second-year student	30		3.1823
Sig.		.127	.493

Table 15

Descriptive Statistics for PRO-SDLS Subscales and Class Rank

		Beginning Student	Mid-Program Student	Recent Graduate	Total
Self-efficacy	*M*	4.0769	3.7935	4.0333	3.9876
	SD	.59725	.53937	.43417	.55123
	N	52	31	30	113
Initiative	*M*	3.4449	3.2204	3.944	3.3965
	SD	.53451	.64748	.54401	.57555
	N	52	31	30	113
Motivation	*M*	3.7923	3.5899	3.7833	3.7344
	SD	.45487	.55419	.45582	.48812
	N	52	31	30	113
Control	*M*	3.9337	3.6527	3.9444	3.8594
	SD	.51842	.48241	.43181	.49932
	N	52	31	30	113

Table 16

Multivariate Test – Wilks' Lambda for PRO-SDLS Subscales and Class Rank

Multivariate Test					
	Value	F	Hypothesis	Error *df*	Sig.
Wilks' Lambda	.918	1.162[a]	8.000	214.000	.324

a. Exact statistic

In summary, there was a significant difference among two of the three class ranks and perceived level of self-direction, F (2,110) = 4.286, p = .016. Post hoc testing revealed a significant mean difference between mid-program students (M = 3.0230, SD = .22056) and recently graduated students (M = 3.1823, SD = .23282). These findings suggest a significant difference between the perceived levels of self-direction between the class rank of mid-program students and recently graduated second-year students. However, it must be noted that the means between these two groups do not display large differences. The Wilks' lambda, p = .324, was not significant, so there are no significant differences between class rank and the PRO-SDLS subscale factors (self-efficacy, initiative, motivation, and control).

Differences between class rank and attitude toward continuing education. The second element examined was to what degree does attitude toward continuing education differ by the three types of class rank (beginning, mid-program, and recently graduated). Due to the low Cronbach's alpha of the RAACES subscales, each question or item was analyzed separately. A one-way MANOVA was employed to establish if there was a significance between class ranks. After the descriptive statistics were attained (Table 17), the Wilks' lambda, p = .160, was identified and the conclusion made that there are no significant differences between class rank and items on RAACES (Table 18). An analysis of the tests between-subjects was also obtained, but none of the items had significance. In summary, there were no significant findings or differences between class rank and attitude toward continuing education.

Question 3

To what degree does the relationship between perceived levels of self-direction or attitude toward continuing education and age among community college students in Allied Health programs exist?

Table 17

Descriptive Statistics between RAACES and Class Rank

		Beginning Student	Mid-Program Student	Recent Graduate	Total
1. I dislike studying	*M*	2.69	2.93	2.72	2.76
	SD	.787	.884	1.032	.881
	N	51	29	29	109
2. I'm fed up with teachers and classes	*M*	1.69	1.79	2.00	1.80
	SD	.678	.861	.964	.814
	N	51	29	29	109
3. I enjoy education activities that allow me to learn with others	*M*	4.08	4.03	4.38	4.15
	SD	.845	.626	.677	.756
	N	51	29	29	109
4. Successful people do not need adult education	*M*	2.27	1.76	2.17	2.11
	SD	.940	.988	1.256	1.057
	N	51	29	29	109
5. Adult education is mostly for people with little else to do	*M*	1.37	1.38	1.52	1.41
	SD	.599	.561	.574	.581
	N	51	29	29	109
6. Money employers spend on education/training is well spent	*M*	4.10	4.34	4.21	4.19
	SD	.700	.614	.861	.726
	N	51	29	29	109
7. Adult education helps people make better use of their lives	*M*	4.06	4.45	4.21	4.20
	SD	.904	.686	.726	.814
	N	51	29	29	109
8. Continuing my education would make me feel better about myself	*M*	4.61	4.72	4.52	4.61
	SD	.635	.455	.574	.575
	N	51	29	29	109
9. Adult education is an important way to help people cope with changes in their lives	*M*	3.86	4.00	4.17	3.98
	SD	.895	1.000	.805	.902
	N	51	29	29	109

Table 18

Multivariate Test – Wilks' Lambda for RAACES and Class Rank

Multivariate Test					
	Value	F	Hypothesis	Error *df*	Sig.
Wilks' Lambda	.791	1.352[a]	18.000	196.000	.160

a. Exact statistic

The relationships between perceived levels of self-direction or attitude toward continuing education were examined by using a non-parametric statistic, Spearman rho (ρ) rank correlation at a .05 level of significance. An assumption for Spearman Rho (ρ) is that the data do not assume normal distribution and there is a monotonic relationship between two variables (Morgan et al., 2013). In this study, a non-parametric statistic was utilized to examine the data because there was not a normal distribution of age (e.g., 40% of the sample was age 22 or younger while 8% of the sample was 40 or older). The Spearman rho (ρ) rank correlation measures the strength and direction of the association between two ranked variables (Suter, 2012).

The relationship between age and perceived level of self-direction. The first item inspected was age and perceived level of self-direction. The results demonstrated that there was a significant positive relationship between overall self-direction and age ($r = .238$, $p = .014$). Additionally, there is a significant positive relationship between the PRO-SDLS and self-efficacy ($r = .259$, $p < .01$) in addition to initiative ($r = .222$, $p = .022$). In summary, as age increases than overall self-direction as well as self-efficacy and initiative increases (Table 19).

Table 19

Spearman Rho (ρ) Rank Correlation between PRO-SDLS and Age

		Age	*N*
Self-Efficacy	Correlation Coefficient	.259	106
	Sig. (2-tailed)	.007**	106
Initiative	Correlation Coefficient	.222	106
	Sig. (2-tailed)	.022*	106
Motivation	Correlation Coefficient	.166	106
	Sig. (2-tailed)	.088	106
Control	Correlation Coefficient	.148	106
	Sig. (2-tailed)	.129	106
Overall	Correlation Coefficient	.238	106
	Sig. (2-tailed)	.014*	106

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

The relationship between age and attitude toward continuing education. The next component examined the strength of the relationship between age and attitude toward continuing education (see Table 20). There was a statistically significant negative correlation ($\rho = -.232$, $p = .017$) between age and a dislike of studying. Therefore, a younger participant is more likely to dislike studying. There was also a statistically significant positive correlation ($\rho = .240$, $p = .013$) between age and the belief that adult education is a meaningful way to help people cope with life changes. Older participants are more likely to view adult education as an important way to help people cope with changes in their lives.

Conclusion

In Chapter Four, descriptive statistics related to demographic questions have been provided. Chapters One and Three present an analysis and examination of each research question. A discussion focused on significant findings, possible implications for practice, and future research recommendations are provided in Chapter Five.

Table 20

Spearman Rho (ρ) Rank Correlation between RAACES and Age

	Age (years)		
	Correlation Coefficient	Sig. (2-tailed)	*N*
1. I dislike studying	-.232	.017*	106
2. I'm fed up with teachers and classes	-.097	.324	106
3. I enjoy education activities that allow me to learn with others	.054	.583	104
4. Successful people do not need adult education	-.116	.236	106
5. Adult education is mostly for people with little else to do	-.144	.146	104
6. Money employers spend on education/ training is well spent	.063	.521	106
7. Adult education helps people make better use of their lives	.139	.157	105
8. Continuing my education would make me feel better about myself	.073	.457	105
9. Adult education is an important way to help people cope with changes in their lives	.240	.013*	106

* Correlation is significant at the 0.05 level (2-tailed).

Chapter 5

Discussion and Recommendations

Chapter Five provides discussion and recommendations for future research. This study's purpose was to contribute knowledge or information designed to inform others regarding self-directed learning and attitude toward continuing education. Exploring the relationships between self-direction and attitude toward continuing education in Allied Health programs could enhance faculty understanding. Identifying possible connections between self-direction and attitude toward continuing education, as well as approaches to teaching techniques can enhance community college support of self-direction. A brief summation and discussion of the findings, implications for practice, and recommendations for future research is presented in this chapter.

Summary of the Study

The study's purpose was to explore relationships between self-directed learning and attitude toward continuing education in Allied Health programs at a community college. After completion of the literature review, a previous research study could not be pinpointed that explicitly investigated relationships between self-directed learning and attitude toward continuing education. Thus, this study has the possibility of making contributions in multiple regions of research. The study adds to existing knowledge, particularly as it relates to self-directed learning and attitudes toward continuing education in health care. Additionally, the results could aid faculty members in Allied Health programs as well as administrators on how to prepare health care professionals for the workforce (El-Gilany & Abusaad, 2013).

The survey was sent to 388 allied health degree-seeking students enrolled at a community college with some rural campuses in the southeast United States, which provided a sample for the study (n = 113). An email requesting participation in the study began the recruitment process

(Appendix D). The original email was comprised of a general information sheet along with a secured web link that allowed access to an online version of the survey. Three subsequent email reminders were distributed to the students over a couple week period (approximately every three to four days). The final results included 113 responses for a response rate of 29.38%. The sample was composed of entering freshman, students transitioning from first to second year (mid-program), and recently graduated second-year students. Participants completed the PRO-SDLS (Appendix E) and RAACES (Appendix F) instruments, as well as two demographic questions (Appendix G), which resulted in a 36-question survey. Statistical analyses were completed to explore the relationships between self-direction and attitude toward continuing education. Demographics of age and class rank as well as their relationship with self-direction and attitude toward continuing education were also examined. To summarize the sample, mean age was 27.42 and ranged from 18 to 54 years old. Class rank demographics were 46.02% (n = 52) for beginning or recently admitted student was, 27.43% (n = 31) for mid-program, and 26.55% (n = 30) for recently graduated students.

The results revealed that level of self-direction has a significant relationship between several items related to attitude toward continuing education. One of the strongest findings was that participants with high levels of self-direction viewed adult education as a way to make better use of their lives. Additionally, the study found that as age increased, the participants increasingly viewed adult education as an essential way to help people cope with changes in their lives and younger students are more likely to dislike studying. The PRO-SDLS reliability was consistent with prior research studies identified in the literature. Based upon the results of this study, caution should be exercised when utilizing RAACES.

Discussion

The impact of the instruments and demographics as related to the research questions is included in this discussion. The relationships between self-directed learning and attitude toward continuing education are deliberated. Additionally, a discussion concerning the demographic variables, age and class rank, as they relate to self-direction and attitude toward continuing education is included.

Instrumentation

The PRO-SDLS reliability in this study (α = .89) was observed to be acceptable and comparable in value to previous studies as discussed in Chapter Two (Beard, 2016; Chou, 2012; Conner, 2012; Durate, 2014; Fogerson, 2005; Gasper, et. al., 2009; Holt, 2011; Stockdale, 2003; Stockdale & Brockett, 2010). The data showed reliability for the subscale, motivation (α = .64), to be below the usually acceptable Cronbach's alpha value range of .70 (Groves et al., 2013; Warner, 2013). The study's sample consisted of allied health students admitted to competitive admission programs. Due to the highly selective nature of each program, it is possible that there was less variation across the sample regarding motivation. Due to the low reliability surrounding the PRO-SDLS motivation subscale (α = .64), results from that area in this study should be interpreted with care.

The reliability of RAACES for this study was low. The Cronbach's alpha (α = .67) was below what is typically acceptable and lower than that of previous studies reviewed in the literature (Blunt and Yang, 2002; Lau, 2012; Paloş and Gunaru, 2017; Stamouli, Valkanos, & Economou, 2010). It was due to the low Cronbach's alpha value for RAACES, and the three subscales that led to the decision of analyzing items individually for this study versus as a whole or as subscales. The RAACES instrument (Blunt & Yang, 2002) was a revision of AACES

(Darkenwald & Hayes, 1988). There have not been many studies utilizing RAACES since its creation. The nine items in RAACES separated individually demonstrated greater reliability versus being placed into three different subscales together. It is possible that each item on RAACES may be a good predictor of attitude toward continuing education as a standalone question, but does not fit well together in its respective subscales because there are only three items in each category. It was indicated by Tavakol and Dennick (2011) that if a survey is too small, the value of alpha is reduced and additional related items "testing the same concept should be added to the test" (p. 53). This study's reliability information has added to the body of knowledge, and demonstrated that perhaps the RAACES instrument needs to be reevaluated. In future studies, researchers may consider using the original AACES (Darkenwald & Hayes, 1988) to measure attitude toward continuing education. The AACES instrument contains 22 items and a Cronbach's alpha of .90.

Demographics

The individuals participating in this study could have possibly influenced some of the findings. For example, more self-directed students may have chosen to respond to the survey. The delimitations and limitations of this study may have impacted the results (e.g., participant's perceptions and not actual behavior were reported). From the 388 email invitations dispersed, the total response rate of individuals who completed both instruments and the demographic questions was low; 29.38% (n = 113). The allied health students that replied to the invite to partake in the survey may have been more self-directed than those that chose not to participate. It is important to self-identify these items, but it is likely that they did not impact results enough to cause high concern.

Research Questions

The relationships between self-directed learning and attitude toward continuing education were tested via three research questions. The individual research questions are reiterated below and followed by a summary of significant findings. A discussion of the results is also included.

Question 1. *To what degree does a relationship between perceived levels of self-direction and attitude toward continuing education among community college students in Allied Health programs exist*?

Research question one explored the relationships between self-directed learning and attitude toward continuing education in the sample provided by community college students in Allied Health programs. The Pearson's product-moment correlation coefficient (*r*) was examined for the PRO-SDLS and individually for items in RAACES. Based on the results, it is noted that as overall level of self-direction increases, adults have an increasingly favorable view of adult education being a meaningful way to help people cope and make better use of their life. Costa and Kallick (2004) found in their research that people who are highly self-directed are always learning and tend to seize problems or circumstances as valuable opportunities to learn. There were some significant findings between initiative and attitude toward continuing education. The subscale factor, initiative, includes an individual's ability to take responsibility and complete tasks. As observed in the data, participants with a high level of initiative believe that adult education helps people make better use of their lives, feel better about themselves, and is a relevant way to help people cope with changes. Participants with high initiative are better suited to assume responsibility and have an increasingly favorable outlook towards adult education. A low level of initiative relates to a stronger dislike of studying. For participants that have low

initiative, it would be difficult to take control of their education, and it would be problematic to complete required tasks.

The data from the study indicated that self-efficacy plays a role in attitude toward continuing education. Self-efficacy encompasses an individual's belief about their capabilities and helps to determine how they behave. In this study, it was observed that as self-efficacy increases, participants believe that money used on adult education is well spent, helps people make better use of their life, feel better, and is a meaningful way to help people cope with change. Additionally, a low level of self-efficacy relates to a stronger dislike of studying, being more fed up with classes and teachers, and feeling that adult education is mostly for people with little else to do. In summary, participants with high self-efficacy have increased confidence that adult education is worth the effort and enables them to feel, cope, and make better use of their lives. In contrast, participants that have a low self-efficacy have less confidence in their capabilities that lead to increased frustration with studying, teachers, and education.

Furthermore, the results indicated that students with a high level of motivation believe that money used on adult education is well spent, helps people make better use of their life, and feel improved. A low level of motivation communicates a stronger dislike of studying, being fed up with classes and teachers, belief that successful people do not need adult education and that adult education is mostly for people with little else to do. Consequently, individuals who are highly motivated tend to view educational activities more positively and enjoy participating. Although, the results surrounding motivation should be interpreted with caution due to the low Cronbach's alpha ($\alpha = .64$) on the PRO-SDLS subscale.

The last component, control, had a small number of significant findings and refers to learner control, where the participant can feel a sense of influence over the process. Brockett and

Hiemstra (1991) stated that a person's capability or inclination to manage their learning governs the ability for self-direction. The data in this study indicated that as control decreases, participants become increasingly fed up with teachers and classes. As control increases, participants believe that adult education helps people make better use of their lives and feel better about themselves. Hence, as participants influence or control decreases, they become increasingly frustrated and view adult education less favorably.

Question 2. *To what degree does perceived levels of self-direction or attitude toward continuing education differ by class rank among community college students in Allied Health programs?*

The second research question examined was to what degree does perceived levels of self-direction or attitude toward continuing education differ by class rank among community college students in Allied Health programs. There was a significant difference among two of the three class ranks and perceived level of self-direction, $F(2,110) = 4.286$, $p = .016$. Post hoc testing revealed a significant mean difference between mid-program students ($M = 3.0230$, $SD = .22056$) and recently graduated students ($M = 3.1823$, $SD = .23282$). It is noted that the mean between these two groups does not display large differences. Perhaps this data should be reevaluated in another study with a larger sample size to determine if there can be a replication in the mean difference between these two groups or class ranks. The Wilks' lambda, $p = .324$, was not statistically significant, so there are no noteworthy differences between class rank and the PRO-SDLS subscale factors (self-efficacy, initiative, motivation, and control).

There were no significant findings or differences between class rank and attitude toward continuing education. The Wilks' lambda, $p = .160$, was identified and the conclusion obtained

that there are no significant differences between class rank and any items on RAACES. An analysis of the tests between-subjects was obtained, but none of the items had significance.

Question 3. *To what degree does the relationship between perceived levels of self-direction or attitude toward continuing education and age among community college students in Allied Health programs exist?*

The third research question examined to what degree is there a relationship between perceived levels of self-direction or attitude toward continuing education and age. A non-parametric statistic, Spearman rho (ρ) rank correlation at a .05 level of significance was used. The findings indicated the presence of a significant positive relationship between overall self-direction and age (r = .238, p = .014). There was also a significant positive relationship between the PRO-SDLS subscales self-efficacy (r = .259, p = .007) and initiative (r = .222, p = .022). As age increases, overall self-direction as well as the components of self-efficacy and initiative increase. Older participants in the study were considered to be more self-directed as well as displayed additional confidence in their abilities and willingness to take responsibility.

The belief that adult education is a relevant way to help people cope with change (ρ = .240, p = .013) had a statistically significant positive correlation with age. As age increased, the participants increasingly viewed adult education as an essential way to help people handle issues in their life. There was also a statistically significant negative relationship between age and a dislike of studying (ρ = -.232, p = .017). Younger participants are more likely to dislike studying.

Implications for Practice

From the 388 email invitations distributed, the total sample response rate was calculated to be 29.38% (n = 113). The respondents in the study could have influenced the results because they were from one community college. The mean for this group of allied health students for the

PRO-SDLS instrument was 81.39 (*SD* = 5.81; *n* = 113) and within the range of scores from previous studies. All of the survey items were susceptible to the respondents personal understanding and perceptions (i.e., not actual behavior). The following section will include a discussion focused on the results and the implication for practice.

Self-Direction and Attitude toward Continuing Education

It is necessary to communicate that correlation does not equal causation. However, many statistically significant findings from research question one suggest that there is a relationship between aspects of self-direction and attitude toward continuing education among community college students in Allied Health programs. Continuing education is a critical component in health care because professionals work in a multifaceted discipline that is continuously advancing. Persistent social, technological, and scientific changes present numerous challenges to health care professionals (Cadorin et al., 2012). O'Shea (2003) acknowledged that self-directed learning in health professional programs is vital in preparing students for the intensity and difficulty of an arduous curriculum but also emphasizes developing self-directed learning abilities for adjusting to a constantly fluctuating work setting. It is essential to provide patients with assurance that they are being tended to by competent health care workers while receiving any medical care (Lazarus et al., 2002).

The circumstances surrounding an individual's enrollment in a continuing education program, whether mandatory or actual interest in the topic, can make a difference in their enthusiasm (Francke et al., 1995). Daily and Landis (2014) found that the most effective motivations are internal rather than external. Additionally, Knowles (1989) stated that most adults are responsive to extrinsic motivators (i.e., increased job opportunities), but intrinsic motivators have a more powerful impact. As it relates to formal education, self-directed learning

and fostering positive attitudes toward continuing education is an integral part of the learning process. Hiemstra (1994) noted that traditional educational situations do not promote self-direction. Recipients of traditional education can develop patterns of learning and motivation that are extrinsic or in response to purely satisfying a course objective (Bolhuis, 2003). Lunyck-Child et al. (2001) found that continued experience and the opportunity to engage in self-directed activities enhance student confidence and they become increasingly involved in mutual goal setting.

It is crucial to find a way to blend the various needs of students and Allied Health programs, while also incorporating self-directed learning strategies. An implication for faculty in Allied Health programs could be a challenge to design courses and a curriculum that incorporates or merges parts of a learner-centered approach, which gives some control of the learning process to students (Hall, 2011). For example, the SSDL model proposed by Gerald Grow (1991) provides gradual stages or activities that educational programs can integrate into their classes to prepare students with the skills to become lifelong learners. Each stage is intended to familiarize the student to self-directed learning steadily and serves to ensure that core content and required information is delivered. Some students who are unacquainted with self-directed learning may become frustrated if they are suddenly immersed in an independent new concept or assignment that is entirely different from more traditional ones (Staverdes, 2011). Graduates going into the workplace will quickly observe that patient care is complex and not predictable. Therefore, they must be able to function, think, and train independently to evolve with the needs of the facilities and patients (Avdal, 2013).

The significant findings or correlations observed in this study can be connected back to the current literature. For example, the overall PRO-SDLS score had significant positive findings

with items on RAACES focused on adult education helping people make better use of their life and a meaningful way to help people manage change. Additionally, there were significant positive findings between continuing education allowing an individual feel better about themselves and self-efficacy, initiative, and motivation. The original study conducted by Houle (1961) derived that adults choose to participate in continuing education for goal, activity, and learning-oriented reasons. Also, the findings for this study link to Brockett and Hiemstra's PRO model (1991) where an individual will take personal responsibility for their learning; "individuals assume ownership for their own thoughts the findings and actions" (p. 26). This portion is noteworthy because many individuals may not be able to control their environment, but they can govern the response (i.e., they are equipped better to handle change). Additionally, individuals who are highly self-directed can distinguish levels of personal weakness and then work to resolve the deficit and improve learning skills (Avdal, 2013; Yuan et al., 2012). Stockdale and Brockett (2011) also suggested that individuals with a high self-efficacy have an increased chance of positively controlling their environment and learning outcomes.

There were negatively correlated significant findings between several categories of the PRO-SDLS and a dislike of studying, being fed up with teachers/classes, and the feeling that successful people do not need adult education (e.g., as self-efficacy decreased more students disliked studying). This finding is supported in the literature, and individuals contain varying degrees of "willingness to accept responsibility for themselves as learners" (Brockett & Hiemstra, 1991, p. 27). The PRO model addresses learner self-direction, which is associated to internal factors such as level of self-direction. Self-direction is the link between the external and internal factors as well as an individual's level of personal responsibility (i.e., a dislike of studying or recognizing the need for adult education). Applying this information in Allied Health

programs may have a substantial effect on how faculty facilitate self-directed learning principles in their area of study (El-Gilnay & Abusaad, 2013). With proper dialogue and mentoring, students may be able to recognize that becoming increasingly self-directed will help their professional careers and ultimately the patients (Levett-Jones, 2005). Health care professionals who participate in continuing education activities enhance the outcome of patient care by improving practice (Fox & Bennett, 1998; Gibbs, 2011; Henwood et al., 2004).

Differences between Class Rank and Self-Direction or Attitude

Results from the study illustrated that there was a significant mean difference between mid-program students (M = 3.0230, SD = .22056) and recently graduated students (M = 3.1823, SD = .23282). The mean difference between these two groups is small, but the results demonstrate that recently graduated students have increased perceived levels of self-direction than students in the middle of their program of study. The literature indicates that personal level of comfort with subject matter can influence the level of self-direction. People may operate in different domains at various times, so they may be more or less self-directed depending upon their confidence in a "particular subject at a particular time" (Jennings, 2007, p. 520). Levett-Jones (2005) found that students in the early stages of their training prefer a teacher to take the lead. Lunyck-Child et al. (2001) found that during their lessons, students “undergo a transformation that begins with negative feelings [i.e., confusion, frustration, and dissatisfaction] and ends with confidence and skills for lifelong learning” (p. 116). The SSDL model specifies that students adapt naturally to different learning options as they progress through a course and items are added incrementally (Grow, 1991). These concepts could play an important role in how Allied Health programs approach the introduction of self-directed learning into its courses.

Future studies concerning the best way to incorporate self-directed learning principles into health programs would be beneficial.

There were no significant findings or differences between class rank and attitude toward continuing education (Wilks' lambda, $p = .160$). Students in competitive Allied Health programs have worked hard to obtain admission into selective cohorts. Hence, these specific types of students may already recognize that continuing education will be a large component of their professional lives and have already formed an opinion.

The Relationship between Age and Self-Direction or Attitude

The study's results suggested that a weak significant positive relationship between age and overall self-direction ($r = .238$, $p = .014$), self-efficacy ($r = .259$, $p = .007$), and initiative ($r = .222$, $p = .022$) was present. As age increases, overall self-direction as well as self-efficacy and initiative increase. Researchers in the field have indicated that mature individuals are usually more self-directed than their younger counterparts because self-direction develops over time (Ausburn, 2002; Grow, 1991; Long & Agyekum, 1984; McCauley and McClelland, 2004; Timmins, 2008; Yuan et al., 2012). Ausburn (2002) found that younger individuals especially have difficulty maintaining self-motivation and can feel frustrated, isolated, and overwhelmed because they have yet to develop as many life experiences and the ability to connect everything. Furthermore, younger individuals may still have fresh memories of elementary, middle, and high school teachings where self-directed learning would not have been a priority (Grow, 1991).

The relationship between age and attitude toward continuing education was also explored. A weak statistically significant negative correlation ($\rho = -.232$, $p = .017$) was observed between age and an item on RAACES (dislike of studying). Younger participants are more likely to dislike studying than older participants. Hargreaves (2005) argues that aging is not only a

process of chronological accumulation, but also an accrual of wisdom. Grow (1991) argues that students are repeatedly exposed to the premise that teachers are to be viewed as experts who are there to provide their knowledge during early school years. Therefore, students of traditional education can acquire patterns of learning and motivation that are extrinsically motivated (Bolhuis, 2003). Research has found that the most effective motivation is internal rather than external (Blunt and Yang, 2002; Daily & Landis, 2014; Knowles, 1989). Perhaps younger participants are still remembering pedagogical teaching styles and responding to studying as an extrinsic motivation, which results in increased resistance to the activity. Older adults that participate in higher education may be motivated toward personal growth and improving self-esteem (i.e., intrinsic motivation) while reducing the effects of aging (Yi-Yin, Lin, 2011). These ideas are essential for faculty to recognize when working with a diverse age range of students in community college Allied Health programs.

A weak statistically significant positive correlation was presented ($\rho = .240$, $p = .013$) between age and the belief that adult education as an essential way to help manage and cope with life changes. Older participants are more likely to view adult education as an essential way to handle unplanned changes or life-altering events. Tennant (2006) recognized that a self-directed learner contains an increased capability to distinguish and manage varying personal problems as well as having the ability to renew motivation. Age may also provide a way for an individual to use their accrual of knowledge or experience and apply it positively when forced with unplanned changes or life conflicts.

Recommendations for Further Study

The participants in this study was limited to one community college and may not be generalizable to other Allied Health programs at other schools. One of the goals of this study was

to help broaden the amount of information and knowledge about the content areas. The following section discusses future research recommendations.

First, future research studies could include more diverse participants. This sample consisted of 113 allied health respondents at the same community college who were either a beginning, mid-program, or recently graduated second-year student.

Second, other community college settings should be included in future research. This study included one community college in the southeastern United States with some rural campuses. Increasing the size of the study to include other colleges with a possible expanded diverse population may permit the findings to be generalizable to other schools. Studies involving other programs could be accomplished by contacting other community colleges in the same state system.

Third, additional analysis of the PRO-SDLS instrument can continue to enhance the amount of information concerning its reliability. Health care will continue to need professionals that can deliver excellent patient care and remain up-to-date with the newest technology and information. These providers must have developed self-directed learning skills to meet these critical changes in health care. The PRO-SDLS has demonstrated sustained reliability and solid findings in previous studies. Perhaps creating a form of the PRO-SDLS to be used in other environments (e.g., health care) would be beneficial.

Fourth, when utilizing the RAACES instrument in any future studies, caution should be applied. The original reliability results of RAACES were borderline too low but had been substantiated with the congeneric model. However, the reliability scores for RAACES and its sub-scales in this study was below what is considered normally acceptable values. There are only a few other studies to compare reliability results, but it can be observed that the values were on

the lower end of acceptable. Also, researchers should reexamine the original AACES. That instrument is older, but had a consistently acceptable Cronbach's Alpha of .90 and 22 items versus nine on the revised RAACES. Perhaps creating a version of AACES to be used in health care environments would be beneficial.

Fifth, community colleges tend to have a high percentage of first-generation students. Future research might look at comparing first-generation student responses versus other generations to determine if being a first-generation student helps to explain any relationships. Another recommendation would be to explore rural versus urban students in community college settings and determine if that information makes a difference.

Sixth, it would be beneficial to explore the relationships between self-direction and attitudes toward continuing education. The RAACES instrument or its subscales were not utilized as a whole for analysis. Additional analysis of the relationships between self-direction and attitude toward continuing education would be helpful to improve available information in the literature. For example, how does self-efficacy, initiative, control, and motivation help an adult “feel better about themselves”? This sort of investigation may help to enlarge the theoretical framework of self-direction by linking it with how adults feel about continuing education activities. Finally, experimental research investigating introducing self-directed learning principles (e.g., SSDL model) or techniques to foster positive attitudes toward continuing education into the classroom is recommended. These types of studies would help programs and faculty decide which teaching approaches are the most meaningful and useful for health care professional students.

Conclusion

Continuing education will continue to be a critical component in health care because professionals work in a complex discipline that is continually evolving. A report published by the Institute of Medicine (IOM) in 2010 concluded that the professional health care workforce is inadequately prepared to assure the utmost quality of patient care and safety is delivered. This study was intended to enhance the amount of available information by investigating the relationships between self-direction and attitude toward continuing education. There were many findings in the study that add to the literature as well as the creation of new research questions to guide future studies. Hopefully, the findings from this study will increase the awareness that self-directed learning and individual aspects such as age, can be a predictor for specific items related to attitude toward continuing education. Allied Health programs may want to consider employing self-directed learning tactics in their classes to facilitate adult learners with improved self-direction, self-efficacy, motivation, initiative, and control. The goal is to facilitate health care professionals who are self-directed lifelong learners with positive attitudes toward continuing education and the ability to keep up with the continually changing field of medicine.

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Appendices

Appendix A

Cronbach's Alpha Results if Items Deleted for Motivation Subscale – PRO-SDLS

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's alpha if Item Deleted
1. I don't see any connection between the work I do for my courses and my personal goals and interests	21.98	9.574	.334	.613
2. I complete most of my college activities because I WANT to, not because I HAVE to	22.30	9.250	.274	.633
3. For most of my classes, I really don't know why I complete the work I do	21.98	9.648	.419	.596
4. Most of the work I do in my courses is personally enjoyable or seems relevant to my reasons for attending college	22.11	9.729	.353	.609
5. The primary reason I complete course requirements is to obtain the grade that is expected of me	23.51	8.882	.281	.636
6. The main reason I do the course activities is to avoid feeling guilty or getting a bad grade	22.81	7.472	.489	.556
7. Most of the activities I complete for my college classes are NOT really personally useful or interesting	22.24	9.239	.399	.594

Appendix B

Cronbach's Alpha Results if Items Deleted for RAACES

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's alpha if Item Deleted
1. I dislike studying	33.82	11.503	.365	.644
2. I'm fed up with teachers and classes	32.85	11.756	.366	.643
3. I enjoy education activities that allow me to learn with others	32.91	13.584	.055	.703
4. Successful people do not need adult education	33.17	10.324	.444	.625
5. Adult education is mostly for people with little else to do	32.47	12.862	.303	.657
6. Money employers spend on education/training is well spent	32	12.138	.355	.646
7. Adult education helps people make better use of their lives	32.85	10.719	.578	.595
8. Continuing my education would make me feel better about myself	32.44	12.415	.422	.639
9. Adult education is an important way to help people cope with changes in their lives	33.07	11.717	.312	.657

Appendix C

Summary of Significant Findings for Research Question One

Summary of Statistically Significant Findings					
	Self-Efficacy	Initiative	Motivation	Control	Overall Self-Direction
1. I dislike studying	Negative Correlation (r = -.195, p = .038)	Negative Correlation (r = -.257, p < .01)	Negative Correlation (r = -.373, p < .01)	No significant findings	No significant findings
2. I'm fed up with teachers and classes	Negative Correlation (r = -.306, p < .01)	No significant findings	Negative Correlation (r = -.445, p < .01)	Negative Correlation (r = -.245, p < .01)	No significant findings
4. Successful people do not need adult education	No significant findings	No significant findings	Negative Correlation (r = -.343, p < .01)	No significant findings	No significant findings
5. Adult education is mostly for people with little else to do	Negative Correlation (r = -.261, p = .061)	No significant findings	Negative Correlation (r = -.274, p < .01)	No significant findings	No significant findings
6. Money employers spend on education/ training is well spent	Positive Correlation (r = .208, p = .027)	No significant findings	Positive Correlation (r = .198, p = .035)	No significant findings	No significant findings
7. Adult education helps people make better use of their lives	Positive Correlation (r =.388, p < .01)	Positive Correlation (r = .242, p = .010)	Positive Correlation (r = .199, p = .036)	Positive Correlation (r =.290, p < .01)	Positive Correlation (r =.223, p = .018)
8. Continuing my education would make me feel better about myself	Positive Correlation (r =.254, p < .01)	Positive Correlation (r =.274, p < .01)	Positive Correlation (r =.284, p < .01)	Positive Correlation (r =.209, p = .027)	No significant findings
9. Adult education is an important way to help people cope with changes in their lives	Positive Correlation (r =.199, p = .034)	Positive Correlation (r =.290, p < .01)	No significant findings	No significant findings	Positive Correlation (r =.465, p < .01)

Appendix D

Participant Information Sheet

The University of Tennessee - Knoxville

PROJECT TITLE
Relationship of Self-Direction and Attitude toward Continuing Education in Community College Allied Health Programs

PARTICIPANTS
The participants in this study are allied health students admitted into a degree program.

INVITATION
You are being asked by, Julie Hall, M.P.H., RT(R)(CT), a doctoral student from the University of Tennessee, to take part in a research study aimed at exploring the relationship between perceived level of self-directed learning and attitude toward continuing education among allied health students enrolled in a community college in the Southeast United States. This is a correlational study aimed at exploring potential relationships between key variables, meaning that this design cannot determine cause and effect. The objectives of this research study include (a) determining to what degree is there a relationship between perceived level of self-direction and attitude toward continuing education, (b) determining to what degree perceived level of self-direction or attitude toward continuing education differ by class rank, (c) determining to what degree is there a relationship between perceived level of self-direction or attitude toward continuing education and age, (d) the information obtained from this study will be used to generate new hypotheses for future experimental testing.

INFORMATION ABOUT PARTICIPANTS' INVOLVEMENT IN THE STUDY
You are being asked to open a secured/anonymous survey link. Once you open the secured link, you will be asked to answer two demographic questions: age and class rank (beginning, mid-program, or recently graduated allied health student). Next, you will be asked 34-questions related to perceived level of self-direction and attitude toward continuing education.

TIME COMMITMENT
Time requirements for completing the online survey will be approximately 15-20 minutes.

PARTICIPANTS RIGHTS
You may decide to stop being a part of the research study at any time without explanation. You have the right to ask that any data you have supplied to that point be withdrawn/destroyed.

BENEFITS
You may not directly benefit from your participation in this research study. Potential benefits include furthering research for society/science.

RISKS
Most research involves some risk to confidentiality and it is possible that someone could find out you were in this study or see your study information, but the investigator believes this risk is unlikely because of the procedures used to protect your information. Measures to maintain confidentiality will include online survey security settings that will prevent the recording of participants' IP address, email, and name. There will be no penalties for choosing not to participate within this study.

COST, REIMBURSTMENT, AND COMPENSATION
Your participation in this study is voluntary and there will be no compensation for completing the online survey. If you choose to not participate or to stop participating at any time, your decision will not result in a penalty, affect your rights, or your standing in any allied health program.

CONFIDENTIALITY/ANONYMITY
Information in the study will be kept confidential. Online data will be password protected, and access to statistical data will be made available only to the researcher and a University of Tennessee statistical consultant. To clarify, an anonymous survey link will prevent the collection of any personal identifiers such as email addresses, name, or IP address. Finally, no reference will be made in oral or written reports, which could link participants or participants' institution to the study.

FOR FURTHER INFORMATION
If you have questions at any time about the study or the procedures, you may contact:

Julie Hall [Primary Investigator]
865-481-2015
hallja3@roanestate.edu

IRB Compliance Officer
University of Tennessee, Office of Research & Engagement
865-974-7697
utkirb@utk.edu

Thank you for your consideration to participant in this research study.

Appendix E

Name:_____ Date:_____ ID#_____

A Learning Experience Scale (PRO-SDLS)

Please check one answer for each statement. There are no "right" answers to these statements, which pertain to your recent learning experiences in college-not just those experiences from this class (although they may be the same).

Item	Strongly Disagree	Disagree	Sometimes	Agree	Strongly Agree
1. I am confident in my ability to consistently motivate myself.					
2. I frequently do extra work in a course just because I am interested.					
3. I don't see any connection between the work I do for my courses and my personal goals and interests.					
4. If I am not doing as well as I would like in a course, I always independently make the changes necessary for improvement.					
5. I always effectively take responsibility for my own learning.					
6. I often have a problem motivating myself to learn.					
7. I am very confident in my ability to independently prioritize my learning goals.					
8. I complete most of my college activities because I WANT to, not because I HAVE to.					
	Strongly Disagree	**Disagree**	**Sometimes**	**Agree**	**Strongly Agree**
9. I would rather take the initiative to learn new things in a course rather than wait for the instructor to foster new learning.					
10. I often use materials I've found on my own to help me in a course.					
11. For most of my classes, I really don't know why I complete the work I do.					

	Strongly Disagree	Disagree	Sometimes	Agree	Strongly Agree
12. I am very convinced I have the ability to take personal control of my learning.					
13. I usually struggle in classes if the professor allows me to set my own timetable for work completion.					
14. Most of the work I do in my courses is personally enjoyable or seems relevant to my reasons for attending college.					
15. Even after a course is over, I continue to spend time learning about the topic.					
16. The primary reason I complete course requirements is to obtain the grade that is expected of me.					
17. I often collect additional information about interesting topics even after the course has ended.					
18. The main reason I do the course activities is to avoid feeling guilty or getting a bad grade.					
19. I am very successful at prioritizing my learning goals.					
20. Most of the activities I complete for my college classes are NOT really personally useful or interesting.					
21. I am really uncertain about my capacity to take primary responsibility for my learning.					
22. I am unsure about my ability to independently find needed outside materials for my courses.					
23. I always effectively organize my study time.					
24. I don’t have much confidence in my ability to independently carry out my student plans.					
25. I always rely on the instructor to tell me what I need to do in the course to succeed.					

Appendix F

The Revised Attitude toward Continuing Education Scale (RAACES)

By Adrian Blunt, Ph.D., and Baiyin Yang, Ph.D.

Using the scale below as a guide, write a number beside each statement to indicate how much you agree with it.
1 = strongly disagree
2 = disagree
3 = sometimes
4 = agree
5 = strongly agree

Item	Strongly Disagree	Disagree	Sometimes	Agree	Strongly Agree
1. I dislike studying					
2. I'm fed up with teachers and classes					
3. I enjoy education activities that allow me to learn with others					
4. Successful people do not need adult education					
5. Adult education is mostly for people with little else to do					
6. Money employers spend on education/training is well spent					
7. Adult education helps people make better use of their lives					
8. Continuing my education would make me feel better about myself					
9. Adult education is an important way to help people cope with changes in their lives					

Appendix G

Demographic Questionnaire

1. What is your age? _____

2. Select the option below that best describes your class rank.
    a. Beginning student (recently admitted into an allied health program)
    b. Mid-program student (between first and second year)
    c. Recently graduated second year student

Appendix H

Permission for Use: RAACES

Dear Julie,

Yes, by all means. You can use the instrument. Good luck in your study!

Baiyin YANG, Ph.D.
Cheung Kong Scholar Professorship (Ministry of Education, P. R. China)
Flex Chair Professor
Chair, Department of Leadership and Organization Management
School of Economics and Management
Tsinghua University
Beijing, P. R. China 100084
Office: 327G, Shunde Building
Telephone: 86-10-62796314
Fax: 86-10-62772021

E-mail: yangby@sem.tsinghua.edu.cn

发件人： Hall, Julie A <hallja3@roanestate.edu>
发送时间： 2018年4月6日 9:00
收件人： yangby@sem.tsinghua.edu.cn
主题： Request for Permission to use RAACES - Julie Hall
重要性： 高

Dr. Yang,

I have completed my comprehensive exams for a PhD in Educational Psychology with a concentration in adult learning from the University of Tennessee, Knoxville. I am in the process of completing my dissertation proposal and I am very interested in utilizing the Revised Attitude Towards Continuing Education Scale (RAACES). I am an Associate Professor at a community college in a Radiologic Technology program and interested in conducting research in the allied health professions. My advisor is Dr. Ralph Brockett and we agreed that RAACES would be a good fit for my proposed study.

For the dissertation proposal, I plan to use RAACES to measure attitude toward continuing education and a different instrument to measure perceived level of self-direction among beginning and senior health professional students. A report published by the Institute of Medicine (IOM) in 2010 concluded that the professional health care workforce is not prepared to guarantee delivery of the highest quality patient care and safety. Researchers found that health professionals tend to focus on meeting regulatory requirements rather than diversifying their skills or filling personal knowledge gaps (IOM, 2010). I believe that my

proposed dissertation and obtained data may add to the body of knowledge concerning continuing education and self-directed learning in health care.

Please let me know if I may have permission to use this instrument and if you have any questions. Thank you in advance for considering my request!

Julie Hall, M.P.H, R.T. (R)(CT)(ARRT)
Radiologic Technology Program Director
Associate Professor
Roane State Community College
Oak Ridge Branch Campus
865-481-2000; ext. 2015

Appendix I

Permission for Use: PRO-SDLS

From: Susan Stockdale [mailto:sstockda@kennesaw.edu]
Sent: Sunday, April 15, 2018 11:28 PM
To: Hall, Julie A <hallja3@roanestate.edu>
Cc: brockett@utk.edu
Subject: Re: Request for Permission to use PRO-SDLS - Julie Hall

Hi Julie,

Of course you can use the scale. You may choose to more specifically define the domain of learning you wish to measure (i.e., continuing education activities/courses). Please do so. Good luck and Ralph told me he still uses a purple pen for corrections....not my favorite color to this day.

Susan

Susan Stockdale, Ph.D.
Professor of Educational Psychology and Middle Grades Education
Program Director, Woodrow Wilson Teaching Fellowship
Former Associate Dean of Graduate Studies, Bagwell College of Education
Bagwell Education Building 451
Kennesaw State University
Kennesaw, GA 30144
Work: 470-578-2060 Cell: 678-491-1020

From: Hall, Julie A <hallja3@roanestate.edu>
Sent: Sunday, April 15, 2018 9:19 PM
To: Susan Stockdale
Subject: Request for Permission to use PRO-SDLS - Julie Hall

Dr. Stockdale,

I have completed my comprehensive exams for a PhD in Educational Psychology with a concentration in adult learning from the University of Tennessee, Knoxville. I am in the process of completing my dissertation proposal and I am very interested in utilizing the Personal Responsibility Orientation - Self-Directed Learning Scale (PRO-SDLS). I am an Associate Professor at a community college in a Radiologic Technology program and interested in conducting research in the allied health professions. My advisor is Dr. Ralph Brockett and we agreed that PRO-SDLS would be a good fit for my proposed study.

For the dissertation proposal, I plan to use the PRO-SDLS to measure perceived level of self-direction and a different instrument to measure attitude toward continuing education among class ranks with health professional students. A report published by the Institute of Medicine (IOM) in 2010 concluded that the professional health care workforce is not prepared to guarantee delivery of the highest quality patient care and safety. Researchers found that health professionals tend to focus on meeting regulatory requirements rather than diversifying their skills or filling personal knowledge gaps (IOM, 2010). I believe that my proposed dissertation and obtained data may add to the body of knowledge concerning continuing education and self-directed learning in health care.

Please let me know if I may have permission to use this instrument and if you have any questions. Thank you in advance for considering my request!

Julie

Julie Hall, M.P.H, R.T. (R)(CT)(ARRT)
Radiologic Technology Program Director
Associate Professor
Roane State Community College
Oak Ridge Branch Campus
865-481-2000; ext. 2015

Appendix J

RSCC – IRB Approval

Hi Julie,

This email serves as your formal IRB approval from RSCC for your research. Please update me if anything changes about your proposed research.

We can talk later today or on Monday about recruitment. Good luck getting everything through IRB at UTK.

Best,

Jeffrey Tinley
Director of Institutional Research
Roane State Community College
(865) 354-3000 Ext. 4816

From: Hall, Julie A
Sent: Thursday, April 19, 2018 12:53 PM
To: Tinley, Jeffrey J <tinleyjj@roanestate.edu>
Subject: RSCC - IRB Approval - Julie Hall
Importance: High

Hi Jeff!

We talked a few weeks ago about the data collection for my dissertation being completed at RSCC (allied health degree program students).

I have attached some information concerning the email that will be shared with prospective research participants, the information that will be on the Qualtrics survey link prior to commencing with the study, a copy of both instruments/demographic questionnaire, and written permission from each instruments creator to utilize it. At this point, my dissertation committee has approved my study to move forward to the data collection phase. After I obtain permission to collect data at RSCC, I will also go through the IRB process at the University of Tennessee – Knoxville (it will be an exempt study since I am doing an anonymous electronic survey).

Is there anything else that you will need to get IRB approval from RSCC?

Thank you so much!

Julie

Appendix K

University of Tennessee – IRB Approval

May 10, 2018

Julie Ann Hall
UTK - Coll of Education, Hlth, & Human - Educational Psychology & Counseling

Re: UTK IRB-18-04479-XM
Study Title: Relationship of Self-Direction and Attitude toward Continuing Education in Community College Allied Health Programs

Dear Julie Ann Hall:

The Human Research Protections Program (HRPP) reviewed your application for the above referenced project and determined that your application is eligible for **exempt** review under 45 CFR 46.101, Category 2. Your application has been determined to comply with proper consideration for the rights and welfare of human subjects and the regulatory requirements for the protection of human subjects.

Therefore, this letter constitutes full approval of your application (version 1.1) as submitted, including:
Email invitation for survey participation - Version 1.0
Informed Consent - Located on Survey Link - Version 1.1
PRO-SDLS Instrument - Version 1.0
Demographic Questionnaire - Version 1.0
The Revised Attitude toward Continuing Education Scale - Version 1.0
The above listed documents have been dated and stamped IRB approved on 5/10/2018.

Informed consent may be altered in accord with 45CFR46.116(d), with a consent cover statement used in lieu of a consent interview. The requirement to secure a signed consent form is waived under 45CFR46.117(c)(2).

In the event that volunteers are to be recruited using solicitation materials, such as brochures, posters, web-based advertisements, etc., these materials must receive prior approval of the IRB.

Any alterations (revisions) in the protocol [any of the above listed/stamped IRB approved documents] must be promptly submitted to and approved by the UTK Institutional Review Board prior to implementation of these revisions. You have individual responsibility for reporting to the Board in the event of unanticipated or serious adverse events and subject deaths.

Sincerely,
Colleen P. Gilrane, Ph.D.
Chair

Vita

Julie Hall (hallja3@roanestate.edu) is a Doctoral Candidate at the University of Tennessee, Knoxville in Educational Psychology, with a concentration in Adult Leaning. She obtained her Masters of Public Health with a concentration in Community Health Education and a Bachelor's of Science in Biochemistry, Molecular, and Cellular Biology from the University of Tennessee, Knoxville. Julie is a registered radiologic technologist in radiography and computed tomography with the American Registry of Radiologic Technologists (ARRT). She is currently a program director and associate professor at Roane State Community College in Oak Ridge, Tennessee.